



# Manual

Version 1.0

DI-724U

## Wireless 108G QoS Router

# Table of Contents

<b>Package Contents</b> .....	<b>4</b>
<b>Minimum System Requirements</b> .....	<b>4</b>
<b>Introduction</b> .....	<b>5</b>
<b>Features and Benefits</b> .....	<b>6</b>
<b>Hardware Overview</b> .....	<b>7</b>
Connections .....	7
LEDs.....	8
<b>Wireless Basics</b> .....	<b>9</b>
Standards-Based Technology .....	10
Installation Considerations .....	10
<b>Getting Started</b> .....	<b>11</b>
<b>Using the Configuration Menu</b> .....	<b>12</b>
Home .....	13
<i>Wizard</i> .....	13
<i>Wireless</i> .....	14
<i>WAN</i> .....	16
Dynamic IP Address.....	16
Static IP Address.....	17
PPPoE .....	19
<i>LAN</i> .....	21
<i>DHCP</i> .....	22
Advanced .....	24
<i>Virtual Server</i> .....	24
<i>Applications</i> .....	26
<i>Port Forwarding</i> .....	28
<i>Stream Engine</i> .....	29
<i>Filters</i> .....	31
MAC Filters.....	31
<i>Parental Control</i> .....	32
URL Blocking .....	32
<i>Firewall</i> .....	33
<i>DMZ</i> .....	34
<i>Performance</i> .....	35
<i>Schedule</i> .....	36
Tools .....	37
<i>Admin</i> .....	37

<i>Time</i> .....	38
<i>System</i> .....	40
<i>Firmware</i> .....	41
<i>DDNS</i> .....	42
<i>Misc</i> .....	43
Status.....	46
<i>Device Info</i> .....	46
<i>Log</i> .....	48
<i>Stats</i> .....	49
<i>Wireless</i> .....	50
<i>Printserver</i> .....	51
<b>Troubleshooting</b> .....	<b>52</b>
<b>Technical Specifications</b> .....	<b>58</b>
<b>Frequently Asked Questions</b> .....	<b>61</b>
<b>Appendix</b> .....	<b>87</b>
Securing Your Network .....	87
Glossary .....	88
<b>Contacting Technical Support</b> .....	<b>96</b>
<b>Warranty</b> .....	<b>97</b>
<b>Registration</b> .....	<b>101</b>

# Package Contents

- D-Link DI-724U Wireless G QoS Router
- CAT-5 Ethernet Cable (All the DI-724U's Ethernet ports are Auto-MDIX)
- Power Adapter (5.0V, 2.5A)
- CD-ROM with Software and Manual
- Quick Installation Guide



**Note: Using a power supply with a different voltage than the one included with your product will cause damage and void the warranty for this product.**

If any of the above items are missing, please contact your reseller.

# Minimum System Requirements

- Ethernet-Based Cable or DSL Modem
- Computers with Windows, Macintosh, or Linux-based operating systems with an installed Ethernet adapter and CD-ROM Drive
- Internet Explorer Version 6.0 or Netscape Navigator Version 7.0 and Above

# Introduction

The D-Link DI-724U Wireless 108G QoS Router is an 802.11g high-performance, wireless router that supports high-speed wireless networking at home, at work or in public places.

Unlike most routers, the DI-724U provides data transfers at up to 108Mbps (compared to the standard 54Mbps) when used with other D-Link *AirPlus Xtreme G* products. The 802.11g standard is backwards compatible with 802.11b products. This means that you do not need to change your entire network to maintain connectivity. You may sacrifice some of 802.11g's speed when you mix 802.11b and 802.11g devices, but you will not lose the ability to communicate when you incorporate the 802.11g standard into your 802.11b network. You may choose to slowly change your network by gradually replacing the 802.11b devices with 802.11g devices .

In addition to offering faster data transfer speeds when used with other 802.11g products, the DI-724U has the newest, strongest, most advanced security features available today. When used with other 802.11g WPA (WiFi Protected Access) and 802.1x compatible products in a network with a RADIUS server, the security features include:

**WPA:** Wi-Fi Protected Access authorizes and identifies users based on a secret key that changes automatically at a regular interval. WPA uses TKIP (Temporal Key Integrity Protocol) to change the temporal key every 10,000 packets (a packet is a kind of message transmitted over a network.) This insures much greater security than the standard WEP security. (By contrast, the older WEP encryption required the keys to be changed manually.)

**802.1x:** Authentication is a first line of defense against intrusion. In the Authentication process the server verifies the identity of the client attempting to connect to the network. Unfamiliar clients would be denied access.

For home users that will not incorporate a RADIUS server in their network, the security for the DI-724U, used in conjunction with other 802.11g products, will still be much stronger than ever before. Utilizing the Pre Shared Key mode of WPA, the DI-724U will obtain a new security key every time it connects to the 802.11g network. You only need to input your encryption information once in the configuration menu. No longer will you have to manually input a new WEP key frequently to ensure security, with the DI-724U, you will automatically receive a new key every time you connect, vastly increasing the safety of your communications.

\* Maximum wireless signal rate derived from IEEE Standard 802.11g specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead lower actual data throughput rate. D-Link 108G performance results are based on testing with other D-Link 108G enabled devices utilizing Packet Bursting, FastFrames, Turbo Mode and Compression techniques. Data already compressed may not benefit from the D-Link 108G compression techniques..

# Features and Benefits

- Fully compatible with the 802.11g standard to provide a wireless data rate of up to 108Mbps\*.
- Backwards compatible with the 802.11b standard to provide a wireless data rate of up to 11Mbps
- **WPA** (Wi Fi Protected Access) authorizes and identifies users based on a secret key that changes automatically at a regular interval, for example:
  - TKIP** (Temporal Key Integrity Protocol), in conjunction with a RADIUS server, changes the temporal key every 10,000 packets, ensuring greater security
  - Pre Shared Key** mode means that the home user, without a RADIUS server, will obtain a new security key every time the he or she connects to the network, vastly improving the safety of communications on the network
- 802.1x Authentication in conjunction with the RADIUS server verifies the identity of would be clients
- Utilizes **OFDM** technology (**O**rtogonal **F**requency **D**ivision **M**ultiplexing)
- User-friendly configuration and diagnostic utilities
- Operates in the 2.4GHz frequency range
- Connects multiple computers to a Broadband (Cable or DSL) modem to share the Internet connection
- Advanced Firewall features: Supports NAT with VPN pass-through, providing added security, MAC Filtering, URL Filtering, and Scheduling
- DHCP server enables all networked computers to automatically receive IP addresses
- Web-based interface for Managing and Configuring
- Access Control to manage users on the network
- Supports special applications that require multiple connections
- Equipped with 4 10/100 Ethernet ports, 1 WAN port, Auto MDI/MDIX

\* Maximum wireless signal rate derived from IEEE Standard 802.11g specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead lower actual data throughput rate. D-Link 108G performance results are based on testing with other D-Link 108G enabled devices utilizing Packet Bursting, FastFrames, Turbo Mode and Compression techniques. Data already compressed may not benefit from the D-Link 108G compression techniques..

# Hardware Overview

## Connections

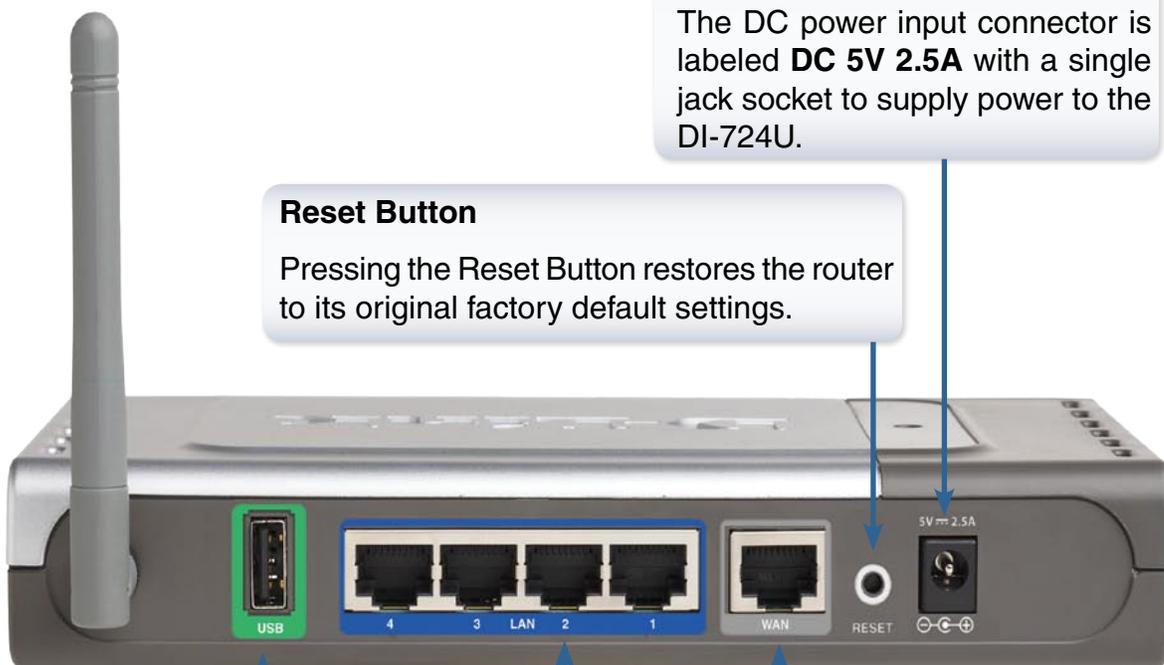
All Ethernet Ports (WAN and LAN) are auto MDI/MDIX, meaning you can use either a straight-through or a crossover Ethernet cable.

### DC Power Connector

The DC power input connector is labeled **DC 5V 2.5A** with a single jack socket to supply power to the DI-724U.

### Reset Button

Pressing the Reset Button restores the router to its original factory default settings.



### USB Port

Connection for a USB printer.

### Auto MDI/MDIX WAN Port

This is the connection for the Ethernet cable to the Cable or DSL modem.

### Auto MDI/MDIX LAN Ports

These ports automatically sense the cable type when connecting to Ethernet-enabled computers.

# LEDs

### WAN LED

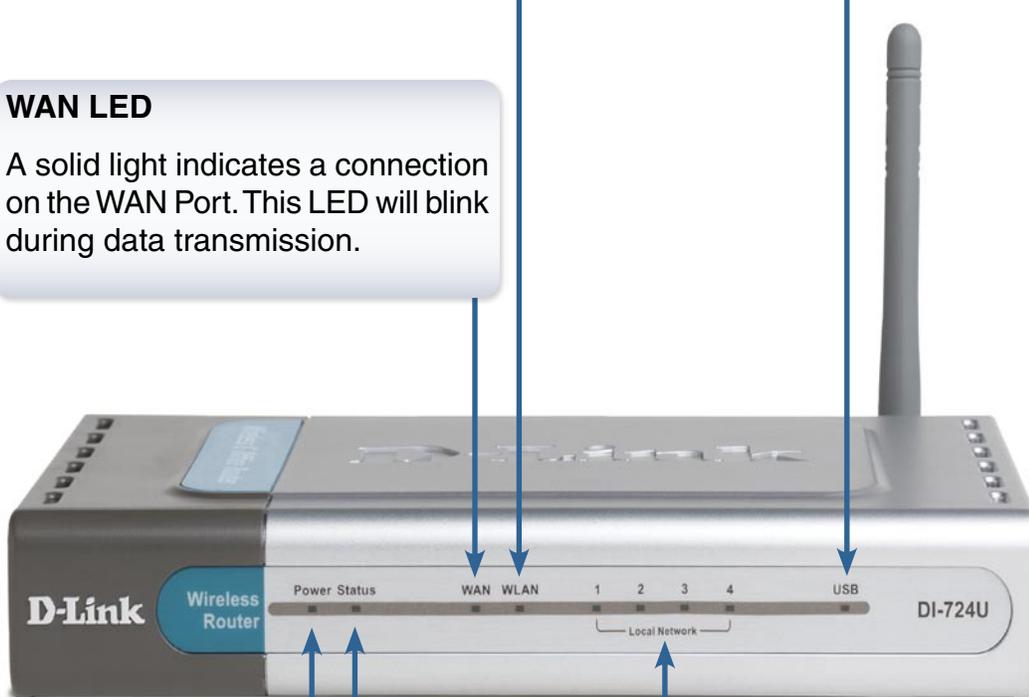
A solid light indicates that the wireless segment is ready. This LED will blink during data transmission.

### USB LED

A solid light indicates a connection on the USB port. This LED will blink during data transmission.

### WAN LED

A solid light indicates a connection on the WAN Port. This LED will blink during data transmission.



### POWER LED

A solid green light indicates a proper connection to the power supply.

### LOCAL NETWORK LED

A solid green light indicates a connection to an Ethernet-enabled computer on ports 1-4. This LED will blink during data transmission.

### STATUS

A blinking light indicates that the DI-724U is ready.

# Wireless Basics

D-Link wireless products are based on industry standards to provide easy-to-use and compatible high-speed wireless connectivity within your home, business or public access wireless networks. D-Link wireless products will allow you access to the data you want, when and where you want it. You will be able to enjoy the freedom that wireless networking brings.

A WLAN is a cellular computer network that transmits and receives data with radio signals instead of wires. WLANs are used increasingly in both home and office environments, and public areas such as airports, coffee shops and universities. Innovative ways to utilize WLAN technology are helping people to work and communicate more efficiently. Increased mobility and the absence of cabling and other fixed infrastructure have proven to be beneficial for many users.

Wireless users can use the same applications they use on a wired network. Wireless adapter cards used on laptop and desktop systems support the same protocols as Ethernet adapter cards.

People use wireless LAN technology for many different purposes:

**Mobility** - Productivity increases when people have access to data in any location within the operating range of the WLAN. Management decisions based on real-time information can significantly improve worker efficiency.

**Low Implementation Costs** – WLANs are easy to set up, manage, change and relocate. Networks that frequently change can benefit from WLANs ease of implementation. WLANs can operate in locations where installation of wiring may be impractical.

**Installation and Network Expansion** - Installing a WLAN system can be fast and easy and can eliminate the need to pull cable through walls and ceilings. Wireless technology allows the network to go where wires cannot go - even outside the home or office.

**Scalability** – WLANs can be configured in a variety of topologies to meet the needs of specific applications and installations. Configurations are easily changed and range from peer-to-peer networks suitable for a small number of users to larger infrastructure networks to accommodate hundreds or thousands of users, depending on the number of wireless devices deployed.

**Inexpensive Solution** - Wireless network devices are as competitively priced as conventional Ethernet network devices.

## Standards-Based Technology

The DI-724U Wireless 108G QoS Router utilizes the **802.11g** standard.

The IEEE **802.11g** standard is an extension of the 802.11b standard. It increases the data rate up to 54Mbps\* within the 2.4GHz band, utilizing **OFDM technology**.

This means that in most environments, within the specified range of this device, you will be able to transfer large files quickly or even watch a movie in MPEG format over your network without noticeable delays. This technology works by transmitting high-speed digital data over a radio wave utilizing **OFDM (Orthogonal Frequency Division Multiplexing)** technology. **OFDM** works by splitting the radio signal into multiple smaller sub-signals that are then transmitted simultaneously at different frequencies to the receiver. **OFDM** reduces the amount of **crosstalk** (interference) in signal transmissions.

The DI-724U is backwards compatible with 802.11b devices. This means that if you have an existing 802.11b network, the devices in that network will be compatible with 802.11g devices at speeds of up to 11Mbps in the 2.4GHz range.

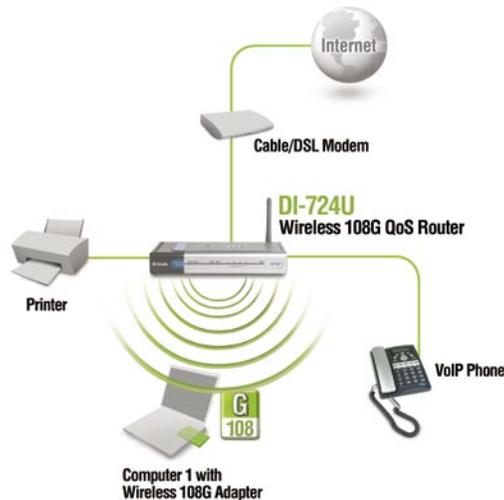
## Installation Considerations

The D-Link DI-724U Wireless 108G QoS Router lets you access your network, using a wireless connection, from virtually anywhere within its operating range. Keep in mind, however, that the number, thickness and location of walls, ceilings, or other objects that the wireless signals must pass<sup>1</sup> Keep the number of walls and ceilings between the DI-724U and other network devices to a minimum - each wall or ceiling can reduce your D-Link wireless product's range from 3-90 feet (1-30 meters.) Position your devices so that the number of walls or ceilings is minimized.

- 1 Keep the number of walls and ceilings between the DI-724U and other network devices to a minimum - each wall or ceiling can reduce your D-Link wireless product's range from 3-90 feet (1-30 meters.) Position your devices so that the number of walls or ceilings is minimized.
- 2 Be aware of the direct line between network devices. A wall that is 1.5 feet thick (.5 meters), at a 45-degree angle appears to be just over 2 feet (.6 meters) thick. At a 2-degree angle it looks over 42 feet (14 meters) thick! Position devices so that the signal will travel straight through a wall or ceiling (instead of at an angle) for better reception.
- 3 Building Materials can impede the wireless signal - a solid metal door or aluminum studs may have a negative effect on range. Try to position wireless devices and computers with wireless adapters so that the signal passes through drywall or open doorways and not other materials.
- 4 Keep your product away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that generate extreme RF noise.

\* Maximum wireless signal rate derived from IEEE Standard 802.11g specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead lower actual data throughput rate.

# Getting Started



*Please remember that **D-Link Wireless 108G** devices are pre-configured to connect together, right out of the box, with their default settings.*

For a typical wireless setup at home (as shown above), please do the following:

- 1** You will need broadband Internet access. (a Cable or DSL-subscriber line into your home or office)
- 2** Consult with your Cable or DSL provider for proper installation of the modem.
- 3** Connect the Cable or DSL modem to the DI-724U Wireless Broadband Router (*see the printed Installation Guide included with your router.*)
- 4** If you are connecting a desktop computer to your network, install the D-Link *AirPlus Xtreme G* DWL-G520 wireless PCI adapter into an available PCI slot on your desktop computer. You may also install the DWL-520+, or the DWL-520. (*See the printed Installation Guide included with the network adapter.*)
- 5** Install the D-Link DWL-G650 wireless Cardbus adapter into a laptop computer. (*See the printed nstallation Guide included with the DWL-G650.*)
- 6** Install the D-Link DFE-530TX+ adapter into a desktop computer. The four Ethernet LAN ports of the DI-724U are Auto MDI/MDIX and will work with both straight through and cross-over cable. (*See the printed Quick Installation Guide included with the DFE-530TX+.*)

# Using the Configuration Menu

Whenever you want to configure your DI-724U, you can access the Configuration Menu by opening the Web-browser and typing in the IP Address of the DI-724U. The DI-724U's default IP Address is shown below:



- Open the Web browser.
- Type in the **IP Address** of the Router (http://192.168.0.1).



Note: if you have changed the default IP Address assigned to the DI-724U, make sure to enter the correct IP Address.

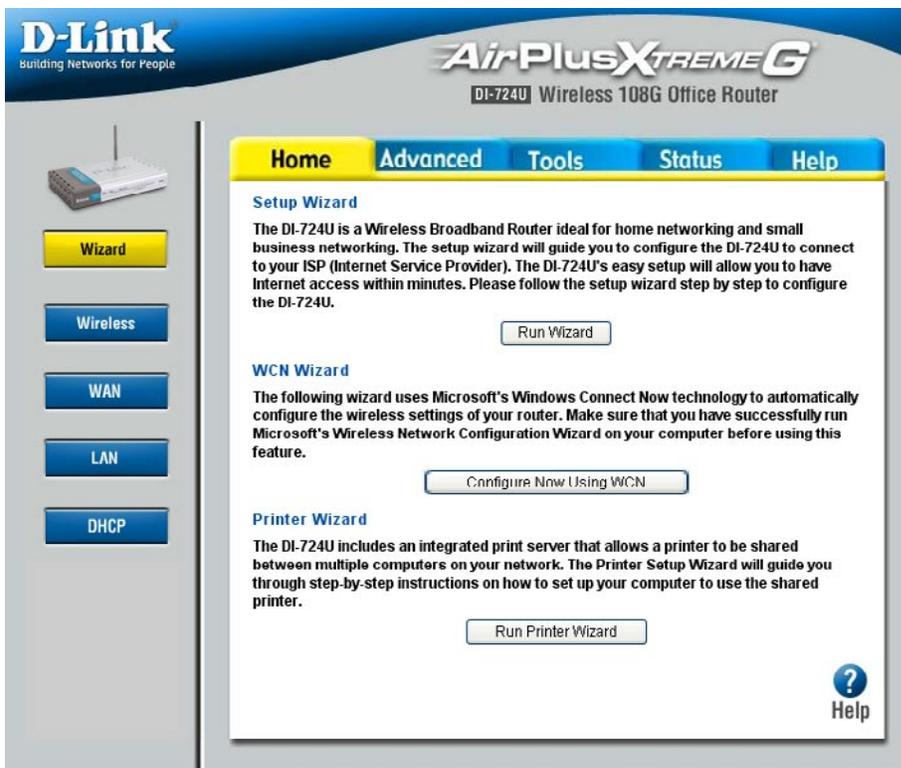
- Select "**admin**" from the User Name drop down menu.
- Leave the **Password** blank.
- Click Log In.

# Home

The Advanced tab provides the following configuration options: Wizard, Wireless, WAN, LAN, and DHCP.

## Wizard

The Home>Wizard screen will appear. Please refer to the *Quick Installation Guide* for more information regarding the Setup Wizard.



Home > Wizard

These buttons appear on most of the configuration screens in this section. Please click on the appropriate button at the bottom of each screen after you have made a configuration change.



Clicking **Apply** will save changes made to the page



Clicking **Cancel** will clear changes made to the page



Clicking **Help** will bring up helpful information regarding the page

## Wireless

### Wireless Settings

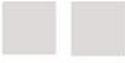
These are the wireless settings for the AP(Access Point) Portion.

- Wireless Radio :**  On  Off
- SSID :**
- Channel :**   Auto Channel Select
- Super G™ Mode :**
- Transmission Rate :**  (Mbit/s)
- 802.11g Only Mode :**  Enabled  Disabled
- SSID Broadcast :**  Enabled  Disabled
- Security Mode :**  None  WEP  WPA-EAP  WPA-PSK

    
Apply Cancel Help

*Home > Wireless*

- Wireless Radio:** This gives you the option to turn off the wireless portion of the router. By default this feature is on.
- SSID:** Service Set Identifier (SSID) is the name designated for a specific wireless local area network (WLAN). The SSID's factory default setting is **default**. The SSID can be easily changed to connect to an existing wireless network or to establish a new wireless network.
- Channel:** **6** is the default channel. All devices on the network must share the same channel. (Note: The wireless adapters will automatically scan and match the wireless setting.)
- Super G Mode:** The default Super G setting is **Super G with Dynamic Turbo**. Super G is a group of performance enhancement features that increase end user application throughput in an 802.11g network. Super G is backward compatible to standard 802.11g devices. For top performance, all wireless devices on the network should be Super G capable. Select either Disabled, Super G without Turbo, Super G with Dynamic Turbo, or Super G with Static Turbo.

	<b>Transmission Rate:</b>	This allows you to specify the rate at which wireless clients are allowed to connect to the router at. Default is set to Auto.
	<b>802.11g Only Mode:</b>	If all of the wireless devices you want to connect with this router can connect in 802.11g mode, you can improve performance slightly by enabling this mode. If you want to connect 802.11b devices to this router, leave this option disabled.
	<b>SSID Broadcast:</b>	Service Set Identifier (SSID) is the name that identifies a specific wireless local area network (WLAN). When a wireless device is browsing for available wireless networks, this is the name that will appear in the list. For security purposes, it is highly recommended to change from the preconfigured network name. You can change the SSID to match an existing wireless network or create a new name to establish a new wireless network.
	<b>Security Mode:</b>	To protect your privacy, use the wireless security mode to configure the wireless security features. This device supports three wireless security modes including: WEP, WPA-Personal, and WPA-Enterprise. WEP is the original wireless encryption standard. WPA provides a higher level of security. WPA-Personal does not require an authentication server. The WPA-Enterprise option does require a RADIUS authentication server.
	<b>WPA Mode:</b>	WPA is the older standard; select this option if the clients that will be used with the router only support the older standard. WPA2 is the newer implementation of the stronger IEEE 802.11i security standard. With the "WPA2" option, the router tries WPA2 first, but falls back to WPA if the client only supports WPA. "WPA2 Only" mode allows only those clients that support WPA2.
	<b>Cipher Type:</b>	The encryption algorithm used to secure the data communication. TKIP (Temporal Key Integrity Protocol) provides per-packet key generation and is based on WEP. AES (Advanced Encryption Standard) is a very secure block based encryption. "TKIP and AES" is a hybrid mode that allows clients using TKIP as well as clients using AES.
	<b>Passphrase:</b>	The pre-shared key is entered as a pass-phrase of up to 63 alphanumeric characters in ASCII (American Standard Code for Information Interchange) format at both ends of the wireless connection. This phrase is used to generate session keys that are unique for each wireless client.

# WAN

## Dynamic IP Address

### WAN Settings

Please select the appropriate option to connect to your ISP.

- Dynamic IP Address      Choose this option to obtain an IP address automatically from your ISP. (For most Cable modem users)
- Static IP Address      Choose this option to set static IP information provided to you by your ISP.
- PPPoE      Choose this option if your ISP uses PPPoE. (For most DSL users)
- Others      PPTP, L2TP and BigPond Cable
  - PPTP      (for Europe use only)
  - L2TP      (for specific ISPs use only)
  - BigPond Cable      (for Australia use only)

### Dynamic IP Address

**Host Name :**

**MAC Address :**   
 (optional) Clone Your PC's MAC Address

**Primary DNS Server :**

**Secondary DNS Server :**  (optional)

**MTU :**  MTU default = 1500



*Home > WAN > Dynamic IP Address*

**Dynamic IP Address:**

A method of connection where the your ISP assigns your IP address when your router requests one from the ISP's server. Some ISP's require you to make some settings on your side before your router can connect to the Internet.

**Host Name:**

The Host Name is optional, but some ISPs may require it. The Host Name identifies your router to the ISP's server. This way they know your router is eligible to receive an IP address.

**MAC Address:**

The default MAC Address is set to the WAN's physical interface MAC address on the Broadband Router. It is not recommended that you change the default MAC address unless required by your ISP.

**Primary DNS Server:**

The IP address of the Domain Name Server. Your ISP will provide this information if it is required; otherwise, leave this box set to 0.0.0.0.

**Secondary DNS Server:**

This is optional.

**MTU:**

The Maximum Transmission Unit (MTU) is a parameter that determines the largest packet size (in bytes) that the router will send to the WAN. If LAN devices send larger packets, the router will break them into smaller packets. Ideally, you should set this to match the MTU of the connection to your ISP.

## Static IP Address

### WAN Settings

Please select the appropriate option to connect to your ISP.

- Dynamic IP Address      Choose this option to obtain an IP address automatically from your ISP. (For most Cable modem users)
- Static IP Address      Choose this option to set static IP information provided to you by your ISP.
- PPPoE      Choose this option if your ISP uses PPPoE. (For most DSL users)
- Others      PPTP, L2TP and BigPond Cable
  - PPTP      (for Europe use only)
  - L2TP      (for specific ISPs use only)
  - BigPond Cable      (for Australia use only)

### Static IP

**IP Address :**

**Subnet Mask :**

**Default Gateway :**

**MAC Address :**

(optional)

**Primary DNS Server :**

**Secondary DNS Server :**  (optional)

**MTU :**  MTU default = 1500



Home > WAN > Static IP Address

Choose Static IP Address if all WAN IP information is provided to you by your ISP. You will need to enter in the IP address, subnet mask, gateway address, and DNS address(es) provided to you by your ISP. Each IP address entered in the fields must be in the appropriate IP form, which are four octets separated by a dot (x.x.x.x). The Router will not accept the IP address if it is not in this format.

**IP Address:** Static Wan IP Address provided by your ISP.

**Subnet Mask:** Provided by your ISP.

**Default Gateway:** Static WAN Gateway provided by you ISP.

**MAC Address:** To input the MAC address of your computer, enter it in manually or connect to the router's Web-Management interface from the computer and click the Clone Your PC button.

**Primary DNS Server:** The IP address of the Domain Name Server. Your ISP will provide this information.

**Secondary DNS Server:** This is optional.

**MTU:** If this box is left blank, the router selects the usual MTU settings for the type of WAN interface in use. The Maximum Transmission Unit (MTU) is a parameter that determines the largest packet size (in bytes) that the router will send to the WAN. If LAN devices send larger packets, the router will break them into smaller packets. Ideally, you should set this to match the MTU of the connection to your ISP.

## PPPoE

### WAN Settings

Please select the appropriate option to connect to your ISP.

- Dynamic IP Address      Choose this option to obtain an IP address automatically from your ISP. (For most Cable modem users)
- Static IP Address      Choose this option to set static IP information provided to you by your ISP.
- PPPoE      Choose this option if your ISP uses PPPoE. (For most DSL users)
- Others      PPTP, L2TP and BigPond Cable
  - PPTP      (for Europe use only)
  - L2TP      (for specific ISPs use only)
  - BigPond Cable      (for Australia use only)

### PPPoE

**Username :**   
**Password :**   
**Verify Password :**   
**Service Name :**  (optional)  
**MAC Address :**   
 (optional)   
**Primary DNS Server :**   
**Secondary DNS Server :**  (optional)  
**Maximum Idle Time :**  (minutes, 0=infinite)  
**MTU :**  MTU default = 1492  
**Connect mode select :**  Always on  Manual  On demand



*Home > WAN > PPPoE*

Please be sure to remove any existing PPPoE client software installed on your computers.

Choose PPPoE (Point to Point Protocol over Ethernet) if your ISP uses a PPPoE connection. Your ISP will provide you with a username and password. This option is typically used for DSL services.

### PPPoE:

Select this option if your ISP requires you to use a PPPoE (Point to Point Protocol over Ethernet) connection. DSL providers typically use this option. This method of connection requires you to enter a Username and Password (provided by your Internet Service Provider) to gain access to the Internet.

	<b>User Name:</b>	This value is provided by agreement between you and the ISP.
	<b>Password:</b>	This value is provided by agreement between you and the ISP.
	<b>Verify Password:</b>	Re-enter the password.
	<b>Service Name:</b>	Service Name is optional, but may be required by some ISPs. If your ISP provides a Service Name, enter the provided value here.
	<b>MAC Address:</b>	To input the MAC address of your computer, enter it in manually or connect to the router's Web-Management interface from the computer and click the Clone Your PC button.
	<b>Primary DNS Server:</b>	The IP address of the Domain Name Server. Your ISP will provide this information if it is required; otherwise, leave this box set to 0.0.0.0.
	<b>Secondary DNS Server:</b>	This is optional.
	<b>Maximum Idle Time:</b>	The Maximum Idle Time value is only used for the "Connect on demand" connection mode. It specifies how many minutes the WAN connection can be idle before the connection is dropped. A value of zero means the connection will not be dropped due to idle time.
	<b>MTU:</b>	If this box is left blank, the router selects the usual MTU settings for the type of WAN interface in use. The Maximum Transmission Unit (MTU) is a parameter that determines the largest packet size (in bytes) that the router will send to the WAN. If LAN devices send larger packets, the router will break them into smaller packets. Ideally, you should set this to match the MTU of the connection to your ISP.
	<b>Connect Mode Select:</b>	Typically, connections such as PPPoE, PPTP, and L2TP are not always on. The router allows you to set the connection mode. Choose <b>Always on</b> , <b>Connect on demand</b> , or <b>Manual</b> .

## LAN

### LAN Settings

The IP address of the DI-724U.

**IP Address :**

**Default Subnet Mask :**

**Local Domain Name :**  (optional)

### DNS Relay

**DNS Relay :**  Enabled  Disabled



*Home > LAN*

LAN is short for Local Area Network. This is considered your internal network. These are the IP settings of the LAN interface for the DI-724U. These settings may be referred to as Private settings. You may change the LAN IP address if needed. The LAN IP address is private to your internal network and cannot be seen on the Internet.

#### **IP Address:**

The IP address of your router on the local area network. Your local area network settings are based on the address assigned here. For example, 192.168.0.1.

#### **Default Subnet Mask:**

The subnet mask of your router on the local area network.

#### **Local Domain Name:**

This entry is optional. Enter a domain name for the local network. The DHCP server will give this domain name to the computers on the LAN. So, for example, if you enter mynetwork.net here, and you have a PC with a name of chris, that PC will be known as chris.mynetwork.net. Note, however, if the router's WAN settings specify Dynamic IP Address, and the ISP's DHCP server assigns a domain name to the router, that domain name will override any name you enter here.

#### **DNS Relay:**

When DNS Relay is enabled, the router plays the role of a DNS server. DNS requests sent to the router are forwarded to the ISP's DNS server. You should disable DNS relay if you implement a LAN-side DNS server as a virtual server.

## DHCP

### DHCP Server

DI-724U can be set up as a DHCP Server to distribute IP addresses to the LAN.

**DHCP Server:**  Enabled  Disabled

**DHCP IP Address Range:**  -  (within the LAN subnet)

**Lease Time:**

**Always Broadcast:**  (Compatibility for some DHCP Clients)

### Static DHCP

Static DHCP allows the DHCP server to assign a fixed IP address to a specific MAC address.

Enabled  Disabled

**Computer Name:**

**IP Address:**

**MAC Address:**

**DHCP Client:**

Apply Cancel Help

### Static DHCP Client List

Enabled	Computer Name	IP Address	MAC Address
---------	---------------	------------	-------------

### Dynamic DHCP Client List

Computer Name	IP Address	MAC Address	Expire Time
mmpm-camera	192.168.0.172	00:0C:76:1C:CC:0C	23 Hours 49 Minutes

*Home > DHCP*

**DHCP** stands for *Dynamic Host Control Protocol*. The DI-724U has a built-in DHCP server. The DHCP Server will automatically assign an IP address to the computers on the LAN/private network. Be sure to set your computers to be DHCP clients by setting their TCP/IP settings to "Obtain an IP Address Automatically." When you turn your computers on, they will automatically load the proper TCP/IP settings provided by the DI-724U. The DHCP Server will automatically allocate an unused IP address from the IP address pool to the requesting computer. You must specify the starting and ending address of the IP address pool.

#### DHCP Server:

Select **Enabled** or **Disabled**. The **default** setting is **Enabled**.

#### DHCP IP Address Range:

These two values (from and to) define a range of addresses that the DHCP Server uses when assigning addresses to computers and devices on your Local Area Network.

#### Lease Time:

The amount of time that a computer may have an IP address before it is required to renew the lease.



## Advanced

The Advanced tab provides the following configuration options: Virtual Server, Applications, Port Forwarding, StreamEngine, Filters, Parental Control, Firewall, DMZ, Performance and Schedules.

### Virtual Server

#### Virtual Server

Virtual Server is used to allow Internet users access to LAN services.

Enabled  Disabled

**Name :**

**Private IP :**

**Protocol Type :**

**Private Port :**

**Public Port :**

**Firewall Rule :**

Details:

**Schedule :**

Details:




  
 Apply Cancel Help

#### *Advanced > Virtual Server*

The DI-724U can be configured as a virtual server so that remote users accessing Web or FTP services via the public IP address can be automatically redirected to local servers in the LAN (Local Area Network).

The DI-724U firewall feature filters out unrecognized packets to protect your LAN network so all computers networked with the DI-724U are invisible to the outside world. If you wish, you can make some of the LAN computers accessible from the Internet by enabling *Virtual Server*. Depending on the requested service, the DI-724U redirects the external service request to the appropriate server within the LAN network.

The DI-724U is also capable of port-redirection meaning incoming traffic to a particular port may be redirected to a different port on the server computer.

Each virtual service that is created will be listed at the bottom of the screen in the Virtual Servers List. There are pre-defined virtual services already in the table. You may use them by enabling them and assigning the server IP to use that particular virtual service.

- Virtual Server:** Here you can add a new Virtual Server List entry or edit an existing one.
- Name:** Assign a meaningful name to the virtual server, for example Web Server.
- Private IP:** The IP address of the system on your internal network that will provide the virtual service, for example 192.168.0.50.
- Protocol Type:** Select the protocol used by the service.
- Private Port:** The port that will be used on your internal network.
- Public Port:** The port that will be accessed from the Internet.
- Firewall Rule:** Select a firewall rule that controls access as needed for this virtual server. If you do not see the firewall rule you need in the list of firewall rules, go to the **Advanced -> Firewalls** page and create a new firewall rule.
- Schedule:** Select a schedule for when the service will be enabled. If you do not see the schedule you need in the list of schedules, go to the **Advanced -> Schedules** screen and create a new schedule.

**Example #1:** If you have a Web server that you wanted Internet users to access at all times, you would need to enable it. Web (HTTP) server is on LAN (Local Area Network) computer 192.168.0.25. HTTP uses port 80, TCP

Name: Web Server  
 Private IP: 192.168.0.25  
 Protocol Type: TCP  
 Private Port: 80  
 Public Port: 80  
 Schedule: always

**Virtual Servers List**

Name	Private IP	Protocol	Firewall Rule	Schedule	
<input type="checkbox"/> FTP	0.0.0.0	TCP 21/21	Allow All	Always	 



Click on this icon to edit the virtual service.



Click on this icon to delete the virtual service.

**Example #2:**

If you have an FTP server that you wanted Internet users to access by WAN port 2100 and only during the weekends, you would need to enable it as such. FTP server is on LAN computer 192.168.0.30. FTP uses port 21, TCP.

Name: FTP Server  
 Private IP: 192.168.0.30  
 Protocol Type: TCP  
 Private Port: 21  
 Public Port: 2100  
 Schedule: From: 01:00AM to 01:00AM, Sat to Sun

All Internet users who want to access this FTP Server must connect to it from port 2100. This is an example of port redirection and can be useful in cases where there are many of the same servers on the LAN network.

## Applications

### Special Applications

Special Application is used to run applications that require multiple connections.

Enabled  Disabled

Name :

Trigger Port :  (ex. 100-200,588)

Trigger Type :

Public Port :  (ex. 100-200, 588)

Public Type :



### Special Applications List

Name	Trigger	Public		
<input type="checkbox"/> Battle.net	TCP 6112	TCP 6112		
<input type="checkbox"/> Dialpad	TCP 7175	TCP 51200-51201, 51210		
<input type="checkbox"/> ICU II	TCP 2019	TCP 2000-2038, 2050-2051		
<input type="checkbox"/> MSN Gaming Zone	TCP 47624	TCP 2300-2400, 28800-29000		
<input type="checkbox"/> PC-to-Phone	TCP 12053	TCP 12120,12122,24150-24220		
<input type="checkbox"/> Quick Time 4	TCP 554	TCP 6970-6999		

*Advanced > Applications*

Some applications require multiple connections, such as Internet gaming, video conferences, Internet telephony and others. These applications have difficulties working through NAT (Network Address Translation). Special Applications makes some of these applications work with the DI-724U. If you need to run applications that require multiple connections, specify the port normally associated with an application in the "Trigger Port" field, select the protocol type as TCP or UDP, then enter the public ports associated with the trigger port to open them for inbound traffic.

The DI-724U provides some predefined applications in the table on the bottom of the web page. Select the application you want to use and enable it.

Note: Only one PC can use each Special Application tunnel.

**Name:** Enter a name for the Special Application Rule, for example Game App, which will help you identify the rule in the future. You can also select from a list of common applications, and the remaining configuration values will be filled in accordingly.

**Trigger Port:** Enter the outgoing port or range of ports used by your application. [6500-6700]

**Trigger Type:** Select the outbound protocol used by your application. [Both]

**Public Port:** Enter the port or range of ports that you want to open up to Internet traffic. [6000-6200]

**Public Type:** Select the protocol used by the Internet traffic coming back into the router through the opened port range. [Both]

# Port Forwarding

## Port Forwarding

Port Forwarding is used to open multiple ports or range of ports in your router and redirect data through those ports to a single PC on your network

Enabled  Disabled

Name :

IP Address :

TCP Ports to Open :

UDP Ports to Open :

Firewall Rule :

Details:

Schedule :

Details:

    
Apply Cancel Help

## Port Forwarding List

Name	IP Address	TCP Ports	UDP Ports	Firewall Rule	Schedule
------	------------	-----------	-----------	---------------	----------

*Advanced > Port Forwarding*

Multiple connections are required by some applications, such as internet games, video conferencing, Internet telephony, and others. These applications have difficulties working through NAT (Network Address Translation). The Port Forwarding section is used to open multiple ports or a range of ports in your router and redirect data through those ports to a single PC on your network. This feature allows you to enter ports in various formats.

**Name:** Give the Port Forwarding entry a name that is meaningful to you, for example Game Server. You can also select from a list of popular games, and many of the remaining configuration values will be filled in accordingly. However, you should check whether the port values have changed since this list was created, and you must fill in the IP address field.



- IP Address:** Enter the local network IP address of the system hosting the game server, for example **192.168.0.50**.
- TCP Ports to Open:** Enter the TCP ports to open. [6159-6180, 99]
- UDP Ports to Open:** Enter the UDP ports to open. [6159-6180, 99]
- Firewall Rule:** Select a firewall rule that controls access as needed for this port forwarding rule. If you do not see the firewall rule you need in the list of firewall rules, go to the **Advanced** -> **Firewalls** page and create a new firewall rule.
- Schedule:** Select a schedule for the times when this rule is in effect. If you do not see the schedule you need in the list of schedules, go to the **Advanced** -> **Schedules** screen and create a new schedule.

## Stream Engine

### StreamEngine

Use this section to configure StreamEngine Quality of Service Technology. StreamEngine improves your online experience by ensuring that important traffic is prioritized over other network traffic, such as FTP or Web.

Enabled  Disabled

#### StreamEngine Setup

Dynamic Fragmentation :

Automatic Uplink Speed :

Measured Uplink Speed : Not Estimated kbps

Uplink Speed :  kbps <<

Connection Type :

Detected xDSL Or Other Frame Relay Network : No



*Advanced > Stream Engine*

The StreamEngine™ feature helps improve your network performance by prioritizing applications. By default, the StreamEngine settings are disabled.

		
	<b>Dynamic Fragmentation:</b>	This option should be enabled when you have a slow Internet uplink. It helps to reduce the impact that large low priority network packets can have on more urgent ones by breaking the large packets into several smaller packets.
		
		
	<b>Automatic Uplink Speed:</b>	When enabled, this option causes the router to automatically measure the useful uplink bandwidth each time the WAN interface is re-established (after a reboot, for example).
		
	<b>Measured Uplink Speed:</b>	This is the uplink speed measured when the WAN interface was last re-established. The value may be lower than that reported by your ISP as it does not include all of the network protocol overheads associated with your ISP's network. Typically, this figure will be between 87% and 91% of the stated uplink speed for xDSL connections and around 5 kbps lower for cable network connections.
		
		
		
		
	<b>Uplink Speed:</b>	If Automatic Uplink Speed is disabled, this options allows you to set the uplink speed manually. Uplink speed is the speed at which data can be transferred from the router to your ISP. This is determined by your ISP.
		
		
	<b>Connection Type:</b>	By default, the router automatically determines whether the underlying connection is an xDSL/Frame-relay network or some other connection type (such as cable modem or Ethernet), and it displays the result as Detected xDSL or Frame Relay Network.
		
		
		
		
		
		
		
		
		
		
		

# Filters

## MAC Filters

### Filters

Filters are used to allow or deny LAN users from accessing the Internet.

IP Filters  MAC Filters

### IP Filters

Use IP Filters to deny LAN IP addresses access to the Internet.

Enabled  Disabled

**IP Range :**  -

**Port :**  -

**Protocol Type :**

**Schedule :**

Details:




  
**Apply Cancel Help**

### IP Filter List

IP range	Protocol	Schedule
----------	----------	----------

*Advanced > Filters > MAC Filters*

Use MAC (Media Access Control) Filters to allow or deny LAN (Local Area Network) computers by their MAC addresses from accessing the Network. You can either manually add a MAC address or select the MAC address from the list of clients that are currently connected to the Broadband Router.

**IP Filters:**

The Filters section allows you to control access in and out of devices on your network. Use this feature as Parental Controls to only grant access to approved sites, limit web access based on time or dates, and/or block access from applications such as peer-to-peer utilities or games.

**MAC Filters:**

The MAC address filter section controls access to the LAN (and therefore to the Internet) by computers or other network devices. This feature is most useful to prevent unauthorized wireless devices from connecting to your network. LAN computers are identified by the unique MAC addresses of their network adapters. A MAC address is a unique ID assigned by the manufacturer of the network adapter.

# Parental Control

## URL Blocking

### Parental Control

Parental Control filters are used to allow or deny LAN users from accessing the Internet.

### Domain Blocking

Enabled  Disabled

**Deny** users to access all domains except "Permitted Domains"

#### Add Domain

Domain :  (eg: dlink.com)



*Advanced > Parental Control > URL Blocking*

URL Blocking is used to deny LAN computers from accessing all websites except for permitted domains. A URL is a specially formatted text string that defines a location on the Internet. If any part of the URL contains the allowed word, the website will be accessible to LAN computers. To use this feature, enter the text string to be allowed and click **Apply**. The text to be allowed will appear in the list. To delete the text, just highlight it and click **Delete**.

**Parental Control:** The Parental Controls section controls access to Web sites from computers on the LAN.

**Domain Blocking:** When "enabled", access is permitted only to web sites listed in the "Allowed Web Site List". When "disabled", access is permitted to all web sites.

# Firewall

## Firewall Rules

Firewall Rules can be used to allow or deny traffic from passing through the DI-724U.

**Name :**

**Action :**  Allow  Deny

**Source IP Range :**  to



## Firewall Rules List

Name	Action	Source IP Range
------	--------	-----------------

*Advanced > Firewall*

Firewall Rules is an advanced feature used to deny or allow traffic from passing through the DI-724U. It works in the same way as IP Filters with additional settings. You can create more detailed access rules for the DI-724U. Firewall Rules contain all network firewall rules pertaining to IP (Internet Protocol).

In the Firewall Rules List at the bottom of the screen, the priorities of the rules are from top (highest priority) to bottom (lowest priority).

Note: The DI-724U MAC Address filtering rules have precedence over the Firewall Rules.

- Name:** Enter a name for the rule that is meaningful to you.
- Action:** The rule can either Allow or Deny messages.
- Source IP Range:** Define the range of Internet addresses this rule applies to.

The router automatically logs(records) events of possible interest in its internal memory. If there is not enough internal memory for all events, logs of older events are deleted, but logs of the latest events are retained.

## DMZ

### DMZ

DMZ (Demilitarized Zone) is used to allow a single computer on the LAN to be exposed to the Internet .

Enabled  Disabled

IP Address:



*Advanced > DMZ*

If you have a client PC that cannot run Internet applications properly from behind the DI-724U, then you can set the client up for unrestricted Internet access. It allows a computer to be exposed to the Internet. This feature is useful for gaming purposes. Enter the IP address of the internal computer that will be the DMZ host. Adding a client to the DMZ (Demilitarized Zone) may expose your local network to a variety of security risks, so only use this option as a last resort.

**DMZ:** DMZ means “Demilitarized Zone.” If an application has trouble working from behind the router, you can expose one computer to the Internet and run the application on that computer.

**IP Address:** Specify the IP address of the computer on the LAN that you want to have unrestricted Internet communication. If this computer obtains its address Automatically using DHCP, then you may want to make a static reservation on the **Home** -> **DHCP** page, so that the IP address of the DMZ machine does not change.

# Performance

## Wireless Performance

These are the Wireless Performance features for the AP (Access Point) Portion.

**Transmit Power :**  

**Beacon Interval :**  (20..1000)

**RTS Threshold :**  (1..65535)

**Fragmentation :**  (256..65535)

**DTIM Interval :**  (1..255)



### Advanced > Performance

- Transmit Power:** Normally the wireless transmitter operates at 100% power. In some circumstances, however, there might be a need to isolate specific frequencies to a smaller area. By reducing the power of the radio, you can prevent transmissions from reaching beyond your corporate/home office or designated wireless area.
- Beacon Interval:** Beacons are packets sent by a wireless router to synchronize wireless devices. Specify a Beacon Interval value between 20 and 1000 milliseconds. The default value is 100 milliseconds.
- RTS Threshold:** This setting should remain at its default value of 2346. If you encounter inconsistent data flow, only minor modifications to the value range between 1 and 2346 are recommended.
- Fragmentation:** This setting should remain at its default value of 2346. Setting the Fragmentation value too low may result in poor performance.
- DTIM Interval:** A DTIM is a countdown for informing clients of the next window for listening to broadcast and multicast messages. When the wireless router has buffered broadcast or multicast messages for associated clients, it sends the next DTIM with a DTIM Interval value. Wireless clients detect the beacons and awaken to receive the broadcast and multicast messages. The default value is 1. Valid settings are between 1 and 255.

# Schedule

## Schedules

The Schedule configuration option is used to manage schedule rules for various firewall and parental control features.

### Add Schedule Rule

**Name :**

**Day(s) :**  All Week  Select Day(s)

Sun  Mon  Tue  Wed  Thu  Fri  Sat

**All Day - 24 hrs :**

**Start Time :**  :  AM  (hour:minute, 12 hour time)

**End Time :**  :  AM  (hour:minute, 12 hour time)



### Schedule Rules List

Name	Day(s)	Time Frame
------	--------	------------

*Advanced > Schedule*

Schedules define the times with other rules are in force. For example, if you want to restrict web access to Mon-Fri from 3pm to 8pm, you could create a schedule selecting Mon, Tue, Wed, Thu, and Fri and enter a Start Time of 3pm and End Time of 8pm.

<b>Name:</b>	Give the schedule a name that is meaningful to you, such as "Weekday rule".
<b>Day(s):</b>	Place a checkmark in the boxes for the desired days, or select the All Week radio button to schedule all seven days of the week.
<b>All Day - 24 hrs:</b>	Select this option if you want this schedule in effect all day for the selected day(s).
<b>Start Time:</b>	If you don't use the All Day option, then you enter the time here. The start time is entered in two fields. The first box is for the hour and the second box is for the minute. Email events are triggered only by the start time.
<b>End Time:</b>	The end time is entered in the same format as the start time. The hour in the first box and the minutes in the second box. The end time is used for most other rules, but is not used for email events.

# Tools

The Tools tab provides the following options: Admin, Time, System, Firmware, DDNS, Misc, and Print Server.

## Admin

### Administrator Settings

Administrators can change their login password.

Administrator (The login name is 'admin')

New Password :

Confirm Password :

User (The login name is 'user')

New Password :

Confirm Password :

### Remote Management

Enabled  Disable

Port : 8080

Remote Admin Firewall Rule : Allow All

Details:

    
Apply Cancel Help

*Tools > Admin*

At this page, the DI-724U administrator can change the system password. There are two accounts that can access the Broadband Router's Web-Management interface. They are admin and user. Admin has read/write access while user has read-only access. User can only view the settings but cannot make any changes.

<b>Administrator:</b>	Enter a password for the user "admin", who will have full access to the Web-based management interface.
<b>User:</b>	Enter a password for the user "user", who will have read-only access to the Web-based management interface.
<b>Route Management:</b>	Enabling Remote Management allows you to manage the router from anywhere on the Internet. Disabling Remote Management allows you to manage the router only from computers on your LAN.

**Port:** The port that you will use to address the management interface from the Internet. For example, if you choose port 1080 here, then, to access the router from the Internet, you would use a URL of the form: **http://my.domain.com:1080/**.

**Remote Admin Firewall Rule:** Select a firewall rule that controls access as needed for this admin port. If you do not see the firewall rule you need in the list of firewall rules, go to the **Advanced -> Firewalls** page and create a new firewall rule.

## Time

### Time

Set the DI-724U system time

**Device Time:** Saturday, January 31, 2004 11:36:51 AM

Synchronize the router's clock with:

Automatic (Automatic time update using NTP server specified below)

**NTP Server:**  Interval

Manual (Enter your own settings)

**Time:** Year  Month  Day

Hour  Minute  Second

**Time Zone:**

**Daylight Saving:**  Enabled  Disabled

Month Week Month Week  
 Start   End



### Tools > Time

The Time Configuration option allows you to configure, update, and maintain the correct time on the router's internal system clock. From this section you can set the time zone that you are in and set the Time Server. Daylight saving can also be configured to automatically adjust the time when needed. Maintaining accurate time is important if you have created schedule-based rules.

**Device Time:** The time currently maintained by the router.



**Automatic:**

Select this option if you want the router's clock synchronized to a Network Time Server over the Internet. If you are using schedules or logs, this is the best way to ensure that the schedules and logs are kept accurate.

**NTP Server:**

Select a Network Time Server for synchronization. You can type in the address of a time server. If your ISP offers a Network Time Server, that is the best choice. If there is no nearby Network Time Server, enter a public time server such as pool.ntp.org.

**Manual:**

If you do not have the NTP Server option in effect, you can either manually set the time for your router here, or you can click the **Computer Clock** button to copy the time from the computer you are using. (Make sure that computer's time is set correctly.)

**Time Zone:**

Select your time zone from the pull-down menu.

**Daylight Saving:**

Enable this option if daylight saving time is observed in your location. The router will automatically update the hour on the start and end dates specified below.

# System

## System Settings

Save Settings To Local Hard Drive

Save

Load Settings From Local Hard Drive

Browse...

Load

Cancel

Restore to Factory Default Settings

Restore

## Save Configuration To Wireless Network Setup Wizard

This will save the current wireless configuration from the router to your computer through Microsoft's Windows Connect Now technology and allow future propagation of the setting through Microsoft's Wireless Network Setup Wizard.

**Note:** refer to [Help](#) -> **Tools** for possible limitations regarding this feature.

Save to Windows Connect Now



### Tools > System

The current system settings can be saved as a file onto the local hard drive. The saved file or any other saved setting file can be loaded back on the Broadband Router. To reload a system settings file, click on **Browse** to browse the local hard drive and locate the system file to be used. You may also reset the Broadband Router back to factory settings by clicking on **Restore**.

#### Save Settings to Local Hard Drive:

Use this option to save the current router configuration settings to a file on the hard disk of the computer you are using. First, click the **Save** button. You will then see a file dialog, where you can select a location and file name for the settings.

#### Load Settings from Local Hard Drive:

Use this option to load previously saved router configuration settings. First, use the **Browse** control to find a previously save file of configuration settings. Then, click the **Load** button to transfer those settings to the router.

#### Restore to Factory Default Settings:

This option will restore all configuration settings back to the settings that were in effect at the time the router was shipped from the factory. Any settings that have not been saved will be lost, including any rules that you have created. If you want to save the current router configuration settings, use the Save button above.

**Save Configuration  
To Wireless  
Network Setup  
Wizard:**

If your PC's operating system is Windows XP Service Pack 2 (SP2) or later and you are using Windows Internet Explorer (IE) as your browser (or any browser that supports ActiveX controls), you can use this option to save key parts of the router's current wireless security settings to your PC with Windows Connect Now (WCN) technology. The settings will then be available to propagate to other wireless devices.

## Firmware

### Firmware Upgrade

There may be new firmware for your DI-724U to improve functionality and performance.

[Click here to check for an upgrade on our support site.](#)

**Note:** Some firmware upgrades reset the router's configuration options to the factory defaults. Before performing an upgrade, be sure to save the current configuration from the [Tools -> System](#) screen.

To upgrade the firmware, your PC must have a wired connection to the router. Enter the name of the firmware upgrade file, then click on the Apply button.

**Current Firmware Version :** 1.0

**Current Firmware Date :** 06 Jul 2005

**Upload :**



*Tools > Firmware*

You can upgrade the firmware of the Router here. Make sure the firmware you want to use is on the local hard drive of the computer. Click on **Browse** to browse the local hard drive and locate the firmware to be used for the update. Please check the D-Link support site for firmware updates at <http://support.dlink.com>. You can download firmware upgrades to your hard drive from the D-Link support site.

**Firmware  
Upgrade:**

Click on the link in this screen to find out if there is an updated firmware; if so, download the new firmware to your hard drive.

**Browse:**

After you have downloaded the new firmware, click **Browse** in this window to locate the firmware update on your hard drive. Click **Apply** to complete the firmware upgrade.

# DDNS

## Dynamic DNS

Enabled  Disabled

Server Address :

Host Name :

Username or Key :

Password or Key :

Verify Password or Key :



*Tools > DDNS*

**DDNS:** The Dynamic DNS feature allows you to host a server (Web, FTP, Game Server, etc.) using a domain provided by a dynamic DNS service provider with your dynamically assigned IP address.

**Enabled/Disabled:** Enable this option only if you have your own domain name registered with a dynamic DNS service provider.

**Server Address:** Select a dynamic DNS service provider from the pull-down list.

**Host Name:** Enter your host name.

**User Name:** Enter the username or key provided by your service provider. If the Dynamic DNS provider supplies only a key, enter that key in all three fields.

**Password:** Enter the password or key provided by your service provider. If the Dynamic DNS provider supplies only a key, enter that key in all three fields.

**Password:** Re-type the password or key provided by your service provider.

# Misc.

### Restart Device

Reboots the DI-724U

**Reboot**

### Block WAN Ping

When you "Block WAN Ping", you are causing the public WAN IP address on the DI-724U to not respond to ping commands. Pinging public WAN IP addresses is a common method used by hackers to test whether your WAN IP address is valid.

**Discard PING from WAN Side :**  Enabled  Disabled

**Firewall Rule :**

**Details:**

### UPNP Settings

Enabled  Disabled

### Gaming Mode

Enabled  Disabled

### VPN Passthrough

Allows VPN connections to work through the DI-724U.

**PPTP :**  Enabled  Disabled

**L2TP :**  Enabled  Disabled

**IPSec :**  Enabled  Disabled

### WAN select to 10/100 Mbps

100Mbps  10Mbps  10/100Mbps Auto

### Log Email Settings

**From Email Address :**

**To Email Address :**

**SMTP Server Address :**

**Enable Authentication :**

**Account Name :**

**Password :**

**Verify Password :**

### Email Log

**On Log Full :**

**On Schedule :**

**Schedule :**

    
**Apply Cancel Help**

*Tools > Misc.*



## Print Server

Your DI-724U router includes an integrated print server that allows a printer to be shared between multiple computers on your network. From this page you can select which printing protocols to enable.

To use the shared printer from this computer, launch the Printer Wizard from the [Home -> Wizard](#) page.

### Raw TCP Port Printing

The raw TCP port printing protocol uses a fixed IP address and TCP port to communicate with your printer. The printer's IP address and TCP port number are shown on the [Status -> Print Server](#) page.

**Raw Port Printing :**  Enabled  Disabled

### LPD/LPR Printing

The LPD/LPR printing protocol uses a fixed IP address and queue name to communicate with your printer. The printer's IP address and queue name are shown on the [Status -> Print Server](#) page.

**LPD/LPR Printing :**  Enabled  Disabled



*Tools >Print Server*

The router can support both “TCP Raw” and “LPD/LPR” printing protocols. Enable one or both as required by the devices on the LAN.

#### **Raw Port Printing:**

Causes the router to support TCP raw (also known as Port 9100). Printers are identified by port numbers (9100 being the customary starting port number). This option must be enabled for the Print Wizard to function.

#### **LPD/LPR Printing:**

Causes the router to support the LPD/LPR protocol. Printers are identified by a symbolic queue name. This option is disabled by default; enable it if required by the devices on the LAN. This method of printing is generally preferred for Unix or Macintosh (starting with Mac OS 8.1).

# Status

The Advanced tab provides the following options: Device Information, Log, Statistics, Wireless, and Print Server.

## Device Info

### Device Information

**Firmware Version :** 1.0, 06 Jul 2005

### LAN

**MAC Address :** 00:11:95:D1:39:CB

**IP Address :** 192.168.0.1

**Subnet Mask :** 255.255.255.0

**DHCP Server :** Enabled

### WAN

**MAC Address :** 00:11:95:D1:39:CC

**Connection :** DHCP Client Connecting (please wait...)

**Connection Up Time :** N/A

DHCP Renew

DHCP Release

**IP Address :** 0.0.0.0

**Subnet Mask :** 0.0.0.0

**Default Gateway :** 0.0.0.0

**Primary DNS Server :** 0.0.0.0

**Secondary DNS Server :** 0.0.0.0

### Wireless LAN

**Wireless Radio :** On

**MAC Address :** 00:11:95:D1:39:CB

**Network Name (SSID) :** Stay Away

**Channel :** 1

**Turbo Mode :** Disabled

**Security Type :** WPA-PSK



*Status > Device Information*

This page displays the current information for the DI-724U. It will display the LAN, WAN and Wireless LAN. If your WAN connection is set up for a **Dynamic IP address** then a **Release** button and a **Renew** button will be displayed. Use *Release* to disconnect from your ISP and use *Renew* to connect to your ISP. If your WAN connection is set up for **PPPoE**, a **Connect** button and a **Disconnect** button will be displayed. Use *Disconnect* to drop the PPPoE connection and use *Connect* to establish the PPPoE connection.

This window will show the DI-724U's working status:

**LAN:**

**MAC Address:** The Ethernet ID of the wireless client.

**IP Address:** The LAN-side IP address of the client.

**Subnet Mask:** LAN/Private Subnet Mask of the DI-724U

**DHCP Server:** Displays the DHCP server **Enabled** or **Disabled**

**WAN:**

**MAC Address:** Displays the MAC address

**Connection:** WAN Connection Status

**Subnet Mask:** WAN/Public Subnet Mask

**Default Gateway:** WAN/Public Gateway IP Address

**Wireless LAN:**

**Wireless Radio:** Displays Wireless status as being off or on.

**Network Name (SSID):** Displays the current SSID

**Channel:** Displays the current channel

# Log

## View Log

View Log displays the activities occurring on the DI-724U.

## Log Settings

**What to View :**  Firewall & Security       System       Router Status

**View Levels :**  Critical       Warning       Informational



### Status > Log

The Broadband Router keeps a running log of events and activities occurring on the Router. If the device is rebooted, the logs are automatically cleared. You may save the log files under Log Settings.

- |                      |  |
|----------------------|--|
| <b>What to Veiw:</b> | Select the kinds of events that you want to view. <ul style="list-style-type: none"> <li>• Firewall and Security</li> <li>• System</li> <li>• Router Status</li> </ul> |
| <b>View Levels:</b>  | Select the level of events that you want to view. <ul style="list-style-type: none"> <li>• Critical</li> <li>• Warning</li> <li>• Informational</li> </ul>             |

The Broadband Router keeps a running log of events and activities occurring on the Router. If the device is rebooted, the logs are automatically cleared. You may save the log files under Log Settings.

All of your Internet and Network connection details are displayed on the Device Information page. This is primarily a recap of all the WAN, LAN, Wireless, and DHCP options that are set from the Home tab, The firmware version is also displayed here.

## Stats

### Traffic Statistics

Traffic Statistics display Receive and Transmit packets passing through the DI-724U.



Interface	Receive	Transmit
<b>WAN</b>	18071	126
<b>LAN</b>	5385	9101
<b>WIRELESS 11g</b>	23109	10986

### *Status > Statistics*

The screen above displays the Traffic Statistics. Here you can view the amount of packets that pass through the DI-724U on both the WAN and the LAN ports. The traffic counter will reset if the device is rebooted.

**Refresh:** | The number of packets received by the router.

**Transmit:** | The number of packets sent from the router.

## Wireless

### Connected Wireless Client List

The Wireless Client table below displays Wireless clients connected to the AP (Access Point).



Number Of Wireless Clients : 0

MAC Address	IP Address	Mode	Rate	Signal(%)
-------------	------------	------	------	-----------

*Status > Wireless*

The wireless section allows you to view information about the wireless clients that are connected to your wireless router.

<b>MAC Address:</b>	The Ethernet ID (MAC address) of the wireless client.
<b>IP Address:</b>	The LAN-side IP address of the client.
<b>Mode:</b>	The transmission standard being used by the client. Values are 11b, or 11g for 802.11b, or 802.11g respectively.
<b>Rate:</b>	The actual transmission rate of the client in megabits per second.
<b>Signal:</b>	This is a relative measure of signal quality. The value is expressed as a percentage of theoretical best quality. Signal quality can be reduced by distance, by interference from other radio-frequency sources (such as cordless telephones or neighboring wireless networks), and by obstacles between the router and the wireless device.

## Print Server

Your DI-724U router includes an integrated print server that allows a printer to be shared between multiple computers on your network. This page displays status information about the print server and any attached printer.

To use the shared printer from this computer, launch the Printer Wizard from the [Home -> Wizard](#) page.

### Printer Status

The following printer is attached to your router:

**No printer detected**

### Raw TCP Port Printing

Use this information to configure your computer for raw TCP port printing:

**No printer detected**

### LPD/LPR Printing

Use this information to configure your computer for LPD/LPR printing:

**Disabled**

This printing protocol is currently disabled. You can enable it on the [Tools -> Print Server](#) page.



### *Status > Print Server*

**Printer Status:**

Shows the status of the printer attached to the router.

**Raw TCP Port Printing:**

Shows the "IP Address" and "TCP Port" values that you need to enter when you configure your computer to use the printer in TCP Raw mode.

**LPD/LPR Printing:**

Shows the "IP Address" and "Queue Name" values that you need to enter when you configure your computer to use the printer in LPR/LPD mode.

# Troubleshooting

This Chapter provides solutions to problems that can occur during the installation and operation of the DI-724U Wireless G QoS Router. We cover various aspects of the network setup, including the network adapters. Please read the following if you are having problems.

Note: It is recommended that you use an Ethernet connection to **configure the DI-724U Wireless G QoS Router**.

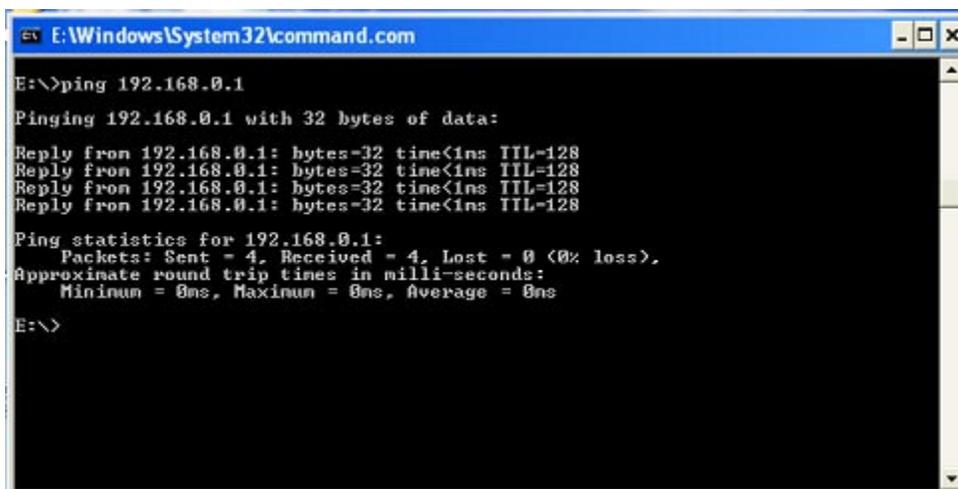
## 1. The computer used to configure the DI-724U cannot access the Configuration menu.

- Check that the **Ethernet LED** on the DI-724U is **ON**. If the **LED** is not **ON**, check that the cable for the Ethernet connection is securely inserted.
- Check that the Ethernet Adapter is working properly. Please see item 3 (**Check that the drivers for the network adapters are installed properly**) in this **Troubleshooting** section to check that the drivers are loaded properly.
- Check that the **IP Address** is in the same range and subnet as the DI-724U. Please see **Checking the IP Address in Windows XP** in the **Networking Basics** section of this manual.

Note: The IP Address of the DI-724U is 192.168.0.1. All the computers on the network must have a unique IP Address in the same range, e.g., 192.168.0.x. Any computers that have identical IP Addresses will not be visible on the network. They must all have the same subnet mask, e.g., 255.255.255.0.

- Do a **Ping test** to make sure that the DI-724U is responding. Go to **Start>Run>Type Command>Type ping 192.168.0.1**. A successful ping will show four replies.

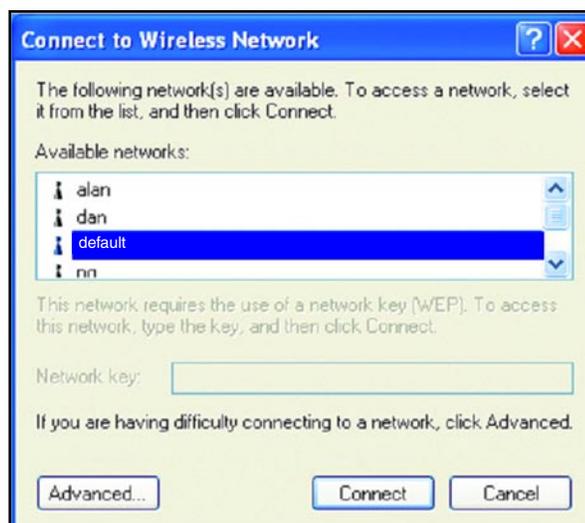
Note: If you have changed the default IP Address, make sure to ping the correct IP Address assigned to the DI-724U.



```
E:\Windows\System32\command.com
E:\>ping 192.168.0.1
Pinging 192.168.0.1 with 32 bytes of data:
Reply from 192.168.0.1: bytes=32 time<ins TTL=128
Ping statistics for 192.168.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
E:\>
```

## 2. The wireless client cannot access the Internet in the Infrastructure mode.

Make sure the wireless client is associated and joined with the correct Access Point. To check this connection: **Right-click** on the **Local Area Connection icon** in the taskbar select **View Available Wireless Networks**. The **Connect to Wireless Network** screen will appear. Please make sure you have selected the correct available network, as shown in the illustrations below.



- Check that the **IP Address** assigned to the wireless adapter is within the same **IP Address range** as the access point and gateway. *(Since the DI-724U has an IP Address of 192.168.0.1, wireless adapters must have an IP Address in the same range, e.g., 192.168.0.x. Each device must have a unique IP Address; no two devices may have the same IP Address. The subnet mask must be the same for all the computers on the network.)* To check the **IP Address** assigned to the wireless adapter, **double-click** on the **Local Area Connection icon** in the taskbar select the **Support tab** and the **IP Address** will be displayed. *(Please refer to **Checking the IP Address in the Networking Basics** section of this manual.)*
- If it is necessary to assign a **Static IP Address** to the wireless adapter, please refer to the appropriate section in **Networking Basics**. If you are entering a **DNS Server address** you must also enter the **Default Gateway Address**. *(Remember that if you have a DHCP-capable router, you will not need to assign a Static IP Address. See **Networking Basics: Assigning a Static IP Address**.)*

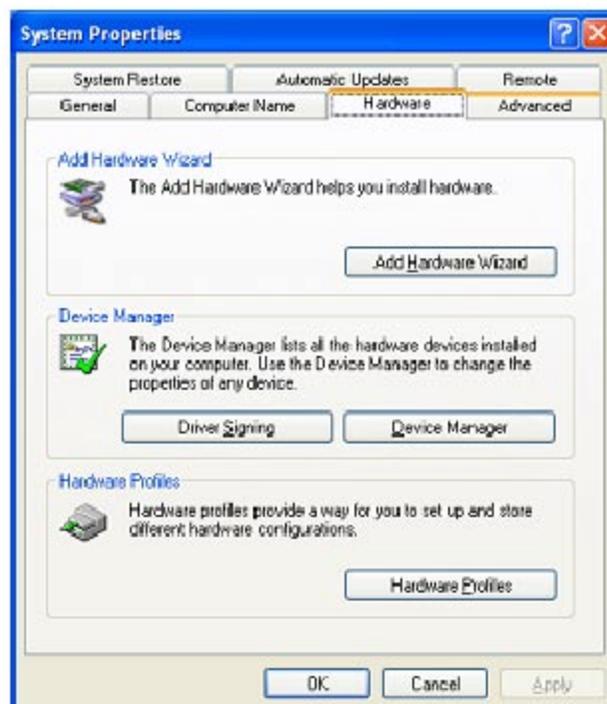
### 3. Check that the drivers for the network adapters are installed properly.

You may be using different network adapters than those illustrated here, but this procedure will remain the same, regardless of the type of network adapters you are using.

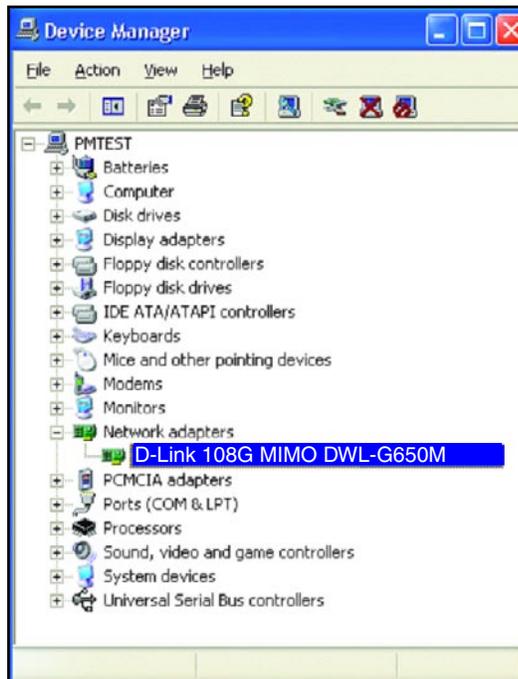
- Go to **Start > My Computer > Properties**.



- Select the **Hardware Tab**.
- Click **Device Manager**.



- Double-click on **Network Adapters**.
- Right-click on **D-Link DWL-G650M Wireless 108G MIMO Notebook Adapter**. (In this example we use the DWL-G650M; you may be using other network adapters, but the procedure will remain the same.)
- Select **Properties** to check that the drivers are installed properly.



- Look under **Device Status** to check that the device is working properly.
- Click **OK**.



#### 4. What variables may cause my wireless products to lose reception?

D-Link products let you access your network from virtually anywhere you want. However, the positioning of the products within your environment will affect the wireless range. Please refer to **Installation Considerations** in the **Wireless Basics** section of this manual for further information about the most advantageous placement of your D-Link wireless products.

#### 5. Why does my wireless connection keep dropping?

- Antenna Orientation- Try different antenna orientations for the DI-724U. Try to keep the antenna at least 6 inches away from the wall or other objects.
- If you are using 2.4GHz cordless phones, X-10 equipment or other home security systems, ceiling fans, and lights, your wireless connection will degrade dramatically or drop altogether. Try changing the Channel on your Router, Access Point and Wireless adapter to a different Channel to avoid interference.
- Keep your product away (at least 3-6 feet) from electrical devices that generate RF noise, like microwaves, Monitors, electric motors, etc.

#### 6. Why can't I get a wireless connection?

If you have enabled Encryption on the DI-724U, you must also enable encryption on all wireless clients in order to establish a wireless connection.

- For 802.11b, the Encryption settings are: 64 or 128 bit. Make sure that the encryption bit level is the same on the Router and the Wireless Client.
- Make sure that the SSID on the Router and the Wireless Client are exactly the same. If they are not, wireless connection will not be established.
- Move the DI-724U and the wireless client into the same room and then test the wireless connection.
- Disable all security settings. (WEP, MAC Address Control)
- Turn off your DI-724U and the client. Turn the DI-724U back on again, and then turn on the client.
- Make sure that all devices are set to **Infrastructure** mode.
- Check that the LED indicators are indicating normal activity. If not, check that the AC power and Ethernet cables are firmly connected.
- Check that the IP Address, subnet mask, gateway and DNS settings are correctly entered for the network.
- If you are using 2.4GHz cordless phones, X-10 equipment or other home security systems, ceiling fans, and lights, your wireless connection will degrade dramatically or drop altogether. Try changing the Channel on your DI-724U, and on all the devices in your network to avoid interference.
- Keep your product away (at least 3-6 feet) from electrical devices that generate RF noise, like microwaves, Monitors, electric motors, etc.

## 7. I forgot my encryption key.

- Reset the DI-724U to its factory default settings and restore the other devices on your network to their default settings. You may do this by pressing the Reset button on the back of the unit. You will lose the current configuration settings.

## 8. Resetting the DI-724U to Factory Default Settings

After you have tried other methods for troubleshooting your network, you may choose to **Reset** the DI-724U to the factory default settings. Remember that D-Link Wireless 108G products network together, out of the box, at the factory default settings.

To hard-reset the DI-724U to Factory Default Settings, please do the following:

- Locate the **Reset** button on the back of the DI-724U.
- Use a paper clip to press the **Reset** button.
- Hold for about 10 seconds and then release.
- After the DI-724U reboots (this may take a few minutes) it will be reset to the factory **Default** settings.

# Technical Specifications

## Standards

- IEEE 802.11g
- IEEE 802.11b
- IEEE 802.3
- IEEE 802.3u

## VPN Pass Through/ Multi-Sessions

- PPTP
- L2TP
- IPSec

## Device Management

- Web-Based- Internet Explorer v6 or later; Netscape Navigator v7 or later; or other Java-enabled browsers
- DHCP Server and Client

## Advanced Firewall Features

- NAT with VPN Passthrough (Network Address Translation)
- MAC Filtering
- URL Filtering
- Scheduling

## Wireless Operating Range

- Indoors – up to 328 feet (100 meters)
- Outdoors – up to 1312 feet (400 meters)

## Operating Temperature

- 32°F to 131°F (0°C to 55°C)

## Humidity:

- 95% maximum (non-condensing)

## Safety and Emissions:

- FCC

## Wireless Frequency Range:

- 2.4GHz to 2.462GHz

## LEDs:

- Power

- Status
- LAN (10/100)
- WLAN (Wireless Connection)
- WAN

**Physical Dimensions:**

- L = 7.56 inches (192mm)
- W = 4.65 inches (118mm)
- H = 1.22 inches (31mm)

**Wireless Transmit Power:**

- 15dBm  $\pm$  2dB

**Security:**

- WPA- WiFi Protected Access (64-,128-WEP with TKIP, MIC, IV Expansion, Shared Key Authentication)

**External Antenna Type:**

- Singal detachable antenna

**Modulation Technology:**

- Orthogonal Frequency Division Multiplexing (OFDM)

**Power Input:**

- Ext. Power Supply DC 5V, 3A

**Weight:**

- 10.8 oz. (0.3kg)

**Warranty:**

- 1 year

**Wireless Data Rates\* with Automatic Fallback:**

- 108 Mbps
- 54 Mbps
- 48 Mbps
- 36 Mbps
- 24 Mbps
- 18 Mbps
- 12 Mbps
- 11 Mbps
- 9 Mbps

- 
- 6 Mbps
  - 5.5 Mbps
  - 2 Mbps
  - 1 Mbps

**Receiver Sensitivity:**

- 108Mbps
- 54Mbps OFDM, 10% PER, -71dBm
- 48Mbps OFDM, 10% PER, -71dBm
- 36Mbps OFDM, 10% PER, -78dBm
- 24Mbps OFDM, 10% PER, -82dBm
- 18Mbps OFDM, 10% PER, -85dBm
- 12Mbps OFDM, 10% PER, -87dBm
- 11Mbps CCK, 8% PER, -85dBm
- 9Mbps OFDM, 10% PER, -90dBm
- 6Mbps OFDM, 10% PER, -91dBm
- 5.5Mbps CCK, 8% PER, -88dBm
- 2Mbps QPSK, 8% PER, -89dBm
- 1Mbps BPSK, 8% PER, -92dBm

\* Maximum wireless signal rate derived from IEEE Standard 802.11g specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead lower actual data throughput rate. D-Link 108G performance results are based on testing with other D-Link 108G enabled devices utilizing Packet Bursting, FastFrames, Turbo Mode and Compression techniques. Data already compressed may not benefit from the D-Link 108G compression techniques.

# Frequently Asked Questions

## 1 Why can't I access the Web-based configuration?

When entering the IP Address of the DI-724U (192.168.0.1), you are not connecting to the Internet or have to be connected to the Internet. The device has the utility built-in to a ROM chip in the device itself. Your computer must be on the same IP subnet to connect to the web-based utility.

To resolve difficulties accessing a Web utility, please follow the steps below.

**Step 1:** Verify physical connectivity by checking for solid link lights on the device. If you do not get a solid link light, try using a different cable or connect to a different port on the device if possible. If the computer is turned off, the link light may not be on.

What type of cable should I be using?

The following connections require a Crossover Cable:

- Computer to Computer
- Computer to Uplink Port
- Computer to Access Point
- Computer to Print Server
- Computer/XBOX/PS2 to DWL-810
- Computer/XBOX/PS2 to DWL-900AP+
- Uplink Port to Uplink Port (hub/switch)
- Normal Port to Normal Port (hub/switch)

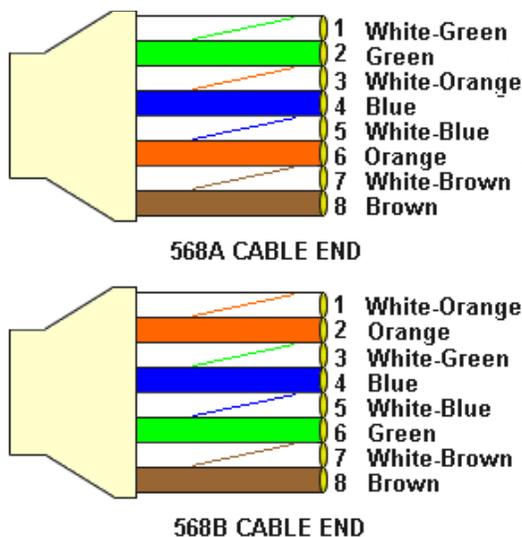
The following connections require a Straight-through Cable:

- Computer to Residential Gateway/Router
- Computer to Normal Port (hub/switch)
- Access Point to Normal Port (hub/switch)
- Print Server to Normal Port (hub/switch)
- Uplink Port to Normal Port (hub/switch)

Rule of Thumb:

"If there is a link light, the cable is right."

What's the difference between a crossover cable and a straight-through cable?  
 The wiring in crossover and straight-through cables are different. The two types of cable have different purposes for different LAN configurations. EIA/TIA 568A/568B define the wiring standards and allow for two different wiring color codes as illustrated in the following diagram.



\*The wires with colored backgrounds may have white stripes and may be denoted that way in diagrams found elsewhere.

#### **How to tell straight-through cable from a crossover cable:**

The main way to tell the difference between the two cable types is to compare the wiring order on the ends of the cable. If the wiring is the same on both sides, it is straight-through cable. If one side has opposite wiring, it is a crossover cable.

All you need to remember to properly configure the cables is the pinout order of the two cable ends and the following rules:

***A straight-through cable has identical ends. A crossover cable has different ends.***

It makes no functional difference which standard you follow for straight-through cable ends, as long as both ends are the same. You can start a crossover cable with either standard as long as the other end is the other standard. It makes no functional difference which end is which. The order in which you pin the cable is important. Using a pattern other than what is specified in the above diagram could cause connection problems.

**When to use a crossover cable and when to use a straight-through cable:**  
 Computer to Computer – Crossover

Computer to an normal port on a Hub/Switch – Straight-through

Computer to an uplink port on a Hub/Switch - Crossover

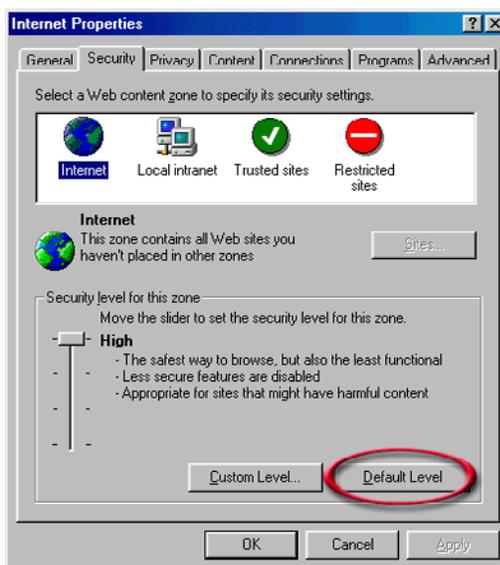
Hub/Switch uplink port to another Hub/Switch uplink port – Crossover

Hub/Switch uplink port to another Hub/Switch normal port - Straight-through

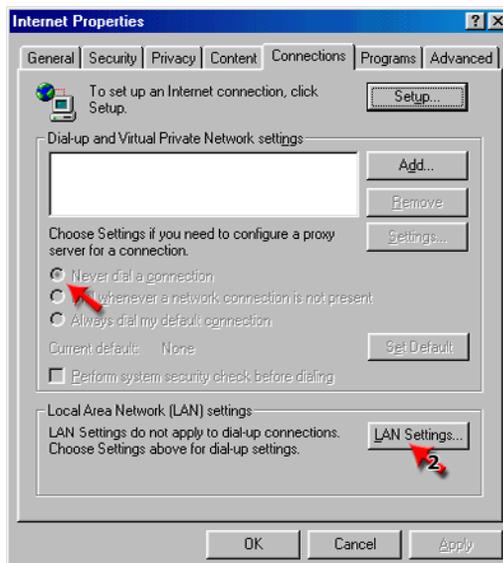
**Step 2:** Disable any Internet security software running on the computer. Software firewalls like Zone Alarm, Black Ice, Sygate, Norton Personal Firewall, etc. might block access to the configuration pages. Check the help files included with your firewall software for more information on disabling or configuring it.

**Step 3:** Configure your Internet settings.

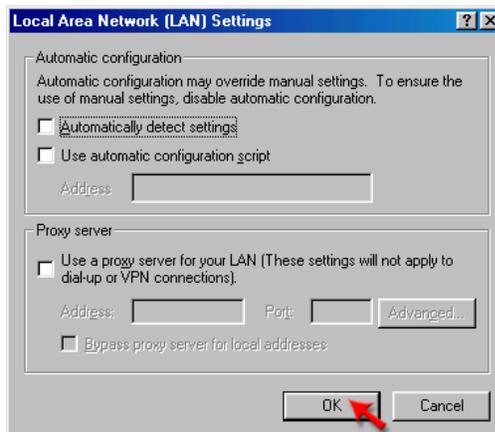
- Go to **Start>Settings>Control Panel**. Double click the **Internet Options** icon. From the **Security** tab, click the button to restore the settings to their defaults.



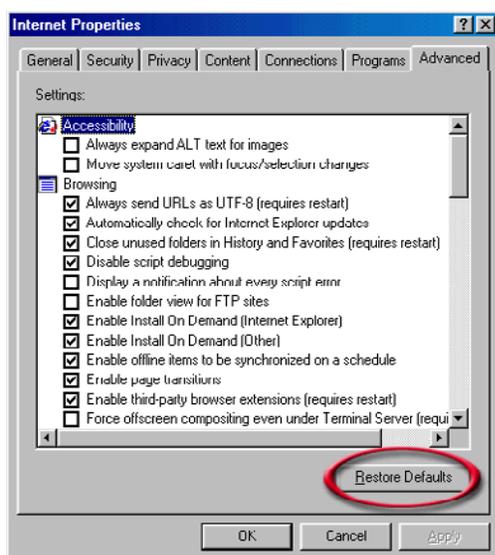
- Click to the **Connection** tab and set the dial-up option to **Never Dial a Connection**. Click the **LAN Settings** button.



- Nothing should be checked. Click **OK**.



- Go to the **Advanced** tab and click the button to restore these settings to their defaults.
- Click **OK**. Go to the desktop and close any open windows.



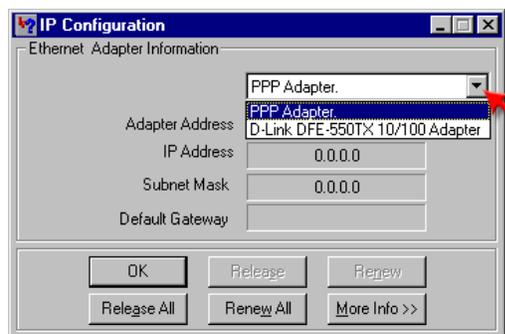
**Step 4:** Check your IP Address. Your computer must have an IP Address in the same range of the device you are attempting to configure. Most D-Link devices use the 192.168.0.X range.

How can I find my IP Address in Windows 95, 98, or ME?

- Click on **Start**, then click on **Run**.
- The Run Dialogue Box will appear. Type **windowsipcfg** in the window as shown then click **OK**.



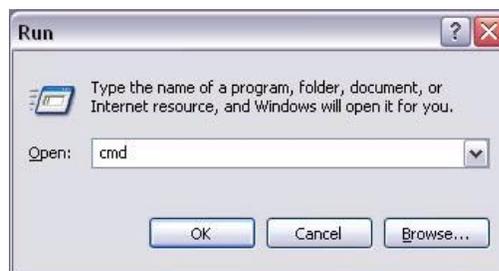
- The **IP Configuration** window will appear, displaying your **Ethernet Adapter Information**.
- Select your adapter from the drop down menu.
- If you do not see your adapter in the drop down menu, your adapter is not properly installed.



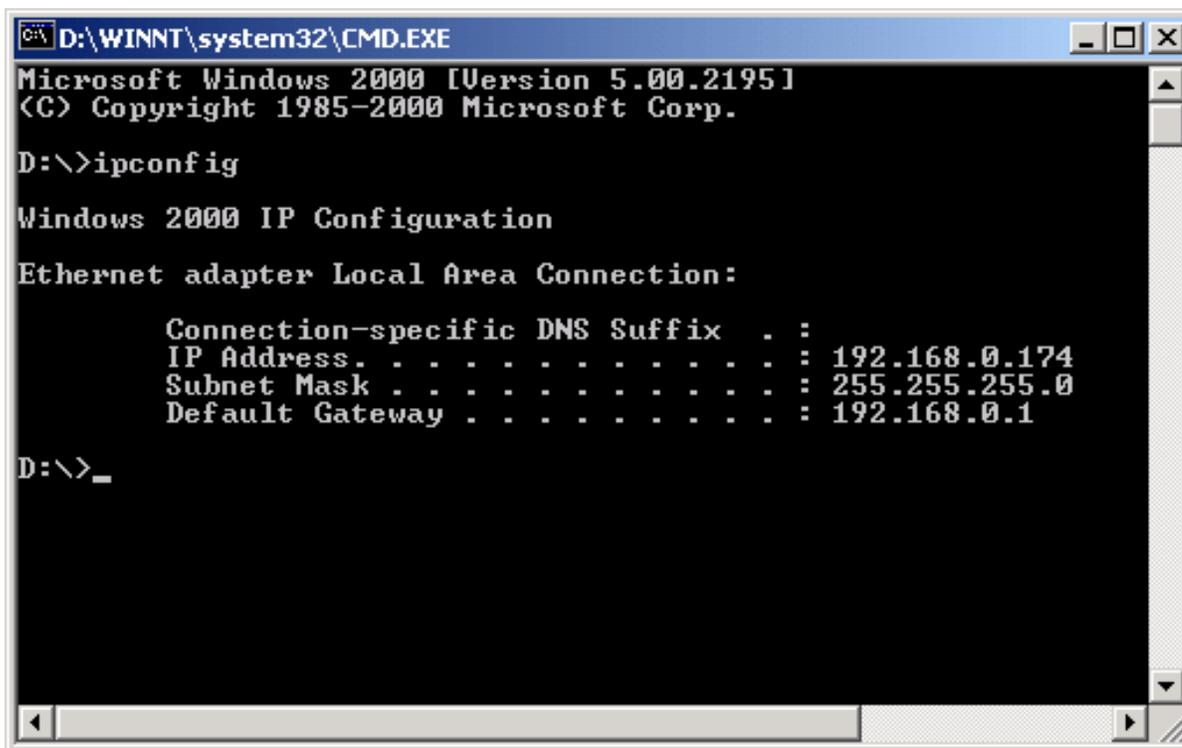
- After selecting your adapter, it will display your IP Address, subnet mask, and default gateway.
- Click **OK** to close the IP Configuration window.

#### How can I find my IP Address in Windows 2000/XP?

- Click on **Start** and select **Run**.
- Type **cmd** then click **OK**.



- From the Command Prompt, enter **ipconfig**. It will return your IP Address, subnet mask, and default gateway.



```
D:\WINNT\system32\CMD.EXE
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-2000 Microsoft Corp.

D:\>ipconfig

Windows 2000 IP Configuration

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . :
    IP Address. . . . .               : 192.168.0.174
    Subnet Mask . . . . .             : 255.255.255.0
    Default Gateway . . . . .         : 192.168.0.1

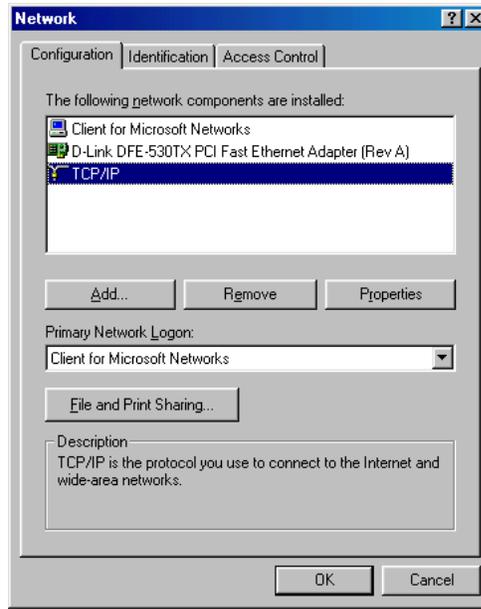
D:\>_
```

- Type **exit** to close the command prompt.

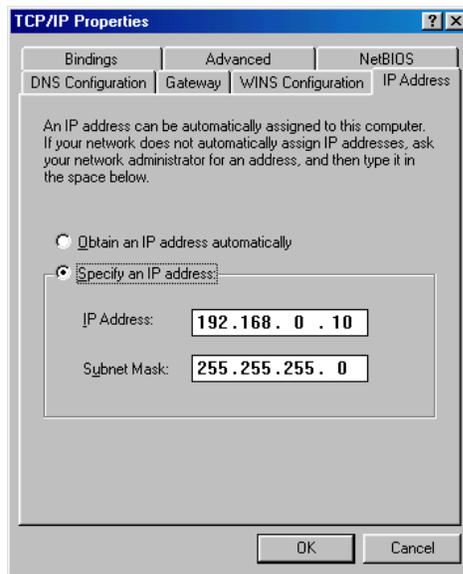
Make sure you take note of your computer's Default Gateway IP Address. The Default Gateway is the IP Address of the D-Link router. By default, it should be 192.168.0.1

#### How can I assign a Static IP Address in Windows 98/Me?

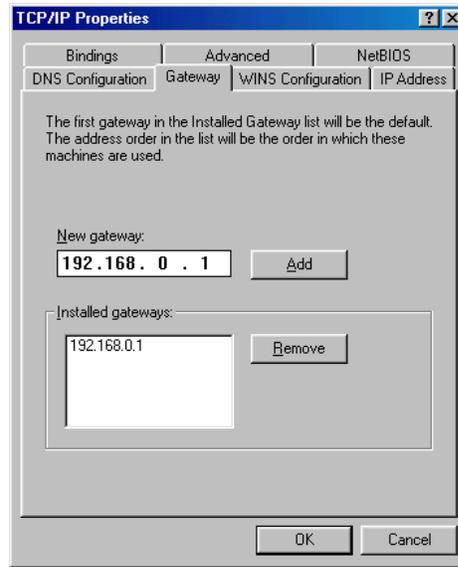
- From the desktop, right-click on the **Network Neighborhood** icon (Win ME - My Network Places) and select **Properties**.
- Highlight **TCP/IP** and click the **Properties** button. If you have more than 1 adapter, then there will be a TCP/IP "Binding" for each adapter. Highlight **TCP/IP > (your network adapter)** and then click **Properties**.



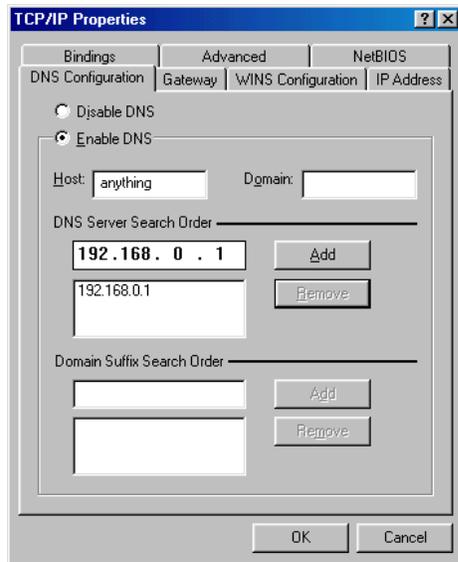
- Click **Specify an IP Address**.
- Enter in an IP Address that is on the same subnet as the LAN IP Address on your router. Example: If the router's LAN IP Address is 192.168.0.1, make your IP Address 192.168.0.X where X is between 2-99. Make sure that the number you choose is not in use on the network.



- Click on the **Gateway** tab.
- Enter the LAN IP Address of your router here (192.168.0.1).
- Click **Add** when finished.



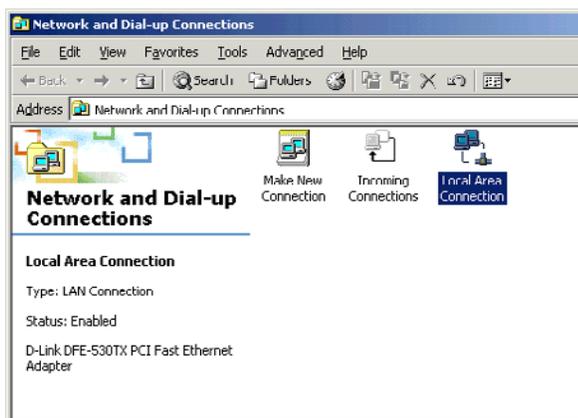
- Click on the **DNS Configuration** tab.
- Click **Enable DNS**. Type in a **Host** (can be any word). Under DNS server search order, enter the LAN IP Address of your router (192.168.0.1). Click **Add**.



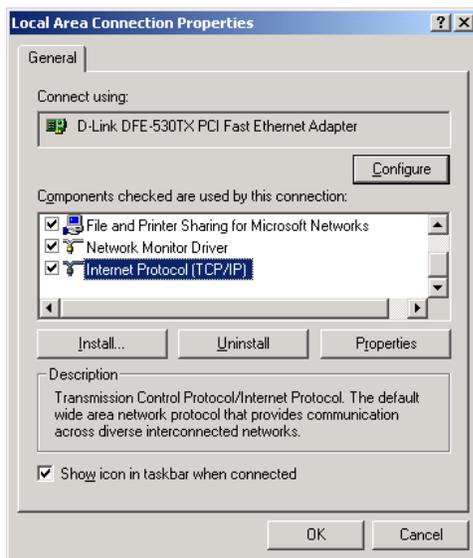
- Click **OK** twice.
- When prompted to reboot your computer, click **Yes**. After you reboot, the computer will now have a static, private IP Address.

## How can I assign a Static IP Address in Windows 2000?

- Right-click on **My Network Places** and select **Properties**.
- Right-click on the **Local Area Connection** which represents your network card and select **Properties**.

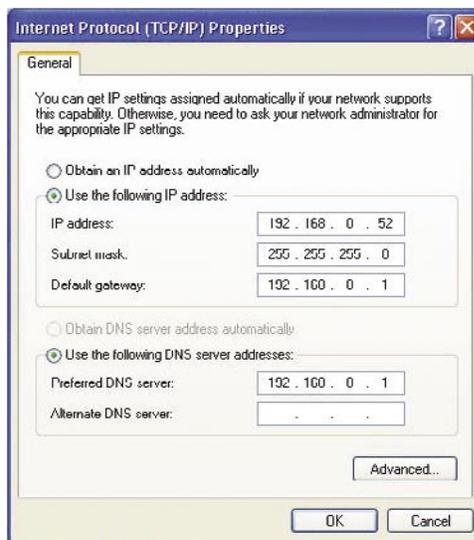


- Highlight **Internet Protocol (TCP/IP)** and click **Properties**.



- Click **Use the following IP Address** and enter an IP Address that is on the same subnet as the LAN IP Address on your router. Example: If the router's LAN IP Address is 192.168.0.1, make your IP Address 192.168.0.X where X = 2-99. Make sure that the number you choose is not in use on the network.
- Set the **Default Gateway** to be the same as the LAN IP Address of your router (192.168.0.1).
- Set the **Primary DNS** to be the same as the LAN IP address of your router (192.168.0.1).

- **The Secondary DNS** is not needed or enter a DNS server from your ISP.
- Click **OK** twice. You may be asked if you want to reboot your computer. Click **Yes**.



### How can I assign a Static IP Address in Windows XP?

- Click on **Start > Control Panel > Network and Internet Connections > Network connections**.
- See the second step for assigning a static IP address in Windows 2000 and continue from there.

**Step 5:** Access the Web management. Open your Web browser and enter the IP Address of your D-Link device in the address bar. This should open the login page for the Web management. Follow instructions to login and complete the configuration.

## 2 How can I setup my router to work with a Cable modem connection?

### Dynamic Cable connection

(IE AT&T-BI, Cox, Adelphia, Rogers, Roadrunner, Charter, and Comcast).

Note: Please configure the router with the computer that was last connected directly to the cable modem.

**Step 1:** Log into the web based configuration by typing in the IP Address of the router (default:192.168.0.1) in your web browser. The username is **admin** (all lowercase) and the password is **blank** (nothing).

**Step 2:** Click the **Home** tab and click the **WAN** button. Dynamic IP Address is the default value, however, if Dynamic IP Address is not selected as the WAN type, select Dynamic IP Address by clicking on the radio button. Click on **Apply** and then **Continue** to save the changes.

#### WAN Settings

Please select the appropriate option to connect to your ISP.

- Dynamic IP Address Choose this option to obtain an IP address automatically from your ISP. (For most Cable modem users)
- Static IP Address Choose this option to set static IP information provided to you by your ISP.
- PPPoE Choose this option if your ISP uses PPPoE. (For most DSL users)
- Others PPTP, L2TP and BigPond Cable
  - PPTP (for Europe use only)
  - L2TP (for specific ISPs use only)
  - BigPond Cable (for Australia use only)

#### Dynamic IP Address

Host Name:

MAC Address:

(optional)

Primary DNS Server:

Secondary DNS Server:  (optional)

MTU:  MTU default = 1500

Apply Cancel Help

**Step 3:** Power cycle the cable modem and router.

Turn the cable modem off (first) . Turn the router off Leave them off for 2 minutes.\*\* Turn the cable modem on (first). Wait until you get a solid cable light on the cable modem. Turn the router on. Wait 30 seconds.

\*\* If you have a Motorola (Surf Board) modem, leave off for at least 5 minutes.

**Step 4:** Follow step 1 again and log back into the web configuration. Click the **Status** tab and click the **Device Info** button. If you do not already have a public IP Address under the **WAN** heading, click on the **DHCP Renew** and **Continue** buttons.

## Static Cable Connection

**Step 1:** Log into the web based configuration by typing in the IP Address of the router (default:192.168.0.1) in your web browser. The username is **admin** (all lowercase) and the password is **blank** (nothing).

**Step 2:** Click the **Home** tab and click the **WAN** button. Select **Static IP Address** and enter your static settings obtained from the ISP in the fields provided. If you do not know your settings, you must contact your ISP.

### WAN Settings

Please select the appropriate option to connect to your ISP.

- Dynamic IP Address Choose this option to obtain an IP address automatically from your ISP. (For most Cable modem users)
- Static IP Address Choose this option to set static IP information provided to you by your ISP.
- PPPoE Choose this option if your ISP uses PPPoE. (For most DSL users)
- Others PPTP, L2TP and BigPond Cable
  - PPTP (for Europe use only)
  - L2TP (for specific ISPs use only)
  - BigPond Cable (for Australia use only)

### Static IP

IP Address :

Subnet Mask :

Default Gateway :

MAC Address :

(optional)

Primary DNS Server :

Secondary DNS Server :  (optional)

MTU :  MTU default = 1500



**Step 3:** Click on **Apply** and then click **Continue** to save the changes.

**Step 4:** Click the **Status** tab and click the **Device Info** button. Your IP Address information will be displayed under the **WAN** heading.

### **3 How can I setup my router to work with DSL or any PPPoE connection?**

Make sure you disable or uninstall any PPPoE software such as WinPoet or Enternet 300 from your computer or you will not be able to connect to the Internet.

**Step 1:** Upgrade Firmware if needed.

(Please visit the D-Link tech support website at: <http://support.dlink.com> for the latest firmware upgrade information.)

**Step 2:** Take a paperclip and perform a hard reset. With the unit on, use a paperclip and hold down the reset button on the back of the unit for 10 seconds. Release it and the router will recycle, the lights will blink, and then stabilize.

**Step 3:** After the router stabilizes, open your browser and enter 192.168.0.1 into the address window and hit the **Enter** key. When the password dialog box appears, enter the username **admin** and leave the password blank. Click **OK**.

If the password dialog box does not come up repeat **Step 2**.

Note: Do not run Wizard.

**Step 4:** Click on the **WAN** tab on left-hand side of the screen. Select **PPPoE**.

**Step 5:** Select **Dynamic PPPoE** (unless your ISP supplied you with a static IP Address).

**Step 6:** In the username field enter **ELN/username@earthlink.net** and your password, where username is your own username.

For SBC Global users, enter **username@sbcglobal.net**.

For Ameritech users, enter **username@ameritech.net**.

For BellSouth users, enter **username@bellsouth.net**.

For Mindspring users, enter **username@mindspring.com**.

For most other ISPs, enter **username**.

**Step 7:** **Maximum Idle Time** should be set to zero. Set **MTU** to 1492, unless specified by your ISP, and set **Autoreconnect** to **Enabled**.

Note: If you experience problems accessing certain websites and/or email issues, please set the MTU to a lower number such as 1472, 1452, etc. Contact your ISP for more information and the proper MTU setting for your connection.

**Step 8:** Click **Apply**. When prompted, click **Continue**. Once the screen refreshes, unplug the power to the D-Link router.



**Step 9:** Turn off your DSL modem for 2-3 minutes. Turn back on. Once the modem has established a link to your ISP, plug the power back into the D-Link router. Wait about 30 seconds and log back into the router.

**Step 10:** Click on the **Status** tab in the web configuration where you can view the device info. Under **WAN**, click **Connect**. Click **Continue** when prompted. You should now see that the device info will show an IP Address, verifying that the device has connected to a server and has been assigned an IP Address.

## **4 Can I use my D-Link Broadband Router to share my Internet connection provided by AOL DSL Plus?**

In most cases yes. AOL DSL+ may use PPPoE for authentication bypassing the client software. If this is the case, then our routers will work with this service. Please contact AOL if you are not sure.

### **To set up your router:**

**Step 1:** Log into the web-based configuration (192.168.0.1) and configure the WAN side to use PPPoE.

**Step 2:** Enter your screen name followed by @aol.com for the user name. Enter your AOL password in the password box.

**Step 3:** You will have to set the MTU to 1400. AOL DSL does not allow for anything higher than 1400.

**Step 4:** Apply settings.

**Step 5:** Recycle the power to the modem for 1 minute and then recycle power to the router. Allow 1 to 2 minutes to connect.

If you connect to the Internet with a different internet service provider and want to use the AOL software, you can do that without configuring the router's firewall settings. You need to configure the AOL software to connect using TCP/IP.

Go to <http://www.aol.com> for more specific configuration information of their software.

## **5 How do I open ports on my router?**

To allow traffic from the internet to enter your local network, you will need to open up ports or the router will block the request.

**Step 1:** Open your web browser and enter the IP Address of your D-Link router (192.168.0.1). Enter username (admin) and your password (blank by default).

**Step 2:** Click on **Advanced** on top and then click **Virtual Server** on the left side.

### Virtual Server

Virtual Server is used to allow Internet users access to LAN services.

Enabled  Disabled

Name :

Private IP :

Protocol Type : TCP ▾

Private Port :

Public Port :

Firewall Rule : Allow All ▾

Details: Everyone allowed

Schedule : Always ▾

Details: Always

    
Apply Cancel Help

**Step 3:** Check **Enabled** to activate entry.

**Step 4:** Enter a name for your virtual server entry.

**Step 5:** Next to **Private IP**, enter the IP Address of the computer on your local network that you want to allow the incoming service to.

**Step 6:** Choose **Protocol Type** - either TCP or UDP.

**Step 7:** Enter the port information next to **Private Port** and **Public Port**. The private and public ports are usually the same. The public port is the port seen from the WAN side, and the private port is the port being used by the application on the computer within your local network.

**Step 8:** Enter the **Schedule** information.

**Step 9:** Click **Apply** and then click **Continue**.

Note: Make sure DMZ host is disabled. If DMZ is enabled, it will disable all Virtual Server entries.

Because our routers use NAT (Network Address Translation), you can only open a specific port to one computer at a time. For example: If you have 2 web servers on your network, you cannot open port 80 to both computers. You will need to configure 1 of the web servers to use port 81. Now you can open port 80 to the first computer and then open port 81 to the other computer.

## 6 What is DMZ?

### **Demilitarized Zone:**

In computer networks, a DMZ (demilitarized zone) is a computer host or small network inserted as a neutral zone between a company's private network and the outside public network. It prevents outside users from getting direct access to a server that has company data. (The term comes from the geographic buffer zone that was set up between North Korea and South Korea following the UN police action in the early 1950s.) A DMZ is an optional and more secure approach to a firewall and effectively acts as a proxy server as well.

In a typical DMZ configuration for a small company, a separate computer (or host in network terms) receives requests from users within the private network for access to Web sites or other companies accessible on the public network. The DMZ host then initiates sessions for these requests on the public network. However, the DMZ host is not able to initiate a session back into the private network. It can only forward packets that have already been requested.

Users of the public network outside the company can access only the DMZ host. The DMZ may typically also have the company's Web pages so these could be served to the outside world. However, the DMZ provides access to no other company data. In the event that an outside user penetrated the DMZ hosts security, the Web pages might be corrupted but no other company information would be exposed. D-Link, a leading maker of routers, is one company that sells products designed for setting up a DMZ

## 7 How do I configure the DMZ Host?

The DMZ feature allows you to forward all incoming ports to one computer on the local network. The DMZ, or Demilitarized Zone, will allow the specified computer to be exposed to the Internet. DMZ is useful when a certain application or game does not work through the firewall. The computer that is configured for DMZ will be completely vulnerable on the Internet, so it is suggested that you try opening ports from the Virtual Server or Firewall settings before using DMZ.

**Step 1:** Find the IP address of the computer you want to use as the DMZ host.

*To find out how to locate the IP Address of the computer in Windows XP/2000/Me/9x or Macintosh operating systems please refer to Step 4 of the first question in this section (Frequently Asked Questions).*

**Step 2:** Log into the web based configuration of the router by typing in the IP Address of the router (default:192.168.0.1) in your web browser. The username is **admin** (all lowercase) and the password is **blank** (nothing)

**Step 3:** Click the **Advanced** tab and then click on the **DMZ** button. Select **Enable** and type in the IP Address you found in step 1.

**Step 4:** Click **Apply** and then **Continue** to save the changes.

Note: When DMZ is enabled, Virtual Server settings will still be effective. Remember, you cannot forward the same port to multiple IP Addresses, so the Virtual Server settings will take priority over DMZ settings.

### DMZ

DMZ (Demilitarized Zone) is used to allow a single computer on the LAN to be exposed to the Internet .

Enabled  Disabled

IP Address:

    
Apply Cancel Help

## 8 How do I open a range of ports on my DI-724U using Port Forwarding?

**Step 1:** Access the router's Web configuration by entering the router's IP Address in your Web browser. The default IP Address is **192.168.0.1**. Login using your password. The default username is "**admin**" and the password is blank.

*If you are having difficulty accessing Web management, please see the first question in this section.*

**Step 2:** From the Web management Home page, click the **Advanced** tab then click the **Port Forwarding** button.

### Port Forwarding

Port Forwarding is used to open multiple ports or range of ports in your router and redirect data through those ports to a single PC on your network

Enabled  Disabled

**Name :**

**IP Address :**

**TCP Ports to Open :**

**UDP Ports to Open :**

**Firewall Rule :**

Details:

**Schedule :**

Details:




  
 Apply Cancel Help

### Port Forwarding List

Name	IP Address	TCP Ports	UDP Ports	Firewall Rule	Schedule
------	------------	-----------	-----------	---------------	----------

**Step 3:** Click on **Enabled** and type in a name for the new rule.

**Step 4:** Enter the IP Address of the computer on your local network that you want to allow the incoming service to. This will not work with a range of IP Addresses.

**Step 5:** Enter the port or range of TCP or UDP ports that are required to be open for the incoming service.

**Step 6:** Click **Apply** and then click **Continue**.

Note: Make sure DMZ host is disabled.

Because our routers use NAT (Network Address Translation), you can only open a specific port to one computer at a time. For example: If you have 2 web servers on your network, you cannot open port 80 to both computers. You will need to configure 1 of the web servers to use port 81. Now you can open port 80 to the first computer and then open port 81 to the other computer.

## 9 What are virtual servers?

A Virtual Server is defined as a service port, and all requests to this port will be redirected to the computer specified by the server IP. For example, if you have an FTP Server (port 21) at 192.168.0.5, a Web server (port 80) at 192.168.0.6, and a VPN server at 192.168.0.7, then you need to specify the following virtual server mapping table:

Server Port	Server IP	Enable
21	192.168.0.5	X
80	192.168.0.6	X
1723	192.168.0.7	X

## 10 How do I use *PC Anywhere* with my DI-724U router?

You will need to open 2 ports in the Virtual Server section of your D-Link router.

**Step 1:** Open your web browser and enter the IP Address of the router (192.168.0.1).

**Step 2:** Click on **Advanced** at the top and then click **Virtual Server** on the left side.

**Step 3:** Enter the information as seen below. The **Private IP** is the IP Address of the computer on your local network that you want to connect to.

**Virtual Server**  
Virtual Server is used to allow Internet users access to LAN services.

Enabled  Disabled

Name

Private IP

Protocol Type

Private Port  ~

Public Port  ~

Schedule  Always

From Time  :   To  :

Day  To





**Apply Cancel Help**

**Virtual Servers List**

Name	Private IP	Protocol	Schedule

**Step 4:** The first entry will read as shown above.

**Step 5:** Click **Apply** and then click **Continue**.

**Step 6:** Create a second entry as shown below:

**Virtual Server**  
Virtual Server is used to allow Internet users access to LAN services.

Enabled  Disabled

Name

Private IP

Protocol Type

Private Port  ~

Public Port  ~

Schedule  Always

From Time  :   To  :

Day  To





**Apply Cancel Help**

**Virtual Servers List**

**Step 7:** Click **Apply** and then click **Continue**.

**Step 8:** Run *PCAnywhere* from the remote site and use the WAN IP Address of the router, not your computer's IP Address.

## 11 How can I use eDonkey behind my D-Link Router?

You must open ports on your router to allow incoming traffic while using *eDonkey*.

eDonkey uses three ports (4 if using CLI):

4661 (TCP) To connect with a server

4662 (TCP) To connect with other clients

4665 (UDP) To communicate with servers other than the one you are connected to.

4663 (TCP) \*Used with the command line (CLI) client when it is configured to allow remote connections. This is the case when using a Graphical Interface (such as the Java Interface) with the client.

**Step 1:** Open your web browser and enter the IP Address of your router (192.168.0.1). Enter username (admin) and your password (leave blank).

**Step 2:** Click on **Advanced** and then click **Port Forwarding**.

### Port Forwarding

Port Forwarding is used to open multiple ports or range of ports in your router and redirect data through those ports to a single PC on your network

Enabled  Disabled

**Name :**

**IP Address :**

**TCP Ports to Open :**

**UDP Ports to Open :**

**Firewall Rule :**

Details:

**Schedule :**

Details:

Apply Cancel Help

### Port Forwarding List

Name	IP Address	TCP Ports	UDP Ports	Firewall Rule	Schedule
------	------------	-----------	-----------	---------------	----------

*Advanced > Port Forwarding*



**Step 3:** Port Forwarding Rule:

Enter the IP Address of the computer you are running eDonkey from. Enter **4661** in the first box and then **4665** in the second box. Click **Always** or set a schedule.

**Step 4:** Click **Apply** and then **Continue**.

## 12 How do I configure my router for KaZaA and Grokster?

The following is for KaZaA, Grokster, and others using the FastTrack P2P file sharing system.

In most cases, you do not have to configure anything on the router or on the Kazaa software. If you are having problems, please follow steps below:

**Step 1:** Enter the IP Address of your router in a web browser (192.168.0.1).

**Step 2:** Enter your username (admin) and your password (blank by default).

**Step 3:** Click on Advanced and then click Virtual Server.

**Step 4:** Click Enabled and then enter a Name (kazaa for example).

**Step 5:** Enter the IP Address of the computer you are running KaZaA from in the Private IP box. Select TCP for the Protocol Type.

**Step 6:** Enter 1214 in the Private and Public Port boxes. Click Always under schedule or set a time range. Click Apply.

### Virtual Server

Virtual Server is used to allow Internet users access to LAN services.

Enabled  Disabled

**Name :**

**Private IP :**

**Protocol Type :**

**Private Port :**

**Public Port :**

**Firewall Rule :**

Details:

**Schedule :**

Details:

Make sure that you did not enable proxy/firewall in the KaZaA software.

## 13 How do I configure my router to play Warcraft 3?

You must open ports on your router to allow incoming traffic while hosting a game in Warcraft 3. To play a game, you do not have to configure your router.

Warcraft 3 (Battlenet) uses port 6112.

**Step 1:** Open your web browser and enter the IP Address of your router (192.168.0.1). Enter username (admin) and your password (leave blank).

**Step 2:** Click on **Advanced** and then click **Virtual Server**.

**Step 3:** Create a new entry: Click **Enabled**. Enter a name (warcraft3). Private IP - Enter the IP Address of the computer you want to host the game. Select **TCP** for Protocol Type Enter **6112** for both Private Port and Public Port Click **Always** or set a schedule.

### Virtual Server

Virtual Server is used to allow Internet users access to LAN services.

Enabled    Disabled

**Name :**

**Private IP :**

**Protocol Type :**

**Private Port :**

**Public Port :**

**Firewall Rule :**

Details:

**Schedule :**

Details:




  
**Apply Cancel Help**

Step 4 Click **Apply** and then **Continue**.

Note: In order to host a Warcraft 3 game, you need to be able to accept both types of traffic on the computer that is running this game. To ensure this, please repeat steps 1-4 and this time make sure to select **UDP** for Protocol Type.

Note: If you want multiple computers from you LAN to play in the same game that you are hosting, then repeat the steps above and enter the IP Addresses of the other computers. You will need to change ports. Computer #2 can use port 6113, computer #3 can use 6114, and so on.

You will need to change the port information within the Warcraft 3 software for computers #2 and up.

### **Configure the Game Port information on each computer:**

Start Warcraft 3 on each computer, click **Options** > **Gameplay**. Scroll down and you should see **Game Port**. Enter the port number as you entered in the above steps.

## **14 How do I use NetMeeting with my D-Link Router?**

Unlike most TCP/IP applications, NetMeeting uses **DYNAMIC PORTS** instead of STATIC PORTS. That means that each NetMeeting connection is somewhat different than the last. For instance, the HTTP web site application uses port 80. NetMeeting can use any of over 60,000 different ports.

All broadband routers using (only) standard NAT and all internet sharing programs like Microsoft ICS that use (only) standard NAT will NOT work with NetMeeting or other h.323 software packages.

The solution is to put the router in DMZ.

Note: A few hardware manufacturers have taken it on themselves to actually provide H.323 compatibility. This is not an easy task since the router must search each incoming packet for signs that it might be a netmeeting packet. This is a whole lot more work than a router normally does and may actually be a **weak point in the firewall**. D-Link is not one of the manufacturers.

To read more on this visit <http://www.HomenetHelp.com>.

## **15 What is NAT?**

NAT stands for **Network Address Translator**. It is proposed and described in RFC-1631 and is used for solving the IP Address depletion problem. Basically, each NAT box has a table consisting of pairs of local IP Addresses and globally unique addresses, by which the box can "translate" the local IP Addresses to global address and vice versa. Simply put, it is a method of connecting multiple computers to the Internet (or any other IP network) using one IP Address.

D-Link's broadband routers (ie: DI-724U) support NAT. With proper configuration, multiple users can access the Internet using a single account via the NAT device.

For more information on RFC-1631: The IP Network Address Translator (NAT), visit <http://www.faqs.org/rfcs/rfc1631.html>.

# Appendix

## Securing Your Network

### 1. Change Admin Password

Changing the password to access your new router is the first step in securing your network. This can be done through the Wizard or on the Admin Page of the Tools tab. There is no password by default and hackers will know this when trying to access your network. Make sure that the password you choose is not commonly known or something that is easy to guess such as your last name or your pet's name. Try using a combination of letters and numbers to deter intruders from hacking into your network. Your private information should be kept private.

### 2. Change your SSID

### 3. Enable WEP and WPA

### 4. Change the default LAN IP address

Change the default LAN IP address from 192.168.0.1 to an alternate IP address. There are 3 ranges of IP addresses that have been reserved for use on Private Networks.

**10.0.0.0 - 10.255.255.255 (10.0.0.0/8)**

**172.16.0.0 - 172.31.255.255 (172.16.0.0/12)**

**192.168.0.0 - 192.168.255.255 (192.168.0.0/16)**

D-Link routers use 192.168.0.1 as their default LAN IP address. Choosing an alternate IP address lessens the probability of an intruders knowing what IP network your devices are on.

### 5. Set up MAC Filtering

Each networking device (router, network card, etc) on a network contains a unique hexadecimal number that identifies that specific product. This number is referred to as a MAC address. MAC filtering allows you to create a list of the MAC address of each device on your network and only allows these specific devices to associate with your network. With this feature enabled, devices attempting to connect to your network with a MAC address that is not in the list you created, will be denied access.

# Glossary

## A

**Access Control List** - ACL. Database of network devices that are allowed to access resources on the network.

**Access Point** - AP. Device that allows wireless clients to connect to it and access the network

**Ad-hoc network** - Peer-to-Peer network between wireless clients

**Address Resolution Protocol** - ARP. Used to map MAC addresses to IP addresses so that conversions can be made in both directions.

**ADSL** - Asymmetric Digital Subscriber Line

**Advanced Encryption Standard** - AES. Government encryption standard

**Alphanumeric** - Characters A-Z and 0-9

**Antenna** - Used to transmit and receive RF signals.

**AppleTalk** - A set of Local Area Network protocols developed by Apple for their computer systems

**AppleTalk Address Resolution Protocol** - AARP. Used to map the MAC addresses of Apple computers to their AppleTalk network addresses, so that conversions can be made in both directions.

**Application layer** - 7th Layer of the OSI model. Provides services to applications to ensure that they can communicate properly with other applications on a network.

**ASCII** - American Standard Code for Information Interchange. This system of characters is most commonly used for text files

**Attenuation** - The loss in strength of digital and analog signals. The loss is greater when the signal is being transmitted over long distances.

**Authentication** - To provide credentials, like a Password, in order to verify that the person or device is really who they are claiming to be

**Automatic Private IP Addressing** - APIPA. An IP address that a Windows computer will assign itself when it is configured to obtain an IP address automatically but no DHCP server is available on the network

## B

**Backward Compatible** - The ability for new devices to communicate and interact with older legacy devices to guarantee interoperability

**Bandwidth** - The maximum amount of bytes or bits per second that can be transmitted to and from a network device

**Basic Input/Output System** - BIOS. A program that the processor of a computer uses to startup the system once it is turned on

**Baud** - Data transmission speed

**Bit rate** - The amount of bits that pass in given amount of time

**bit/sec** - bits per second

**BOOTP** - Bootstrap Protocol. Allows for computers to be booted up and given an IP address with no user intervention

**Bottleneck** - A time during processes when something causes the process to slowdown or stop all together

**Broadband** - A wide band of frequencies available for transmitting data

**Broadcast** – Transmitting data in all directions at once

**Browser** – A program that allows you to access resources on the web and provides them to you graphically

## C

**Cable modem** – A device that allows you to connect a computer up to a coaxial cable and receive Internet access from your Cable provider

**CardBus** – A newer version of the PC Card or PCMCIA interface. It supports a 32-bit data path, DMA, and consumes less voltage

**Carrier Sense Multiple Access/Collision Avoidance** – CSMA/CA

**Carrier Sense Multiple Access/Collision Detect** – CSMA/CD

**CAT 5** – Category 5. Used for 10/100 Mbps or 1Gbps Ethernet connections

**Client** – A program or user that requests data from a server

**Collision** – When do two devices on the same Ethernet network try and transmit data at the exact same time.

**Cookie** – Information that is stored on the hard drive of your computer that holds your preferences to the site that gave your computer the cookie

**CSMA/CA** – Carrier Sense Multiple Access/Collision Avoidance

**CSMA/CD** – Carrier Sense Multiple Access/Collision Detection

## D

**Data** – Information that has been translated into binary do that it can be processed or moved to another device

**Data Encryption Standard** – Uses a randomly selected 56-bit key that must be known by both the sender and the receiver when information is exchanged

**Data-Link layer** – The second layer of the OSI model. Controls the movement of data on the physical link of a network

**Database** – Organizes information so that it can be managed updated, as well as easily accessed by users or applications

**DB-25** – A 25 pin male connector for attaching External modems or RS-232 serial devices

**DB-9** – A 9 pin connector for RS-232 connections

**dBd** - decibels related to dipole antenna

**dBi** - decibels relative to isotropic radiator

**dBm** - decibels relative to one milliwatt

**Decrypt** – To unscramble an encrypted message back into plain text

**Default** – A predetermined value or setting that is used by a program when no user input has been entered for this value or setting

**Demilitarized zone** – **DMZ**. A single computer or group of computers that can be accessed by both users on the Internet as well as users on the Local Network, but that is not protected by the same security as the Local Network.

**DHCP** – **Dynamic Host Configuration Protocol**. Used to automatically assign IP addresses from a predefined pool of addresses to computers or devices that requests them

**Digital certificate** – An electronic method of providing credentials to a server in order to have access to it or a network

**Direct Sequence Spread Spectrum** – DSSS. Modulation technique used by 802.11b wireless devices

**DNS – Domain Name System.** Translates Domain Names to IP addresses

**DOCSIS** – Data Over Cable Service Interface Specifications. The standard interface for cable modems

**Domain name** – A name that is associated with an IP address

**Download** – To send a request from one computer to another and have the file transmitted back to the requesting computer

**DSL** – Digital Subscriber Line. High bandwidth Internet connection over telephone lines

**Duplex** – Sending and Receiving data transmissions at the same time

**Dynamic DNS service** – DDNS is provided by companies to allow users with Dynamic IP addresses to obtain a Domain Name that will always be linked to their changing IP address. The IP address is updated by either client software running on a computer or by a router that supports DDNS, whenever the IP address changes.

**Dynamic IP address** – IP address that is assigned by a DHCP server and that may change. Cable Internet providers usually use this method to assign IP addresses to their customers.

## E

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**EAP** – Extensible Authentication Protocol

**Email** – Electronic Mail is a computer-stored message that is transmitted over the Internet

**Encryption** – Converting data into cyphertext so that it cannot be easily read

**Enterprise** – Large organizations that use computers

**Ethernet** – The most widely used technology for Local Area Networks.

## F

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**Fiber optic** – A way of sending data through light impulses over glass or plastic wire or fiber

**File server** – A computer on a network that stores data so that the other computers on the network can all access it

**File sharing** – Allowing data from computers on a network to be accessed by other computers on the network will different levels of access rights

**Firewall** – A device that protects resources of the Local Area Network from unauthorized users outside of the local network

**Firmware** – Programming that is inserted into a hardware device that tells it how to function

**Fragmentation** – Breaking up data into smaller pieces to make it easier to store

**FTP** – File Transfer Protocol. Easiest way to transfer files between computers on the Internet

**Full-duplex** – Sending and Receiving data at the same time

## G

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**Gain** – The amount an amplifier boosts the wireless signal

**Gateway** – A device that connects your network to another, like the internet

**Gbps** – Gigabits per second

**Gigabit Ethernet** – Transmission technology that provides a data rate of 1 billion bits per second

**Graphical user interface** – GUI

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## H

**H.323** – A standard that provides consistency of voice and video transmissions and compatibility for videoconferencing devices

**Half-duplex** – Data cannot be transmitted and received at the same time

**Hashing** – Transforming a string of characters into a shorter string with a predefined length

**Hexadecimal** – Characters 0-9 and A-F

**HomePNA** – Networking over telephone lines

**HomeRF** – Networking standard that combines 802.11b and DECT (digital Enhanced Cordless Telecommunication) that provides speeds up to 1.6 Mbps and a distance of 150 ft using a Frequency Hopping transmission method

**Hop** – The action of data packets being transmitted from one router to another

**Host** – Computer on a network

**HTTP** – Hypertext Transfer Protocol is used to transfer files from HTTP servers (web servers) to HTTP clients (web browsers)

**HTTPS** – HTTP over SSL is used to encrypt and decrypt HTTP transmissions

**Hub** – A networking device that connects multiple devices together

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## I

**ICMP** – Internet Control Message Protocol

**IEEE** – Institute of Electrical and Electronics Engineers

**IETF** – Internet Engineering Task Force

**IGMP** – Internet Group Management Protocol is used to make sure that computers can report their multicast group membership to adjacent routers

**IIS** – Internet Information Server is a WEB server and FTP server provided by Microsoft

**IKE** – Internet Key Exchange is used to ensure security for VPN connections

**Infrastructure** – In terms of a wireless network, this is when wireless clients use an Access Point to gain access to the network

**Internet** – A system of worldwide networks which use TCP/IP to allow for resources to be accessed from computers around the world

**Internet Explorer** – A World Wide Web browser created and provided by Microsoft

**Internet Protocol** – The method of transferring data from one computer to another on the Internet

**Internet Protocol Security** – IPsec provides security at the packet processing layer of network communication

**Internet Service Provider** – An ISP provides access to the Internet to individuals or companies

**Interoperability** – The ability for products to interact with other products without much customer interaction

**Intranet** – A private network

**Intrusion Detection** – A type of security that scans a network to detect attacks coming from inside and outside of the network

**IP** – Internet Protocol

**IP address** – A 32-bit number, when talking about Internet Protocol Version 4, that identifies each computer that transmits data on the Internet or on an Intranet

**IPsec** – Internet Protocol Security

**IPv6** – Internet Protocol Version 6 uses 128-bit addresses and was developed to solve the problem that we face of running out of IP version 4 addresses

**IPX** – Internetwork Packet Exchange is a networking protocol developed by Novell to enable their Netware clients and servers to communicate

**ISP** – Internet Service Provider

## J

**Java** – A programming language used to create programs and applets for web pages

## K

**Kbps** – Kilobits per second

**Kbyte** - Kilobyte

**Kerberos** – A method of securing and authenticating requests for services on a network

## L

**LAN** – Local Area Network

**Latency** – The amount of time that it takes a packet to get from the one point to another on a network. Also referred to as delay

**LED** - Light Emitting Diode

**Legacy** – Older devices or technology

**Local Area Network** – A group of computers in a building that usually access files from a server

## M

**MAC address** – A unique hardware address for devices on a Local Area Network

**MDI** – Medium Dependent Interface is an Ethernet port for a connection to a straight-through cable

**MDIX** - Medium Dependent Interface Crossover, is an Ethernet port for a connection to a crossover cable

**Megabit** - Mb

**Megabyte** - MB

**Megabits per second** - Mbps

**MIB** – Management Information Base is a set of objects that can be managed by using SNMP

**MIMO** – Multiple-in Multiple-out

**Modem** – A device that Modulates digital signals from a computer to an analog signal in order to transmit the signal over phone lines. It also Demodulates the analog signals coming from the phone lines to digital signals for your computer

**MPPE** – Microsoft Point-to-Point Encryption is used to secure data transmissions over PPTP connections

**MTU** – Maximum Transmission Unit is the largest packet that can be transmitted on a packet-based network like the Internet

**Multicast** – Sending data from one device to many devices on a network

## N

**NAT** – Network Address Translation allows many private IP addresses to connect to the Internet, or another network, through one IP address

**NetBEUI** – NetBIOS Extended User Interface is a Local Area Network communication protocol. This is an updated version of NetBIOS

**NetBIOS** – Network Basic Input/Output System

**Netmask** – Determines what portion of an IP address designates the Network and which part designates the Host

**NetWare** – A Server Software developed by Novell

**Network Interface Card** – A card installed in a computer or built onto the motherboard that allows the computer to connect to a network

**Network layer** – The third layer of the OSI model which handles the routing of traffic on a network

**Network Time Protocol** – Used to synchronize the time of all the computers in a network

**NIC** – Network Interface Card

**NTP** – Network Time Protocol

## O

**OFDM** – Orthogonal Frequency-Division Multiplexing is the modulation technique for both 802.11a and 802.11g

**OSI** – Open Systems Interconnection is the reference model for how data should travel between two devices on a network

**OSPF** – Open Shortest Path First is a routing protocol that is used more than RIP in larger scale networks because only changes to the routing table are sent to all the other routers in the network as opposed to sending the entire routing table at a regular interval, which is how RIP functions

## P

**Password** - A sequence of characters that is used to authenticate requests to resources on a network

**Personal Area Network** – The interconnection of networking devices within a range of 10 meters

**Physical layer** – The first layer of the OSI model. Provides the hardware means of transmitting electrical signals on a data carrier

**PoE** – Power over Ethernet is the means of transmitting electricity over the unused pairs in a category 5 Ethernet cable

**POP 3** – Post Office Protocol 3 is used for receiving email

**PPP** – Point-to-Point Protocol is used for two computers to communicate with each over a serial interface, like a phone line

**PPPoE** – Point-to-Point Protocol over Ethernet is used to connect multiple computers to a remote server over Ethernet

**PPTP** – Point-to-Point Tunneling Protocol is used for creating VPN tunnels over the Internet between two networks

**Preamble** – Used to synchronize communication timing between devices on a network

## Q

**QoS** – Quality of Service

## R

**RADIUS** – Remote Authentication Dial-In User Service allows for remote users to dial into a central server and be authenticated in order to access resources on a network

**Rendezvous** – Apple's version of UPnP, which allows for devices on a network to discover each other and be connected without the need to configure any settings

**Repeater** – Retransmits the signal of an Access Point in order to extend its coverage

**RIP** – Routing Information Protocol is used to synchronize the routing table of all the routers on a network

**RJ-11** – The most commonly used connection method for telephones

**RJ-45** – The most commonly used connection method for Ethernet

**RS-232C** – The interface for serial communication between computers and other related devices

**RSA** – Algorithm used for encryption and authentication

## S

**Samba** – A freeware program that allows for resources to be shared on a network. Mainly used in Unix based Operating Systems

**Server** – A computer on a network that provides services and resources to other computers on the network

**Session key** – An encryption and decryption key that is generated for every communication session between two computers

**Session layer** – The fifth layer of the OSI model which coordinates the connection and communication between applications on both ends

**Simple Mail Transfer Protocol** – Used for sending and receiving email

**Simple Network Management Protocol** – Governs the management and monitoring of network devices

**SMTP** – Simple Mail Transfer Protocol

**SNMP** – Simple Network Management Protocol

**SOHO** – Small Office/Home Office

**SPI** – Stateful Packet Inspection

**SSH** – Secure Shell is a command line interface that allows for secure connections to remote computers

**SSID** – Service Set Identifier is a name for a wireless network

**Stateful inspection** – A feature of a firewall that monitors outgoing and incoming traffic to make sure that only valid responses to outgoing requests for incoming packets are allowed to pass through the firewall

**Subnet mask** – Determines what portion of an IP address designates the Network and which part designates the Host

## T

**TCP** – Transmission Control Protocol

**TCP/IP** – Transmission Control Protocol/Internet Protocol

**TFTP** – Trivial File Transfer Protocol is a utility used for transferring files that is simpler to use than FTP but with less features

**Throughput** – The amount of data that can be transferred in a given time period

**Traceroute** – A utility displays the routes between you computer and specific destination

## U

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**UDP** – User Datagram Protocol

**UNC** – Universal Naming Convention allows for shares on computers to be identified without having to know what storage device it's on

**Unicast** – Communication between a single sender and receiver

**Universal Plug and Play** – A standard that allows network devices to discover each other and configure themselves to be a part of the network

**UPnP** – Universal Plug and Play

**URL** – Uniform Resource Locator is a unique address for files accessible on the Internet

**UTP** – Unshielded Twisted Pair

## V

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**Virtual LAN** -

**Virtual Private Network** – A secure tunnel over the Internet to connect remote offices or users to their company's network

**VLAN** – Virtual LAN

**Voice over IP** – Sending voice information over the Internet as opposed to the PSTN

**VoIP** – Voice over IP

## W

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**Wake on LAN** – Allows you to power up a computer though it's Network Interface Card

**WAN** – Wide Area Network

**Web browser** – A utility that allows you to view content and interact with all of the information on the World Wide Web

**WEP** – Wired Equivalent Privacy is security for wireless networks that is supposed to be comparable to that of a wired network

**Wi-Fi** – Wireless Fidelity

**Wi-Fi Protected Access** – An updated version of security for wireless networks that provides authentication as well as encryption

**Wide Area Network** - A network spanning a large geographical area or consisting of more than one LAN.

**Wireless ISP** – A company that provides a broadband Internet connection over a wireless connection

**Wireless LAN** – Connecting to a Local Area Network over one of the 802.11 wireless standards

**WISP** – Wireless Internet Service Provider

**WLAN** – Wireless Local Area Network

## Y

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**Yagi antenna** – A directional antenna used to concentrate wireless signals on a specific location

# Contacting Technical Support

You can find software updates and user documentation on the D-Link website.

D-Link provides free technical support for customers within the United States and within Canada for the duration of the warranty period on this product.

U.S. and Canadian customers can contact D-Link technical support through our web site, or by phone.

## **Tech Support for customers within the United States:**

*D-Link Technical Support over the Telephone:*

(877) 453-5465

24 hours a day, seven days a week.

*D-Link Technical Support over the Internet:*

<http://support.dlink.com>

email: [support@dlink.com](mailto:support@dlink.com)

## **Tech Support for customers within Canada:**

*D-Link Technical Support over the Telephone:*

(800) 361-5265

Monday to Friday 7:30am to 3:00am EST

Saturday and Sunday, 9:00am to 12:00am EST

*D-Link Technical Support over the Internet:*

<http://support.dlink.ca>

email: [support@dlink.ca](mailto:support@dlink.ca)

When contacting technical support, please provide the following information:

- *Serial number of the unit*
- *Model number or product name*
- *Software type and version number*

# Warranty

Subject to the terms and conditions set forth herein, D-Link Systems, Inc. ("D-Link") provides this Limited warranty for its product only to the person or entity that originally purchased the product from:

- D-Link or its authorized reseller or distributor and
- Products purchased and delivered within the fifty states of the United States, the District of Columbia, U.S. Possessions or Protectorates, U.S. Military Installations, addresses with an APO or FPO.

**Limited Warranty:** D-Link warrants that the hardware portion of the D-Link products described below will be free from material defects in workmanship and materials from the date of original retail purchase of the product, for the period set forth below applicable to the product type ("Warranty Period"), except as otherwise stated herein.

1-Year Limited Warranty for the Product(s) is defined as follows:

- Hardware (excluding power supplies and fans) One (1) Year
- Power Supplies and Fans One (1) Year
- Spare parts and spare kits Ninety (90) days

D-Link's sole obligation shall be to repair or replace the defective Hardware during the Warranty Period at no charge to the original owner or to refund at D-Link's sole discretion. Such repair or replacement will be rendered by D-Link at an Authorized D-Link Service Office. The replacement Hardware need not be new or have an identical make, model or part. D-Link may in its sole discretion replace the defective Hardware (or any part thereof) with any reconditioned product that D-Link reasonably determines is substantially equivalent (or superior) in all material respects to the defective Hardware. Repaired or replacement Hardware will be warranted for the remainder of the original Warranty Period from the date of original retail purchase. If a material defect is incapable of correction, or if D-Link determines in its sole discretion that it is not practical to repair or replace the defective Hardware, the price paid by the original purchaser for the defective Hardware will be refunded by D-Link upon return to D-Link of the defective Hardware. All Hardware (or part thereof) that is replaced by D-Link, or for which the purchase price is refunded, shall become the property of D-Link upon replacement or refund.

**Limited Software Warranty:** D-Link warrants that the software portion of the product ("Software") will substantially conform to D-Link's then current functional specifications for the Software, as set forth in the applicable documentation, from the date of original retail purchase of the Software for a period of ninety (90) days ("Warranty Period"), provided that the Software is properly installed on approved hardware and operated as contemplated in its documentation. D-Link further warrants that, during the Warranty Period, the magnetic media on which D-Link delivers the Software will be free of physical defects. D-Link's sole obligation shall be to replace the non-conforming Software (or defective media) with software that substantially conforms to D-Link's functional specifications for the Software or to refund at D-Link's sole discretion. Except as otherwise agreed by D-Link in writing, the replacement Software is provided only to the original licensee, and is subject to the terms and conditions of the license granted by D-Link for the Software. Software will be warranted for the remainder of the original Warranty Period from the date or original retail purchase. If a material non-conformance is incapable of correction, or if D-Link determines in its sole discretion that it is not practical to replace the non-conforming Software, the price paid by the original licensee for the non-conforming Software will be refunded by D-Link; provided that the non-conforming Software (and all copies thereof) is first returned to D-Link. The license granted respecting any Software for which a refund is given automatically terminates.

**Non-Applicability of Warranty:** The Limited Warranty provided hereunder for hardware and software of D-Link's products will not be applied to and does not cover any refurbished product and any product purchased through the inventory clearance or liquidation sale or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product and in that case, the product is being sold "As-Is" without any warranty whatsoever including, without limitation, the Limited

Warranty as described herein, notwithstanding anything stated herein to the contrary.

**Submitting A Claim:** The customer shall return the product to the original purchase point based on its return policy. In case the return policy period has expired and the product is within warranty, the customer shall submit a claim to D-Link as outlined below:

- The customer must submit with the product as part of the claim a written description of the Hardware defect or Software nonconformance in sufficient detail to allow D-Link to confirm the same.
- The original product owner must obtain a Return Material Authorization ("RMA") number from the Authorized D-Link Service Office and, if requested, provide written proof of purchase of the product (such as a copy of the dated purchase invoice for the product) before the warranty service is provided.
- After an RMA number is issued, the defective product must be packaged securely in the original or other suitable shipping package to ensure that it will not be damaged in transit, and the RMA number must be prominently marked on the outside of the package. Do not include any manuals or accessories in the shipping package. D-Link will only replace the defective portion of the Product and will not ship back any accessories.
- The customer is responsible for all in-bound shipping charges to D-Link. No Cash on Delivery ("COD") is allowed. Products sent COD will either be rejected by D-Link or become the property of D-Link. Products shall be fully insured by the customer. D-Link will not be held responsible for any packages that are lost in transit to D-Link. The repaired or replaced packages will be shipped to the customer via UPS Ground or any common carrier selected by D-Link, with shipping charges prepaid. Expedited shipping is available if shipping charges are prepaid by the customer and upon request.
- Return Merchandise Ship-To Address

**USA:** 17595 Mt. Herrmann, Fountain Valley, CA 92708

**Canada:** 2180 Winston Park Drive, Oakville, ON, L6H 5W1 (Visit <http://www.dlink.ca> for detailed warranty information within Canada)

D-Link may reject or return any product that is not packaged and shipped in strict compliance with the foregoing requirements, or for which an RMA number is not visible from the outside of the package. The product owner agrees to pay D-Link's reasonable handling and return shipping charges for any product that is not packaged and shipped in accordance with the foregoing requirements, or that is determined by D-Link not to be defective or non-conforming.

**What Is Not Covered:** This limited warranty provided by D-Link does not cover: Products, if in D-Link's judgment, have been subjected to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, repair or service in any way that is not contemplated in the documentation for the product, or if the model or serial number has been altered, tampered with, defaced or removed; Initial installation, installation and removal of the product for repair, and shipping costs; Operational adjustments covered in the operating manual for the product, and normal maintenance; Damage that occurs in shipment, due to act of God, failures due to power surge, and cosmetic damage; Any hardware, software, firmware or other products or services provided by anyone other than D-Link; Products that have been purchased from inventory clearance or liquidation sales or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product. Repair by anyone other than D-Link or an Authorized D-Link Service Office will void this Warranty.

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**Governing Law:** This Limited Warranty shall be governed by the laws of the State of California. Some states do not allow exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the foregoing limitations and exclusions may not apply. This limited warranty provides specific legal rights and the product owner may also have other rights which vary from state to state.

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**CE Mark Warning:** This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

FCC Statement: **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 communication. 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.

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. To maintain compliance with FCC RF exposure compliance requirements, please avoid direct contact to the transmitting antenna during transmitting.

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

D-Link declares that the DI-724U (FCC ID: KA2DI634MA1) is limited in CH1~CH11 by specified firmware controlled in the USA.

**For detailed warranty outside the United States, please contact corresponding local D-Link office.**

# Registration

**Register your product online at:  
<http://support.dlink.com/register>**



Product registration is entirely voluntary and failure to complete or return this form will not diminish your warranty rights.

06/08/2005