D-Link®
Building Networks for People

Manual
Version 2.0

DWL-G820

Wireless 108G Gaming/Bridge Adapter

Table of Contents

Package Contents

Your DWL-G820 purchase includes the following:

- **D-Link AirPlus Xtreme G™ DWL-G820**
  802.11g Wireless 108G Gaming/Bridge Adapter
- Manual and Warranty on CD
- Ethernet Cable
- Quick Installation Guide
- 5V DC, 2A Power Adapter

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

System Requirements for Configuration:

- A computer or laptop with an Ethernet adapter. (We recommend that you use an Ethernet connection to configure the DWL-G820.)
- A current web-browser (e.g., Internet Explorer 6.0 or Netscape Navigator 7.0 or later) for configuration

For Use: You will need an Ethernet-enabled device such as a game console, laptop or desktop computer, or set top box. The DWL-G820 will transform virtually any Ethernet device into a wireless device, enabling wireless communication over your network or in an Ad-Hoc/Peer-to-Peer mode.

Introduction

D-Link announces its latest addition to the D-Link *Air*Plus *Xtreme G™* series of wireless networking products–the DWL-G820 Wireless 108G Gaming/Bridge Adapter. The DWL-G820 adds 802.11g wireless connectivity to your Ethernet-enabled gaming console.

The DWL-G820 works with any Ethernet-ready game console, making it ideal for both head-to-head and online gaming. Use Wireless Gaming/Bridge Adapters to wirelessly connect two game systems to each other or use one to connect your system to a wireless network.

And when not gaming, you can use the DWL-G820 to make any Ethernet-enabled device, such as a media set-top box, wireless. The DWL-G820 is a true plug & play device that requires no configuration and is ready to work right out of the box.

The Wireless Gaming/Bridge Adapter is also highly configurable, using any Java-enabled Web browser. With support for several advanced features, including Wi-Fi Protected Access (WPA) and 128-bit WEP encryption, the Wireless Gaming/Bridge Adapter also protects your wireless signal.

The DWL-G820 uses D-Link 108G Technology for data transfer rates that are 15x faster than standard 802.11b rates and works with all 802.11g networks*. The device is also backwards compatible with 802.11b wireless networks. This Gaming Adapter provides lag-free performance and allows your gaming console to join your wireless network.

* 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.

Features and Benefits

■ **Enables any Ethernet ready Game Console with Wireless Connectivity**

The DWL-G820 is the ideal solution for enabling wireless connectivity for any Ethernet-ready gaming console. You can also use the DWL-G820 for a media set-top box or Ethernet enabled printer.

■ **Lag-Free Connection Using D-Link 108G Technology**

The D-Link 108G Technology in the DWL-G820 ensures that your wireless connection is fast for online gameplay. The DWL-G820 supports the Wi-Fi IEEE 802.11g networking standard and delivers maximum wireless signal rate up to 108Mbps* in the 2.4GHz frequency.

■ **Head-to-Head or Network Gaming Mode**

The DWL-G820 can be used in Ad-Hoc mode for direct communication with other wireless users or in Infrastructure mode to connect to other wireless networks. Use two DWL-G820s in Ad-Hoc mode to connect two gaming consoles for head-to-head gaming.
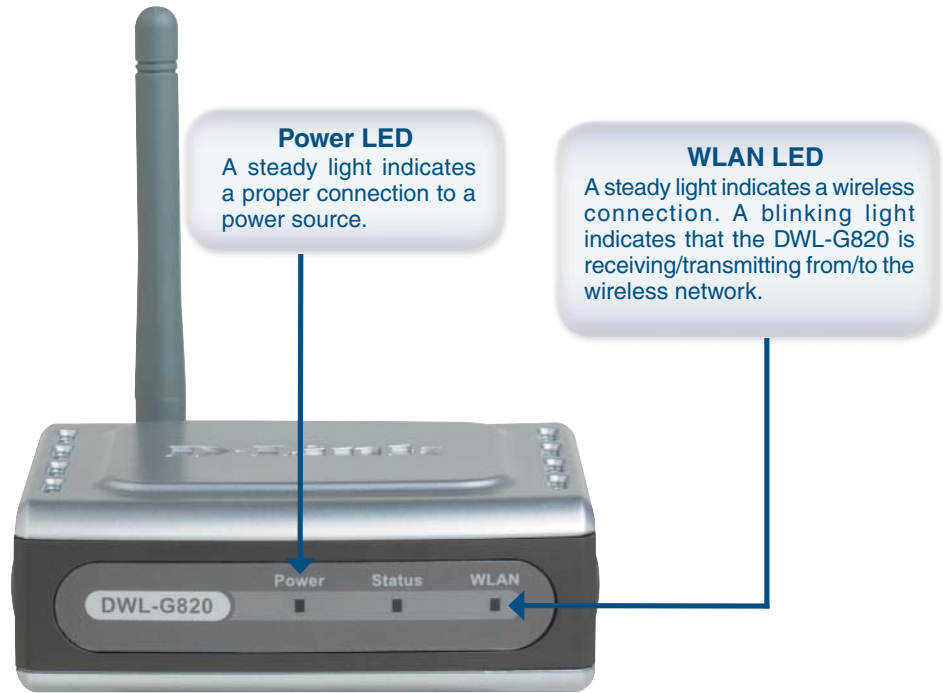
■ **Plug & Play Installation**

The DWL-G820 is ready to work straight out of the box. When used with other D-Link products, the DWL-G820 will automatically connect wirelessly. The DWL-G820 is platform independent, so you can use it with any Ethernet-enabled device.

■ **Backwards Compatible with 802.11b**

The DWL-G820 works with both 802.11g and 802.11b networks. It is also backwards compatible with the IEEE 802.11b standard, allowing you to connect your gaming console to other access points and adapters.
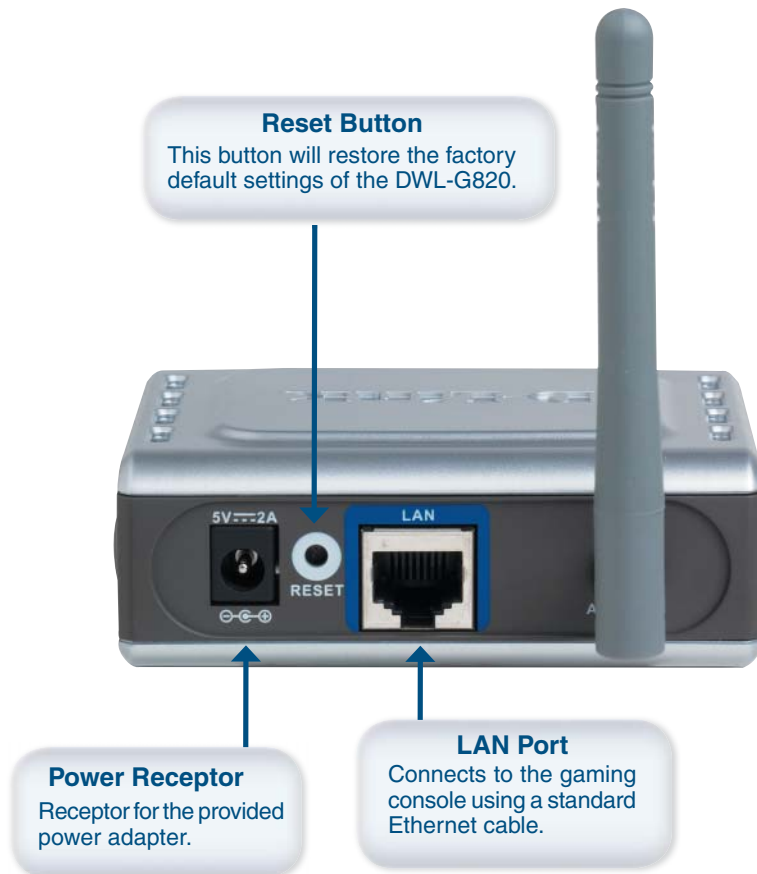
* Maximum wireless signal rate derived from IEEE Standard 802.11g specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate.

Front Panel

Power LED
A steady light indicates a proper connection to a power source.

WLAN LED
A steady light indicates a wireless connection. A blinking light indicates that the DWL-G820 is receiving/transmitting from/to the wireless network.

Note: The status light is currently inactive.

Rear Panel

Reset Button
This button will restore the factory default settings of the DWL-G820.

Power Receptor
Receptor for the provided power adapter.

LAN Port
Connects to the gaming console using a standard Ethernet cable.

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 Wireless Local Area Network (WLAN) is a 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 WLAN 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.

Inexpensive Solution - Wireless network devices are as competitively priced as conventional Ethernet network devices. The DWL-G820 saves money by providing multi-functionality, configurable in one of four different modes.

Scalability - WLANs can be configured in a variety of ways 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.

Standards-Based Technology

The DWL-G820 Wireless Gaming Adapter utilizes the **802.11b** and the **802.11g** standards.

The IEEE **802.11g** standard is an extension of the **802.11b** standard. It increases the data rate up to 54Mbps (108Mbps in Super G mode) 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** (**O**rthogonal **F**requency **D**ivision **M**ultiplexing) 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 D-Link DWL-G820 will automatically sense the best possible connection speed to ensure the greatest speed and range possible.

Wireless Installation Considerations

The D-Link *Air*Plus *Xtreme G™* DWL-G820 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 through, may limit the range. Typical ranges vary depending on the types of materials and background RF (radio frequency) noise in your home or business. The key to maximizing wireless range is to follow these basic guidelines:

1 Keep the number of walls and ceilings between the DWL-G820 and other network devices to a minimum - each wall or ceiling can reduce your DWL-G820'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 almost 3 feet (1 meter) 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 make a difference. A solid metal door or aluminum studs may have a negative effect on range. Try to position access points, wireless routers, and computers so that the signal passes through drywall or open doorways. Materials and objects such as glass, steel, metal, walls with insulation, water (fish tanks), mirrors, file cabinets, brick, and concrete will degrade your wireless signal.

4 Keep your product away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that generate RF noise.

5 If you are using 2.4GHz cordless phones or X-10 (wireless products such as ceiling fans, lights, and home security systems), your wireless connection may degrade dramatically or drop completely. Make sure your 2.4GHz phone base is as far away from your wireless devices as possible. The base transmits a signal even if the phone in not in use.

Getting Started

With its default settings, the DWL-G820, when activated, will connect with other D-Link *Air*Plus *Xtreme G™* products, right out of the box.

There are basically two modes of networking:

- **Infrastructure** – Connecting to an access point or wireless router

- **Ad-Hoc** – Communicating with another console, for Peer-to-Peer communication, using wireless network adapters, such as two or more DWL-G820 Wireless Gaming/Bridge Adapters, on each gaming console.

This example illustrates an **Ad-Hoc** setup. Simply connect the DWL-G820 (*refer to the Quick Installation Guide*) to your Ethernet-capable network device *(in this case, a gaming console)* and you will be able to connect wirelessly with other gaming consoles also connected to DWL-G820s.

Getting Started (continued)

Infrastructure Mode

This example illustrates an **Infrastructure** setup. To connect the DWL-G820 to a wireless network with a wireless router or access point, please refer to the printed Quick Installation Guide included with the product. Web configuration is required to connect the DWL-G820.

Some game consoles may require an additional Ethernet adapter.

Using the Configuration Utility

Requirements for using the DWL-G820's Web Configuration Utility

If you are incorporating the DWL-G820 into a network that contains all D-Link devices, you do not need to use the Web Configuration utility. With its default settings, the DWL-G820 will connect with other D-Link 802.11b or 802.11g devices that are set to their default settings, with no configuration needed!

If your network contains devices other than D-Link devices, or if you wish to configure the DWL-G820, you will need to do the following before using the Web Configuration Utility:

You will need a Java-enabled Web browser such as the Internet Explorer 6.0 or later, or the Netscape Navigator 7.0 or later.

You will need to assign a static IP address to the computer that you are using to configure the DWL-G820, within the IP address range of the DWL-G820. The DWL-G820 has a default IP address of 192.168.0.35 with a subnet mask of 255.255.255.0.

You can, for example, assign a static IP address of 192.168.0.2 with a subnet mask of 255.255.255.0 to the computer you will use for configuration. Please refer to the Appendix section of the Quick Installation Guide.

Factory Default Settings for the DWL-G820

Operating Mode:	Infrastructure
SSID:	default
Channel:	6
Transmission rate:	Auto
Encryption:	No
Administrator Password:	Blank (no password needed)
IP Address Mode:	Static
IP Address:	192.168.0.35
IP Subnet:	255.255.255.0
username:	admin

Using the Configuration Utility (continued)

After you have completed the *Setup Wizard* (please see the *Quick Installation Guide* that came with the product) you can access the *Configuration* menu at any time by opening the Web browser and typing in the IP address of the DWL-G820. The DWL-G820 default IP address is shown below:

Open a web browser and type in the IP address of the DWL-G820.
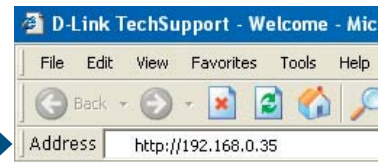
Note: if you have changed the default IP address assigned to the DWL-G820, make sure to enter the correct IP address.
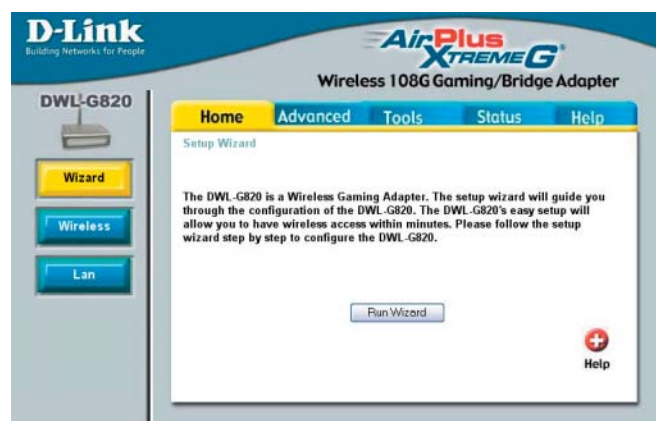
Type admin in the User Name field.

Leave the **Password** blank. *(However, if you have changed the password, please enter the correct password.)*
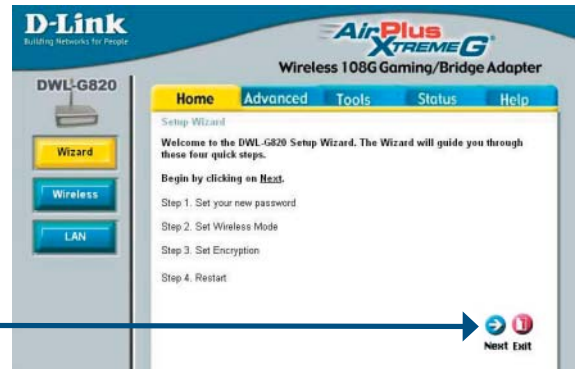
Click **OK**.

The **Home > Wizard** screen will appear.

Please refer to the *Quick Installation Guide* for more information regarding the Setup Wizard.

Using the Configuration Utility (continued)

Click **Next**.

Enter a new password.

Click **Next**.

Enter the SSID and Channel (ad-hoc mode only) of your wireless network. You may click **Site Survey** and select the wireless network you would like to connect to.

Click **Next**.

Enter the security settings of your wireless network (if any).

Click **Next**.

Using the Configuration Utility (continued)

If you selected WEP, enter the encryption settings. Your encryption settings must be exactly the same as on your other wireless devices.

Click **Next**.

If you selected WPA-PSK, enter the WPA passphrase. This passphrase must be exactly the same as on your other wireless devices.
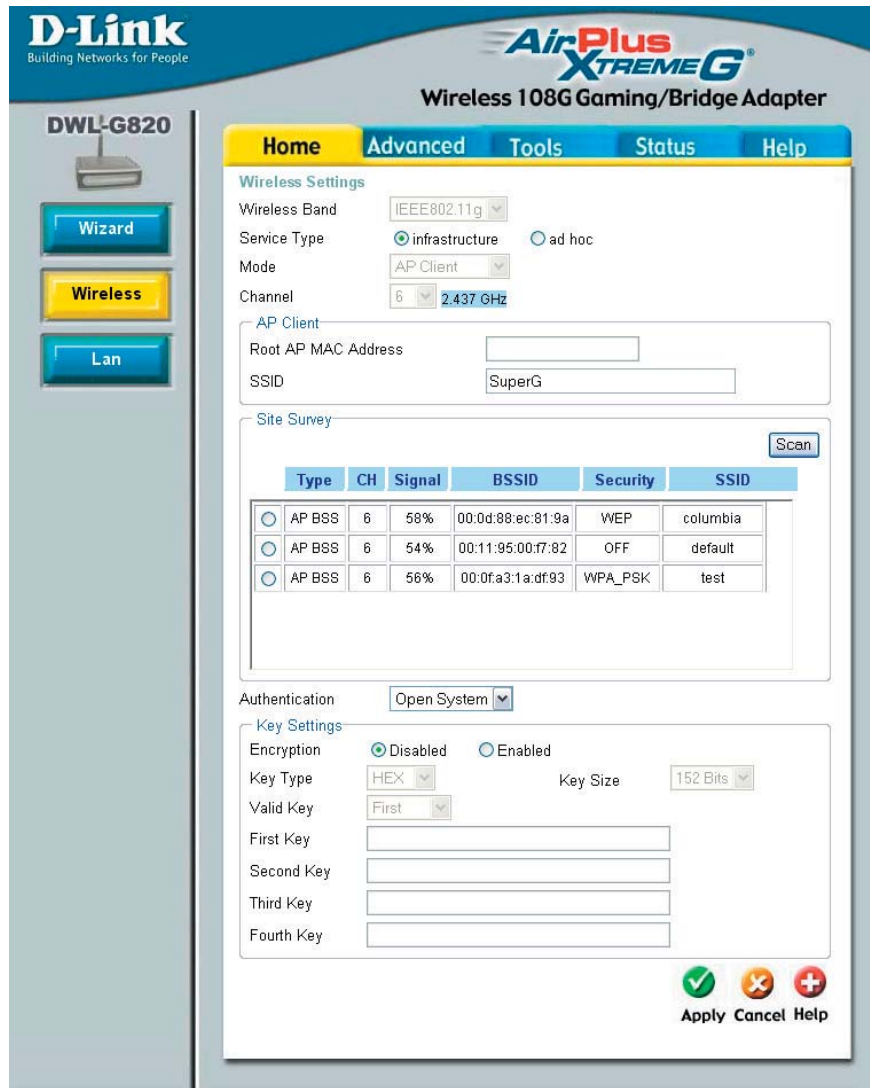

Click **Next**.

Click **Restart**.

You have completed the Configuration of the DWL-G820 using the Setup Wizard!

Home > Wireless

Wireless Band: This setting cannot be changed.

Service Type: Select Infrastructure or Ad-Hoc.

Channel: The default channel is 6. You may change the channel only when in Ad-Hoc mode. When in Infrastructure mode, the channel is controlled by the access point or wireless router that you're connected to.

SSID: Enter the SSID of your wireless network.

Root AP MAC Address: In Infrastructure mode: Enter the MAC Address of the access point or router in your network.

In Ad-Hoc mode: Enter the IP address of the DWL-G820 that you will be in Peer-to-Peer communication with.

Apply: Click **Apply** to save the changes.

Home > Wireless (continued)

Site Survey

The Site Survey feature allows you to connect to a wireless network. The DWL-G820 will scan for any available wireless networks and display details such as the SSID, channel, and if the network is using WEP or WPA-PSK security.

Click the radio button of the wireless network you want to connect to and click **Apply**.

	Type	CH	Signal	BSSID	Security	SSID
○	AP BSS	6	58%	00:0d:88:ec:81:9a	WEP	columbia
○	AP BSS	6	54%	00:11:95:00:f7:82	OFF	default
○	AP BSS	6	56%	00:0f:a3:1a:df:93	WPA_PSK	test

Scan: Click the Scan button to refresh the list of wireless networks.

Type: Displays the type of device. **AP BSS** implies an access point or wireless router (Infrastructure).

CH: Displays the channel the network is transmitting on.

Signal: Displays the signal strength of the network.

BSSID: The BSSID is the MAC address of the transmitting device (e.g. access point or wireless router).

Security: Displays the type of security used on the network. If you connect to a wireless network that is using WEP or WPA-PSK, you must enter the security information (see the following page for more infomation on wireless security).

SSID: Displays the SSID of the network.

Wireless Security Overview

The DWL-G820 offers 2 types of wireless security - WEP and WPA-PSK.

■ WEP (Wired Equivalent Privacy) is a method of encrypting data for wireless communication intended to provide the same level of privacy as a wired network. To gain access to a WEP network, you must know the key. The key is a string of characters that you create. When using WEP, you must determine the level of encryption. The type of encryption determines the key length. 128-bit encryption requires a longer key than 64-bit encryption. Keys are defined by entering in a string in HEX (hexadecimal - using characters 0-9, A-F) or ASCII (American Standard Code for Information Interchange – alphanumeric characters) format. ASCII format is provided so you can enter a string that is easier to remember. The ASCII string is converted to HEX for use over the network. Four keys can be defined so that you can change keys easily.

Example:

64-bit hexadecimal keys are exactly 10 characters in length.
(12345678FA is a valid string of 10 characters for 64-bit encryption)

128-bit hexadecimal keys are exactly 26 characters in length.
(456FBCDF123400122225271730 is a valid string of 26 characters for 128-bit encryption)

152-bit hexadecimal keys are exactly 32 characters in length.
(392D4CEE121400122225271730D3899A is a valid string of 32 characters for 152-bit encryption)

64-bit ASCII keys are exactly 5 characters in length
(DMODE is a valid string of 5 characters for 64-bit encryption)

128-bit ASCII keys are exactly 13 characters in length
(2002HALOSWIN1 is a valid string of 13 characters for 128-bit encryption)

152-bit ASCII keys are exactly 16 characters in length
(MYWEPSECURITYKEY is a valid string of 16 characters for 152-bit encryption)

■ WPA-PSK (Wi-Fi Protected Access - Pre-Shared Key) is a Wi-Fi standard that was designed to improve upon the security features of WEP (Wired Equivalent Privacy).

WPA has Improved data encryption through the Temporal Key Integrity Protocol (TKIP). TKIP scrambles the keys using a hashing algorithm and, by adding an integrity-checking feature, ensures that the keys haven't been tampered with.

The key or passphrase is an alpha-numeric password between 8 and 63 characters long. The passphrase can include symbols (!?*&_) and spaces. Make sure you enter this key exactly the same as on your access point or wireless router.

Home > Wireless (continued)

Wireless Security - WEP

Authentication	Shared Key

Key Settings

Encryption	○ Disabled ● Enabled
Key Type	HEX	Key Size	152 Bits
Valid Key	First
First Key	
Second Key	
Third Key	
Fourth Key	

Authentication: Select **Open System** to communicate the key across the network. Select **Shared Key** (recommended) to limit communication to only those devices that share the same WEP settings.

Encryption: Select **Disabled** or **Enabled.**

Key Type: Select **HEX** or **ASCII**.

Key Size: Select **64, 128, or 152-bit encryption.**

Valid Key: Select the **1st** through the **4th** key to be the active key.

Key Table: Input up to **four keys** for encryption. You will select one of these keys in the valid key field.

Apply: Click **Apply** to save changes.

The WEP key must be exactly the same as on your wireless router or access point. For more information on setting up WEP on your wireless router or access point, please refer to its user guide or manual.

Home > Wireless (continued)

Wireless Security - WPA-PSK

Authentication: Select **WPA-PSK**.

Cipher Type: Select **TKIP.**

Passphrase: Enter the WPA-PSK passphrase or key. This must be exactly the same as on your wireless router or access point. The passphrase or key is an alpha-numeric password between 8 and 63 characters long. It can include symbols (!?*&_) and spaces.

Apply: Click **Apply** to save changes.

The WPA-PSK passphrase must be exactly the same as on your wireless router or access point. For more information on setting up WPA-PSK on your wireless router or access point, please refer to its user guide or manual.

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 DWL-G820. 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.

**Get IP From:** Select Static (Manual) or Dynamic (DHCP) as the method you will use to assign an IP address to the DWL-G820.

IP Address: The IP address of the LAN interface. The default IP address is **192.168.0.35**

Subnet Mask: The subnet mask of the LAN interface. The default subnet mask is **255.255.255.0**

Default Gateway: This field is optional. Enter in the IP address of the router or gateway on your network.

Apply: Click **Apply** to save the changes.

Advanced > Performance
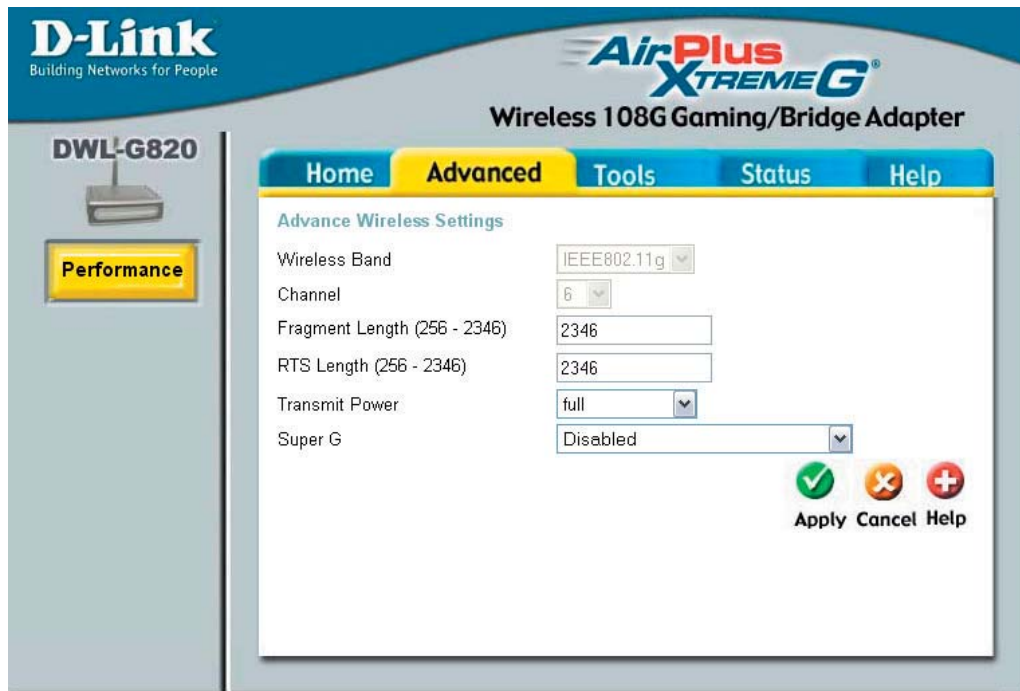
|	
Wireless Band	IEEE802.11g
Channel	Select from channels **1-11**.
Fragment Length	The fragmentation threshold, which is specified in bytes, determines whether packets will be fragmented. Packets exceeding the 2346 byte setting will be fragmented before transmission. 2346 is the default setting.
RTS Length	This value should remain at its default setting of 2346. If you encounter inconsistent data flow, only minor modifications to the value range between 256 and 2346 are recommended.
Transmit Power	Choose full, half (-3dB), quarter (-6dB), eighth (-9dB), minimum power.
Super G Mode	Super G is a group of performance enhancement features that increase end user application throughput in an 802.11g network. Super G is backwards compatible to standard 802.11g devices. For top performance, all wirelss devices on the network should be Super G capable. Select either Disabled, Super G without Turbo, or Super G with Dynamic Turbo.
Disabled	Standard 802.11g support, no enhanced capabilities.
Super G without Turbo	Capable of Packet Bursting, FastFrames, Compression, and no Turbo mode.
Super G with Dynamic Turbo	Capable of Packet Bursting, FastFrames, Compression, and Dynamic Turbo. This setting is backwards compatible with non-Turbo (legacy) devices. Dynamic Turbo mode is only enabled when all devices on the wireless network are configured with Super G with Dynamic Turbo enabled.

Tools > Admin
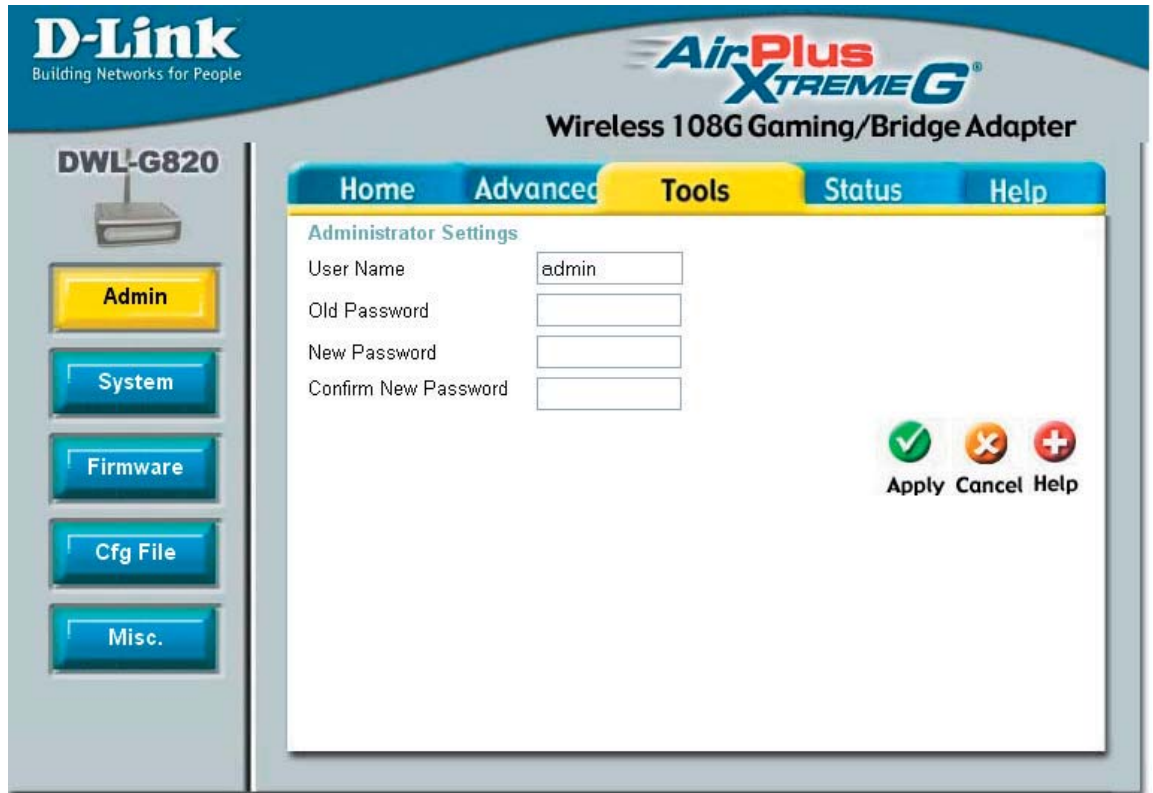
User Name: Enter a user name **admin** is the default setting.

Old Password: To change your password, enter your old password here.

New Password: Enter your new password here.

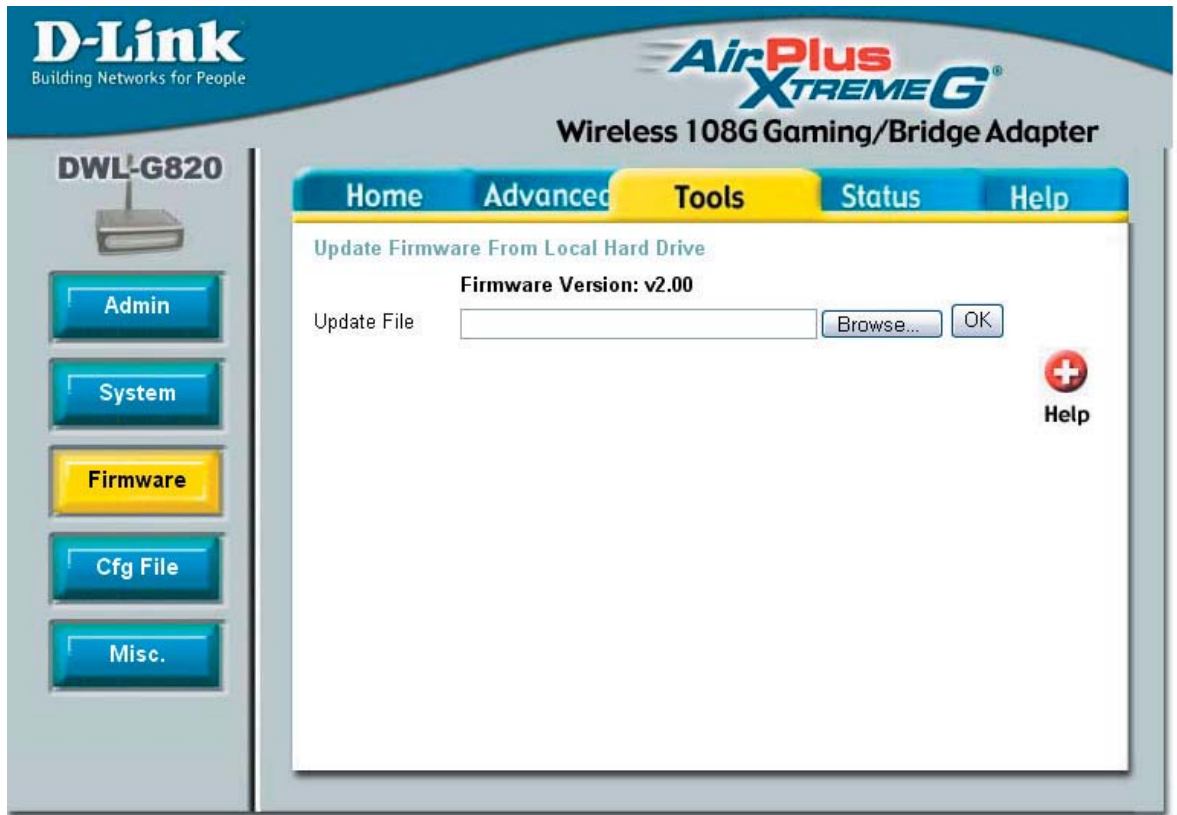**Confirm New Password:** Enter your new password again.

Tools > System
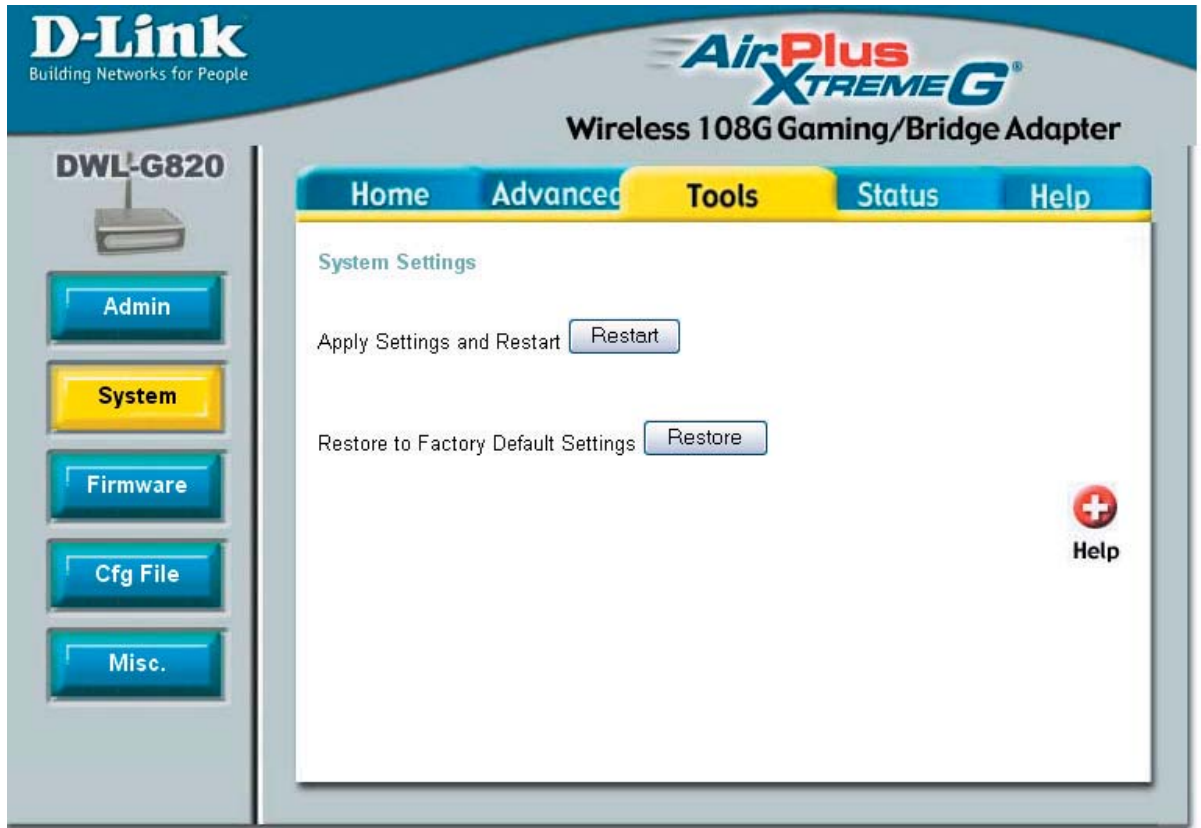
Apply Settings and Restart: Click **Restart** to apply the system settings and restart the DWL-G820.

**Restore to Factory Default Settings:**   Click **Restore** to return the DWL-G820 to its factory default settings.

Tools > Firmware

Update File: After you have downloaded the most recent version of the firmware
from http://support.dlink.com you can **browse** your hard drive to
locate the downloaded file and click **OK** to update the firmware.
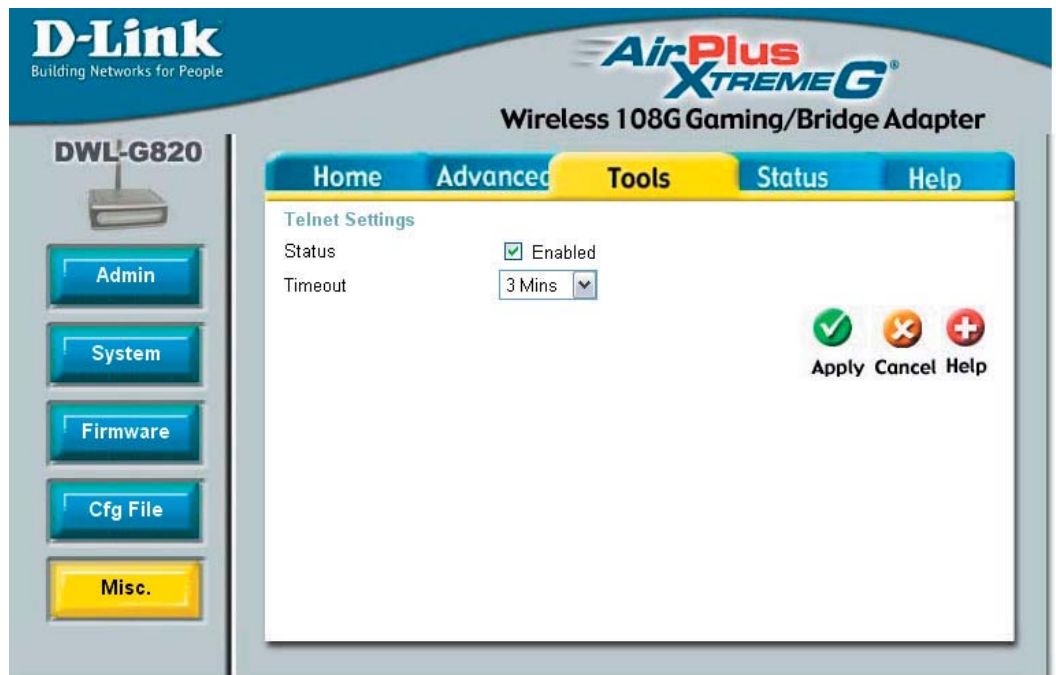Do not turn off the unit during this process.

Tools > Cfg File
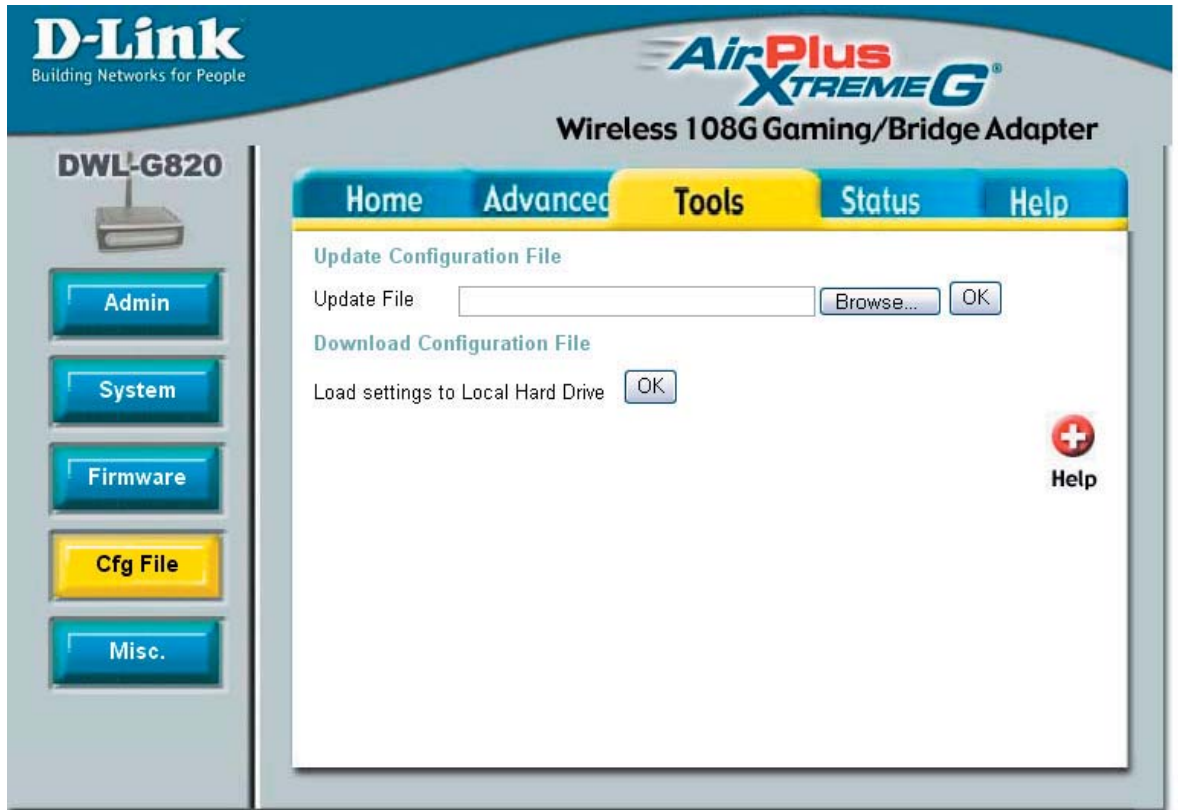
Update File: Browse for the configuration file (file.cfg) that you have saved to your hard drive. Click **OK** when you made your selection.

Load Settings to the Local Hard Drive: Click **OK** to save the configuration settings to your hard drive.
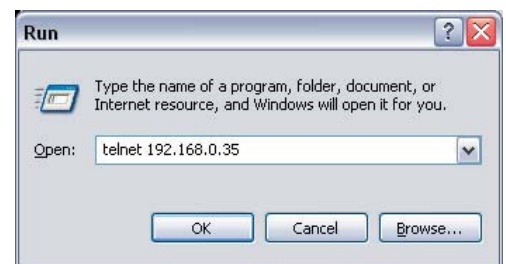
Tools > Misc

Status: Check the box to Enable a Telnet session.

Timeout: Select a time period after which a session timeout will occur.

Telnet is a program that allows you to control your network from a single PC.

To use telnet, go to **Start** > **Run** and type telnet with the IP address of the DWL-G820 in the run box and click **OK** (e.g. **telnet 192.168.0.35**).
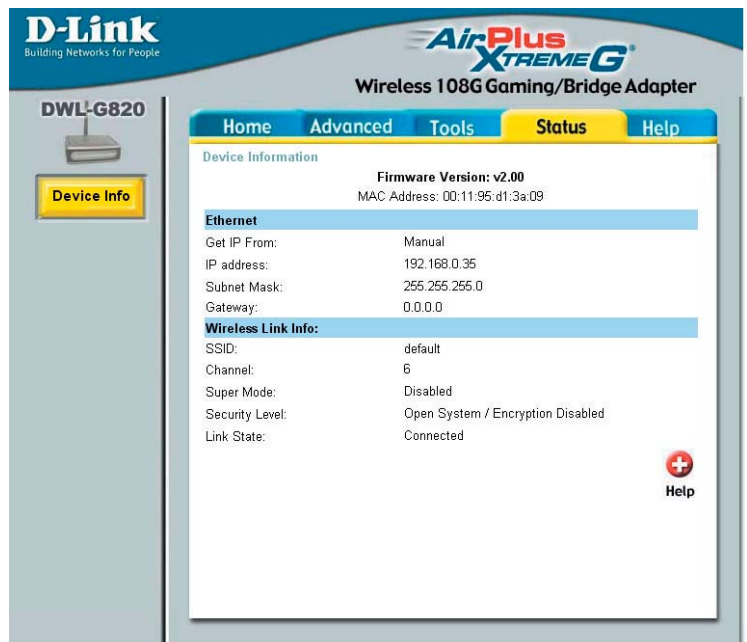

Enter the username (**admin**) and your password. Type **help** for a list of commands.
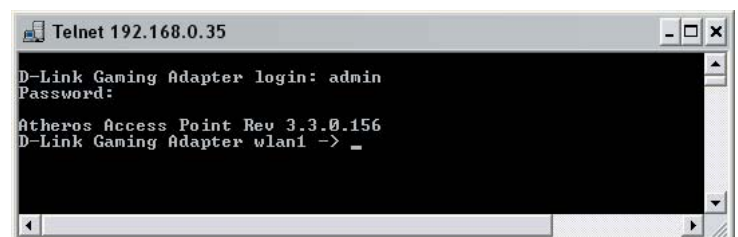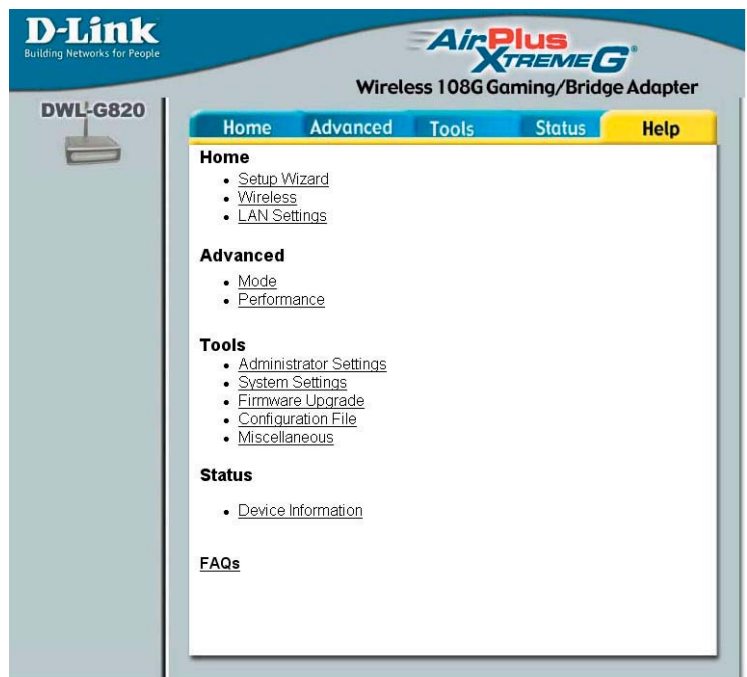
Status > Device Info

This window displays the settings of the DWL-G820, as well as the Firmware version, and the MAC address.

Help

At this window you can access the help screens for the topics listed.

Troubleshooting

This section provides solutions to situations that can occur during the installation and operation of the DWL-G820 Wireless Gaming/Bridge Adapter.

1. How do I assign a static IP address in Windows XP/2000?

Please note that routers will automatically assign IP addresses to the computers on the network, using DHCP (Dynamic Host Configuration Protocol) technology. If you are using a DHCP-capable router you will not need to assign static IP addresses.

If you are not using a DHCP capable router, or you need to assign a static IP address, please follow these instructions:
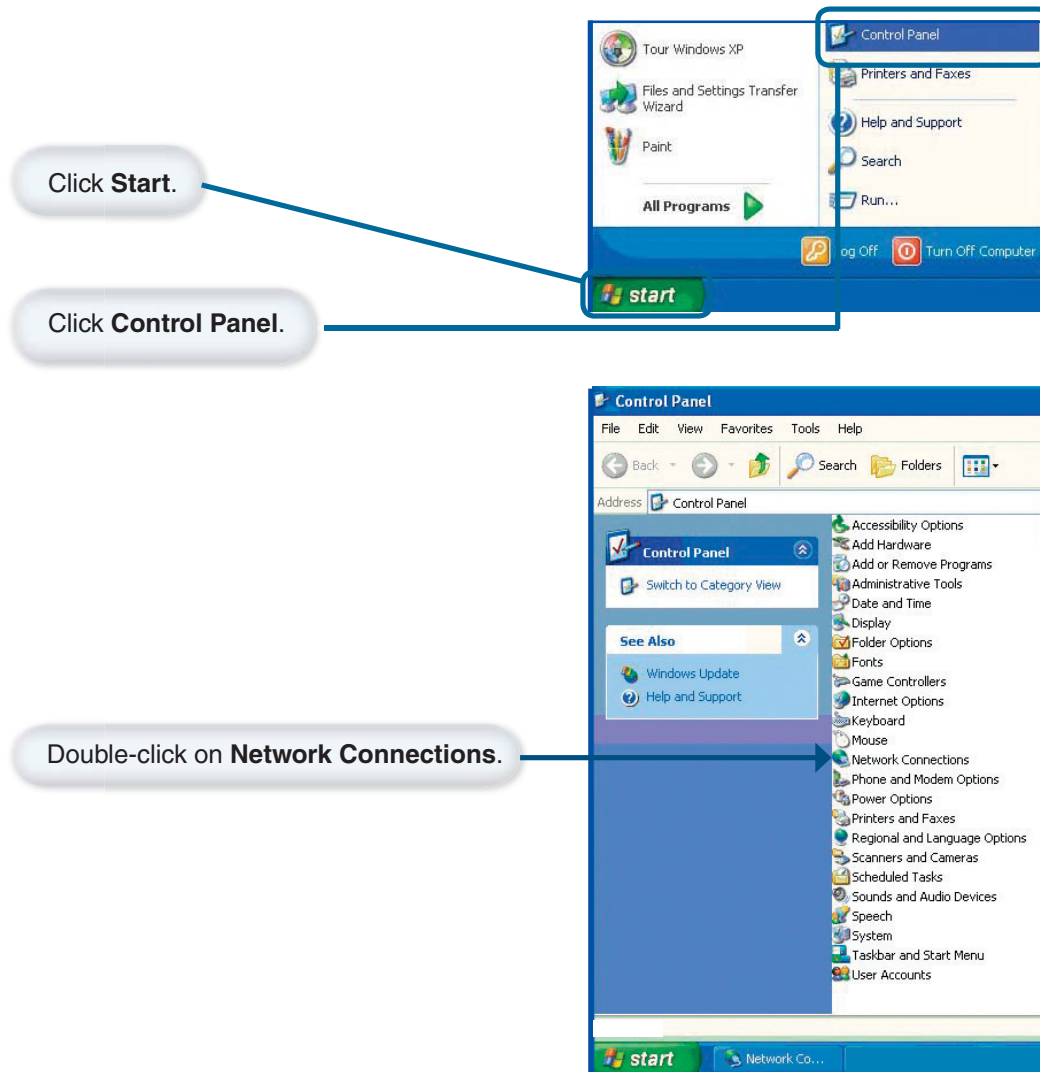
Click **Start**.

Click **Control Panel**.

Double-click on **Network Connections**.

Troubleshooting (continued)
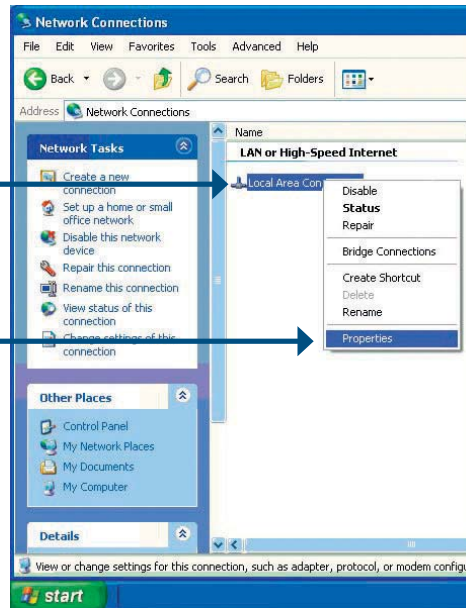
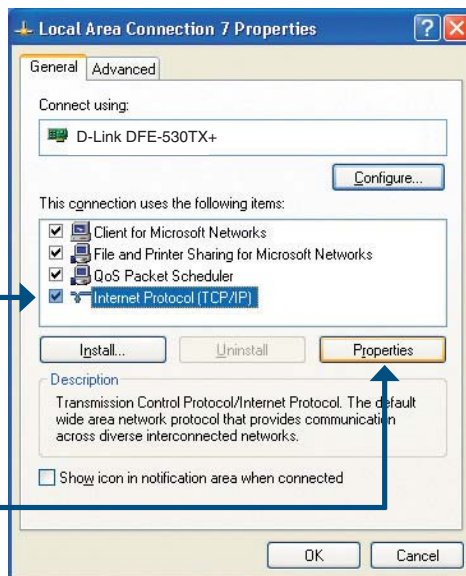## How do I assign a Static IP Address in Windows XP/2000? (continued)

Right-click on **Local Area Connection**.

Click on **Properties**.

Click on **Internet Protocol (TCP/IP).**

Click on **Properties**.

Troubleshooting (continued)

How do I assign a Static IP Address in Windows XP/2000? (continued)

Click the radio button next to **Use the Following IP Address**.

Enter the IP address, subnet mask, and the default gateway. The default gateway is the LAN IP address of your router or gateway).

Select **Use the following DNS server address**.

Enter the LAN IP address of the your router or gateway.

Click **OK**.
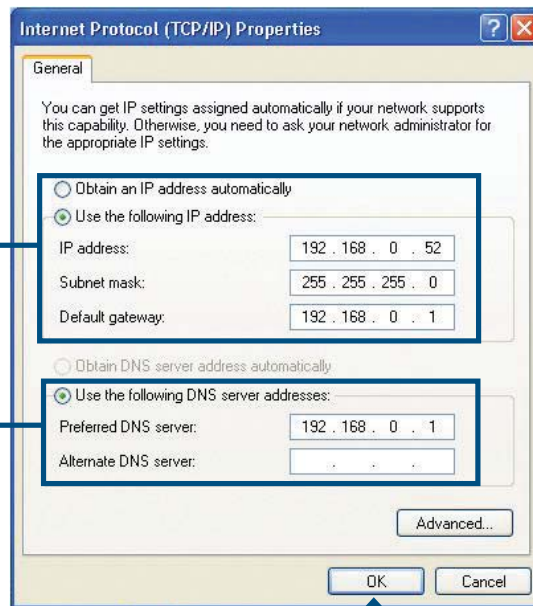
You have completed the assignment of a static IP address in Windows XP/2000!

The IP addresses on your network must be within the same range. For example, if one computer has an IP address of 192.168.0.2, the other computers should have IP addresses such as 192.168.0.3 and 192.168.0.4. The subnet mask must be the same for all the computers on the network.

Troubleshooting (continued)

2. How do I assign a static IP address in Macintosh OSX?

Go to the **Apple Menu** and select **System Preferences.**

Click **Network**.

Select **Built-in Ethernet** in the **Show** pull-down menu.

Select **Manually** in the **Configure** pull-down menu.

Input the static IP address, the subnet mask and the router IP address in the appropriate fields.
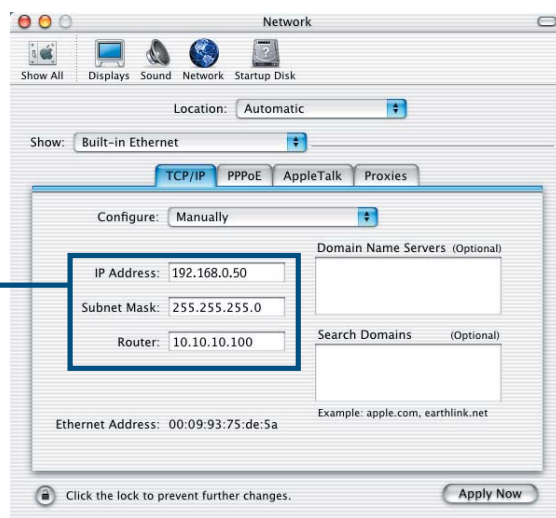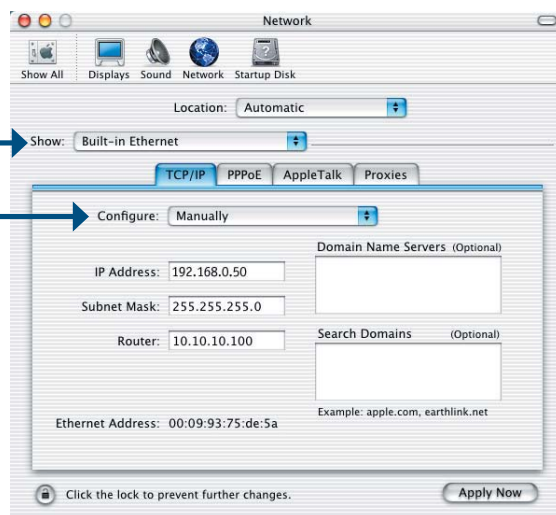
Click **Apply Now**.

You have completed the assignment of a static IP address in Macintosh OS X!

Troubleshooting (continued)

3. Why doesn't the Power LED light up?

Check to see if the DWL-G820 Wireless Gaming Adapter is connected properly to a known good power outlet.

4. Why doesn't the Link LED light up?

- Make sure that the Ethernet cable is connected properly.
- Make sure the AC power adapter is plugged in properly.
- For advanced setup features, enter http://192.168.0.35 into your Internet browser and gain access to the Web configuration of the DWL-G820. The advanced setup features can be used to change the LAN and wireless settings for your DWL-G820.

5. Why can't I connect to another wireless client in Ad-Hoc mode?

- The DWL-G820 Wireless Gaming Adapter has a default SSID of **default**. Make sure that the SSID on the DWL-G820 is exactly the same as the SSID on the other wireless client.
- The DWL-G820 has a default channel of 6. Make sure that the channel on the DWL-G820 is exactly the same as the channel on the other wireless client.

6. Why can't I connect to an access point or wireless router?

- Make sure that the SSID on the DWL-G820 is exactly the same as the SSID on the access point or wireless router.
- Move the DWL-G820 and access point or wireless router into the same room and then test the wireless connection.
- Disable all security settings. (WEP, MAC Address Control, WPA, etc.)
- Turn off your access point and the device connected to the DWL-G820. Then, turn on the access point, and the device connected to the DWL-G820.
- Make sure that the DWL-G820 is set to Infrastructure mode.

7. What can I do if I forget my encryption key?

Reset the access point to its factory default settings and restore the DWL-G820 to its factory default settings. You may do this by pressing the **Reset** button on the back of the unit. You will lose the current configuration settings.

Troubleshooting (continued)

8. Why can't I connect the DWL-G820 to my network?

- Check that the LED indicators for the broadband modem are indicating normal activity. If not, there may be a problem with the broadband connection.

- Check that the LED indicators on the wireless router are functioning properly. 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.

- In **Infrastructure** mode, make sure the same Service Set Identifier (SSID) is specified on the settings for the wireless clients and access points. The SSID factory default setting for D-Link products is **default**.

- In **Ad-Hoc mode**, both wireless clients will need to have the same SSID. Please note that it might be necessary to set up one client to establish a BSS (Basic Service Set) and wait briefly before setting up other clients. This prevents several clients from trying to establish a BSS at the same time, which can result in multiple singular BSSs being established, rather than a single BSS with multiple clients associated to it.

- Check that the **Network Connection** for the wireless client is configured properly. Select **Infrastructure** when connecting to a wireless router and select **Ad-Hoc** mode when connecting without an access point.

- If security is enabled, make sure that the correct encryption key or passphrase is entered on both the DWL-G820 and the wireless router or Ad-Hoc client.

9. 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.

10. Why does my wireless connection drop?

- Antenna orientation – try different antenna orientations for the DWL-G820. 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 all other devices on the 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.

Technical Specifications

Standards
- IEEE 802.11b
- IEEE 802.11g
- IEEE 802.3
- IEEE 802.3u
- IEEE 802.3x

Device Management
- Web-based — Internet Explorer 6.0 or later; Netscape Navigator 7.0 or later; or other Java-enabled browsers
- Telnet

Data Rate[*]

For 802.11g:
- 108, 54, 48, 36, 24, 18, 12, 9 and 6Mbps

For 802.11b:
- 11, 5.5, 2, and 1Mbps

Security
- 64, 128, 152-bit WEP
- WPA-PSK

Wireless Frequency Range
- 2.412GHz to 2.462GHz

Radio and Modulation Type
- BPSK, QPSK, 16QAM, OFDM
- DQPSK, DBPSK and CCK

Receiver Sensitivity:
- 54Mbps OFDM, 10% PER, -66dBm
- 48Mbps OFDM, 10% PER, -71dBm
- 36Mbps OFDM, 10% PER, -76dBm
- 24Mbps OFDM, 10% PER, -80dBm
- 18Mbps OFDM, 10% PER, -83dBm
- 12Mbps OFDM, 10% PER, -85dBm
- 11Mbps CCK, 8% PER, -83dBm
- 9Mbps OFDM, 10% PER, -86dBm
- 6Mbps OFDM, 10% PER, -87dBm
- 2Mbps CCK, 10% PER, -89dBm

Wireless Transmit Power (Typical RF Output Power at each Data Rate):
- +14~15dBm at 54, and 108Mbps
- +14~16dBm at 48Mbps
- +16~18dBm at 36, 24, 18, 9, and 6Mbps
- +14~15dBm at 54, and 108Mbps

* 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.

Technical Specifications (continued)

External Antenna Type:

- Dipole antennas with 2dBi gain

LEDs:

- Power
- WLAN (wireless connection)

Operating Voltage:

- 5V DC +/- 10%

Temperature:

- Operating: 32 F to 104 (0 C to 40 C)
- Storing. -4 F to 149 F (-20 C to 65 C)

Humidity:

- Operating: 10%~90% (non-condensing)
- Storing: 5%~95% (non-condensing)

Certifications:

- FCC
- UL

Dimensions:

- L=4.1 inches (103mm)
- W=2.4 inches (62mm)
- H=1.1 inches (27mm)

Warranty:

- 1 year

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

Tech Support for customers within Canada:

D-Link Technical Support over the Telephone:
(800) 361-5265
Monday to Friday 7:30am to 12:00am EST

D-Link Technical Support over the Internet:
http://support.dlink.ca
email:support@dlink.ca

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.

Disclaimer of Other Warranties: EXCEPT FOR THE LIMITED WARRANTY SPECIFIED HEREIN, THE PRODUCT IS PROVIDED "AS-IS" WITHOUT ANY WARRANTY OF ANY KIND WHATSOEVER INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT. IF ANY IMPLIED WARRANTY CANNOT BE DISCLAIMED IN ANY TERRITORY WHERE A PRODUCT IS SOLD, THE DURATION OF SUCH IMPLIED WARRANTY SHALL BE LIMITED TO NINETY (90) DAYS. EXCEPT AS EXPRESSLY COVERED UNDER THE LIMITED WARRANTY PROVIDED HEREIN, THE ENTIRE RISK AS TO THE QUALITY, SELECTION AND PERFORMANCE OF THE PRODUCT IS WITH THE PURCHASER OF THE PRODUCT.

Limitation of Liability: TO THE MAXIMUM EXTENT PERMITTED BY LAW, D-LINK IS NOT LIABLE UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER LEGAL OR EQUITABLE THEORY FOR ANY LOSS OF USE OF THE PRODUCT, INCONVENIENCE OR DAMAGES OF ANY CHARACTER, WHETHER DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF GOODWILL, LOSS OF REVENUE OR PROFIT, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, FAILURE OF OTHER EQUIPMENT OR COMPUTER PROGRAMS TO WHICH D-LINK'S PRODUCT IS CONNECTED WITH, LOSS OF INFORMATION OR DATA CONTAINED IN, STORED ON, OR INTEGRATED WITH ANY PRODUCT RETURNED TO D-LINK FOR WARRANTY SERVICE) RESULTING FROM THE USE OF THE PRODUCT, RELATING TO WARRANTY SERVICE, OR ARISING OUT OF ANY BREACH OF THIS LIMITED WARRANTY, EVEN IF D-LINK HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE SOLE REMEDY FOR A BREACH OF THE FOREGOING LIMITED WARRANTY IS REPAIR, REPLACEMENT OR REFUND OF THE DEFECTIVE OR NON-CONFORMING PRODUCT. THE MAXIMUM LIABILITY OF D-LINK UNDER THIS WARRANTY IS LIMITED TO THE PURCHASE PRICE OF THE PRODUCT COVERED BY THE WARRANTY. THE FOREGOING EXPRESS WRITTEN WARRANTIES AND REMEDIES ARE EXCLUSIVE AND ARE IN LIEU OF ANY OTHER WARRANTIES OR REMEDIES, EXPRESS, IMPLIED OR STATUTORY.

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.

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment.

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.

D-Link declares that the DWL-G820 (Wireless Gaming Adapter) is limited in CH1~CH11 by specified firmware controlled in the USA.

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 a minimum distance of 20cm between the radiator and your body.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
INFORMATION TO USER:
The user's manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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.

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