D-Link *Air*Plus™ G
DWL-G710
802.11g Wireless Range Extender

Manual

D-Link®
Building Networks for People

Contents

Package Contents

Contents of Package:

- **D-Link *Air*Plus™ G DWL-G710**
  802.11g Wireless Range Extender

- Power Adapter-DC 5V, 2.0A

- Manual on CD

- Quick Installation Guide

- Ethernet Cable

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

Note: Using a power supply with a different voltage rating than the one included with the DWL-G710 will cause damage and void the warranty for this product.

System Requirements for Configuration:

- Computers with Windows, Macintosh, or Linux-based operating systems with an installed Ethernet adapter

- Internet Explorer version 6.0 or Netscape Navigator version 7.0 and above

Introduction

With a maximum wireless signal rate of up to five times the rate of previous wireless devices (up to 54Mbps*), you can work faster and more efficiently, increasing productivity. With the DWL-G710, bandwidth-intensive applications like graphics or multimedia will benefit significantly because large files are able to move across the network quickly.

The D-Link *Air*Plus™ G DWL-G710 Wireless Range Extender can repeat the wireless signal of D-Link *Air*Plus™ G access points and wireless routers to extend the range of your wireless network.

The DWL-G710 is capable of a maximum wireless signal rate of up to 54Mbps when used with other D-Link *Air*Plus™ G products such as the DWL-G510 Wireless PCI Adapter, DWL-G630 Wireless Cardbus Adapter, and the DI-524 Wireless Router.

The DWL-G710 is compatible with most popular operating systems, including Macintosh, Linux and Windows, and can be integrated into a large network.

*Maximum wireless signal rate based on IEEE Standard 802.11g specifications. Actual data throughput will vary. Network conditions and environmental factors lower actual data throughput rate.
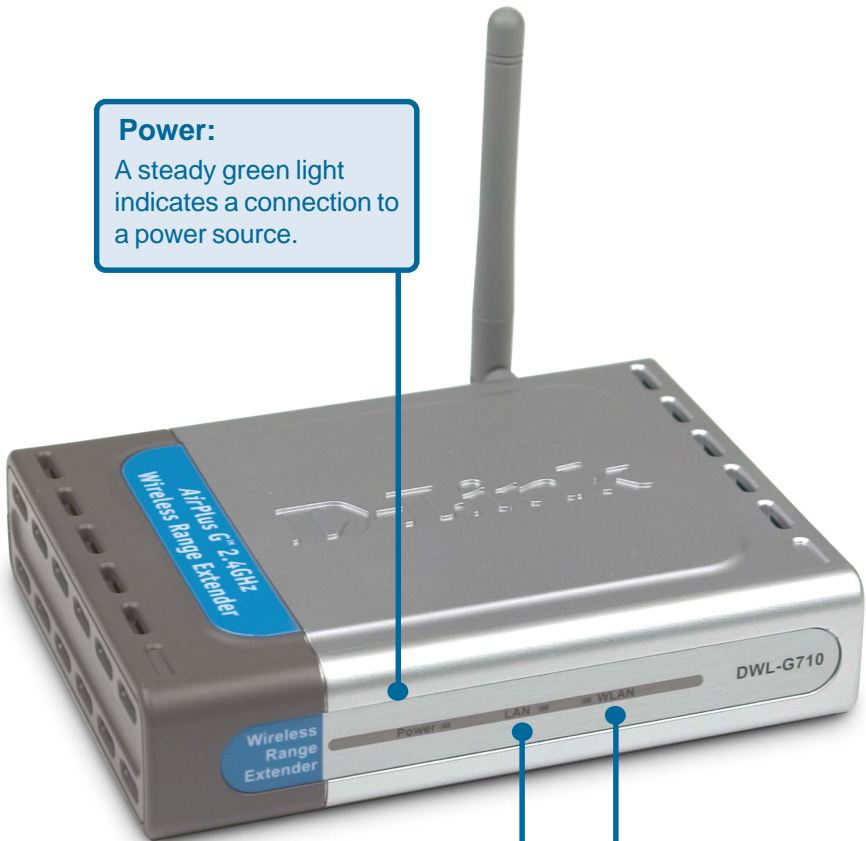
Connections

Pressing the **Reset Button** restores the DWL-G710 to its original factory default settings.

The **LAN Port** is Auto-MDI/MDIX. You can insert either a straight-through or a crossover Ethernet cable in this port in order to connect the DWL-G710 to the local network.

Receptor for the **Power Adapter**

LEDs

LED stands for Light-Emitting Diode. The DWL-G710 Wireless Range Extender has 3 LEDs as shown below:

Power:
A steady green light indicates a connection to a power source.

LAN:
A steady green light indicates a good Ethernet connection.

WLAN:
A steady green light indicates a good wireless connection. A blinking light indicates that the DWL-G710 is receiving/transmitting from/to the wireless network.

Features and Benefits

- Extends the range of your wireless network.

- With a maximum wireless signal rate of up to 54Mbps* with *Air*Plus G Products, the DWL-G710 delivers media rich content such as digital images, videos, and MP3 files much faster than standard 802.11b networks.

- Fully 802.11b compatible – Fully compatible with the IEEE 802.11b standard and interoperable with all existing 802.11b compliant devices.

- Easy setup with the setup wizard.

- Web-based interface for managing and configuring – Easy-to-use interface independent of the operating system.

- Simple configuration with the Site Survey tool. Just click on a network to extend the range of an access point or router in that network. No MAC addresses needed.

- Auto-MDI/MDIX Ethernet port.

*Maximum wireless signal rate based on IEEE Standard 802.11g specifications. Actual data throughput will vary. Network conditions and environmental factors lower actual data throughput rate.

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.

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.

Wireless Basics *(continued)*

The DWL-G710 is compatible, in default mode, with the following wireless products:

- **D-Link *Air*Plus™ G DWL-G510**
  Wireless PCI Adapter used with desktop computers

- **D-Link *Air*Plus™ G DWL-G630**
  Wireless Cardbus Adapter used with laptop computers

- **D-Link *Air*Plus™ G DI-524**
  Wireless Router

- The DWL-G710 is also interoperable with other 802.11g and 802.11b standards-compliant devices.

Standards-Based Technology

The DWL-G710 Wireless Range Extender 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 maximum wireless signal 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** (**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-G710 will automatically sense the best possible connection speed to ensure the greatest speed and range possible.

*Maximum wireless signal rate based on IEEE Standard 802.11g specifications. Actual data throughput will vary. Network conditions and environmental factors lower actual data throughput rate.

Wireless Basics *(continued)*

Installation Considerations

The D-Link *Air*Plus™ G DWL-G710 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-G710 and other network devices to a minimum - each wall or ceiling can reduce your DWL-G710'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 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 RF noise.

Getting Started

On the following pages we will show you an example of an **Infrastructure Network** incorporating the DWL-G710.

An **Infrastructure** network contains an access point or a wireless router. The **Infrastructure Network** example shown on the following page contains the following D-Link network devices (your existing network may be comprised of other devices):

- A wireless range extender -
  D-Link *Air*Plus™ **G DWL-G710**

- A wireless router - **D-Link *Air*Plus**™ **G DI-524**

- A laptop computer with a wireless adapter -
  D-Link *Air*Plus™ **G DWL-G630**

- A desktop computer with a wireless adapter -
  D-Link *Air*Plus™ **G DWL-G510**

- A cable modem - **D-Link DCM-201**

Getting Started (continued)

An example of a wireless Infrastructure network
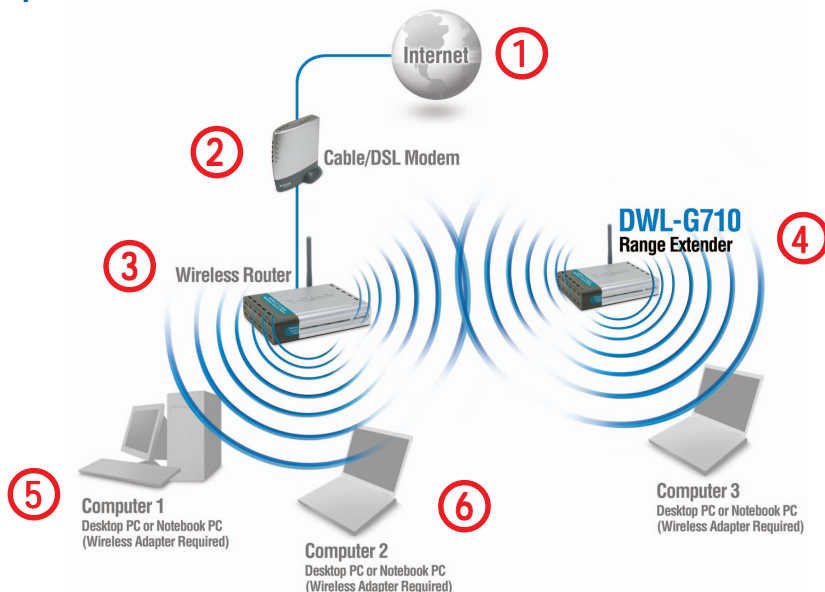
Please remember that **D-Link *Air*Plus™ G** *wireless devices are pre-configured to connect together, right out of the box, with their default settings.*

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-524 router. (*See the printed Quick Installation Guide included with your router.*)

④ Configure the DWL-G710 to communicate with the DI-524 router. (*See the printed Quick Installation Guide included with the DWL-G710.*)

⑤ If you are connecting a desktop computer to your network, install the D-Link *Air*Plus G DWL™-G510 wireless PCI adapter into an available PCI slot on your desktop computer.*
(See the printed Quick Installation Guide included with the network adapter.)

⑥ Install the D-Link DWL-G630 wireless cardbus adapter into a laptop computer. (*See the printed Quick Installation Guide included with the DWL-G630.*)*

Both DWL-G630 and DWL-G510 should be configured to communicate with the DWL-G710, not the router.

Using the Configuration Menu

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-G710. The DWL-G710 default IP address is shown below:

■ Open the Web browser.
■ Type in the **IP address** of the DWL-G710.
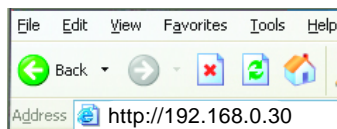
Note: if you have changed the default IP address assigned to the DWL-G710, make sure to enter the correct IP address.

■ 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**.

Home > Wizard

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

Using the Configuration Menu (continued)

Network

LAN IP-   **Dynamic IP Address-** Select this option to receive a dynamic IP address from the DHCP server on your network.

                      Static IP Address- Assign a static IP address to the DWL-G710. This selection is recommended for ease of network configuration.

IP Address- When **Static IP Address** is selected, you will input the static IP address of the DWL-G710 into this field. The IP address must be within the range of the IP addresses in your network.

Subnet Mask- Enter the subnet mask.

Gateway- Enter the IP address of the router in the network.

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

14

Using the Configuration Menu (continued)

Wireless

AP Name -
You may choose to rename your DWL-G710, especially if you have more than one DWL-G710 on your network.

SSID (Service Set Identifier) -
Enter the SSID of the network you wish to repeat.

Site Survey - Click **Site Survey** to receive a list of networks that are available for connection. Please see the screen on the following page for more information on this feature.

Channel - Select the channel from the pulldown menu.
All devices on the network must share the same channel in order to communicate.

WEP - For a level of security, select **Enable Encryption** to use **WEP** (**W**ired **E**quivalent **P**rivacy) on the network. All devices on the network, and the access point, must share the same WEP selection - either **Enable** or **Disable**.

WEP Encryption - Select either 64- or 128-bit length.

WEP Mode - Select **ASCII** or **Hexadecimal** mode and then input the appropriate digits or letters into each Key field. You can create up to 4 keys. Select the key you wish to use.

> **Hexadecimal** digits consist of the numbers 0-9 and the letters A-F
> **ASCII** (American Standard Code for Information Interchange) is a code for representing English letters as numbers from 0-127

TX Rates - Select the transmission rate for the network.

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

Using the Configuration Menu (continued)

Site Survey

Click **Site Survey** in the **Wireless** configuration screen displayed on the previous page.

Scanning

The DWL-G710 will scan the network. Please wait a few seconds for this process to complete.

Scanning...Please wait for 12 seconds.

The Site Survey displays the features of each available network as follows:

SSID- Displays the network name.

Security- Displays the type of security being used, or indicates that security is disabled.

Channel- Indicates the channel the network is using.

Signal%- Displays the signal strength of the network.

Network Type- Indicates the network type: Infrastructure or Ad-Hoc.

The information shown here allows you to select a network to join, or gives you the information you need to configure your DWL-G710 for connection to a specific network.

Site Survey Completed

SSID	Security	Channel	Signal %	Network Type
624A	WEP Enable	1	37	Infrastructure
624nowep	WEP Enable	2	38	Infrastructure
624 Repeat	WEP Enable	1	38	Infrastructure
CCC	WEP Enable	1	72	Infrastructure
IQC_714+	WEP Enable	1	38	Infrastructure
zxcv	WEP Enable	1	48	Infrastructure
2WIRE817	WEP Enable	6	1	Infrastructure
golden	WPA Enable	1	27	Infrastructure
duhfolt	Disabled	6	52	Infrastructure
budlious	WEP Enable	6	15	Infrastructure
624-WPA-PSK	Disabled	6	22	Infrastructure
	WEP Enable	6	34	Infrastructure
default	Disabled	6	47	Infrastructure
G	Disabled	6	0	Infrastructure
dsm320testssid	Disabled	6	24	Infrastructure
default	Disabled	6	22	Infrastructure
pm624	Disabled	6	11	Infrastructure
bg@desk	Disabled	6	1	Infrastructure
default	Disabled	6	8	Infrastructure
B	Disabled	7	0	Infrastructure

Connect   Exit

Using the Configuration Menu (continued)

Admin

Administrator Settings - Change your password in this window. Re-enter the new password to confirm. It can be up to 14 characters in length. Please keep a copy of your password in a safe place.

Click **Apply**, if you have made any changes. Click **Cancel** to clear the changes.

Restore to Factory Default Settings - Click **Restore** to return to **Factory Default Settings**. (You will lose the current settings.)

When you click **Restore**, the dialog box at right will appear. Click **OK** to restore to factory default settings or click **Cancel** to cancel the procedure.

Firmware Upgrade - Upgrade the firmware for the DWL-G710. Find upgrades to the firmware on the D-Link website at http://support.dlink.com. After you have downloaded a firmware upgrade to your local drive, click **Browse.** Select the firmware and click **Apply** to complete the upgrade. *Do not upgrade firmware from a computer with a wireless connection. Doing so may damage the device.*

Apply - Click **Apply** if you have made any changes.

Using the Configuration Menu (continued)

Help
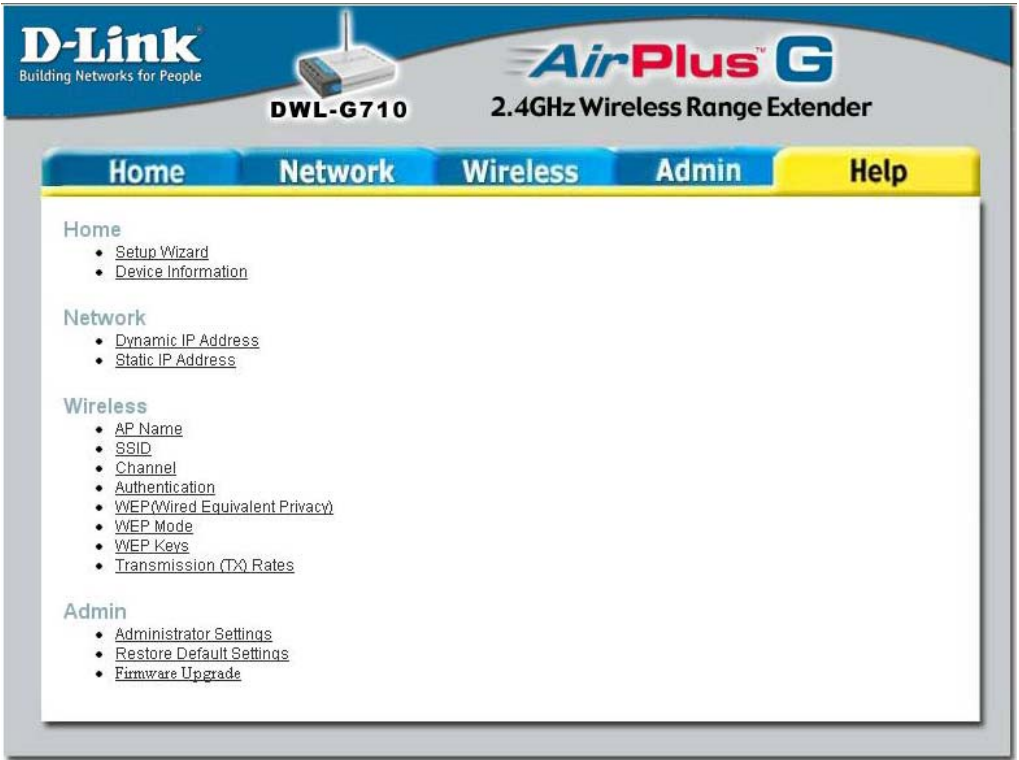
Help Menu - Click on any item in the Help menu for more information.

Networking Basics

Using the Network Setup Wizard in Windows XP

In this section you will learn how to establish a network at home or work, using **Microsoft Windows XP.**

Note: Please refer to websites such as http://www.homenethelp.com and http://www.microsoft.com/windows2000 for information about networking computers using Windows 2000/Me/98SE.

Go to **Start>Control Panel>Network Connections**
Select **Set up a home or small office network**

When this screen appears, click **Next.**

Networking Basics (continued)

Please follow all the instructions in this window:
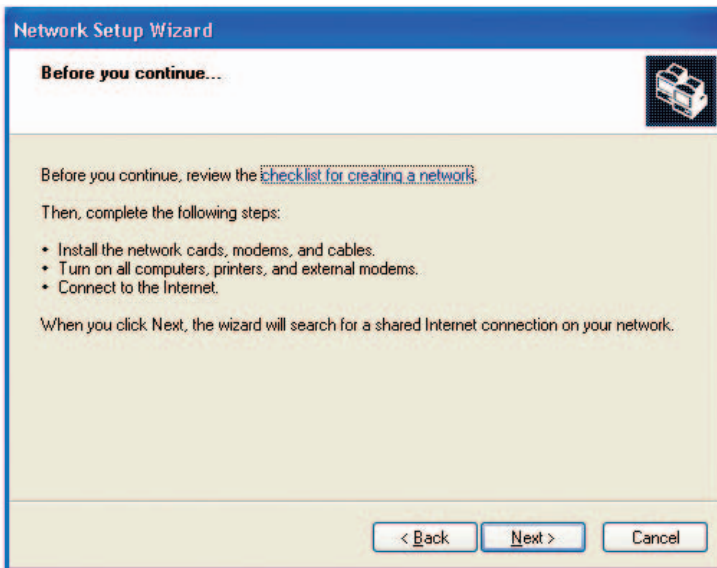
Click **Next**.
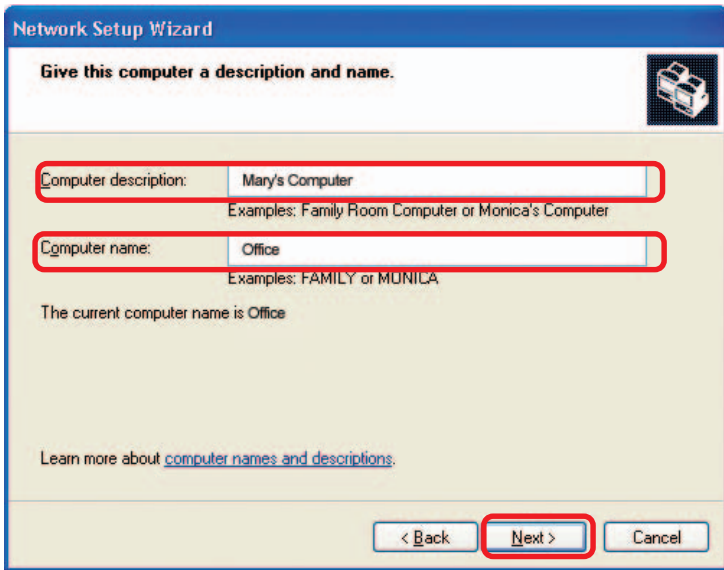
In the following window, select the best description of your computer. If your computer connects to the Internet through a router, select the second option as shown.
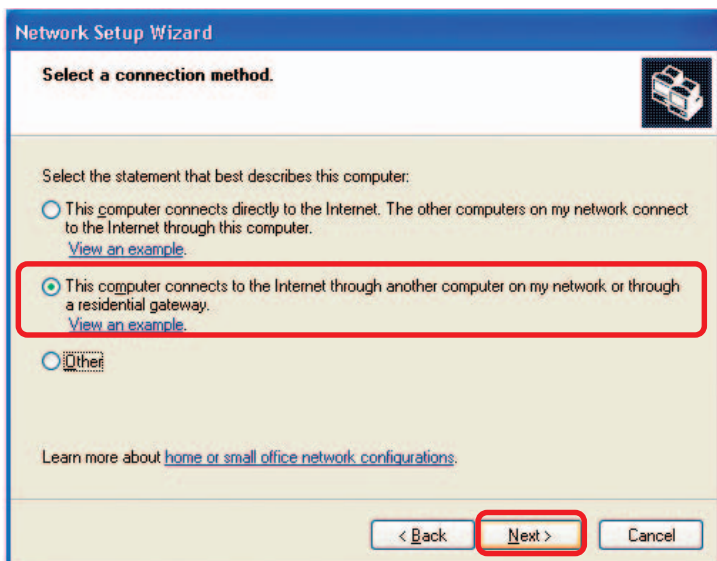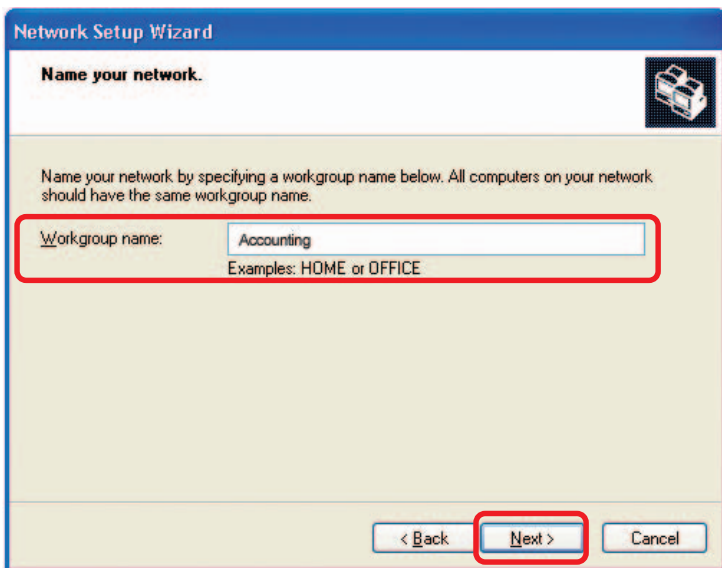

Click **Next**.

Networking Basics (continued)

Enter a **Computer description** and a **Computer name** (optional.)

Click **Nex**t.

Enter a **Workgroup** name. All computers on your network should have the same **Workgroup name.**

Click **Next**.

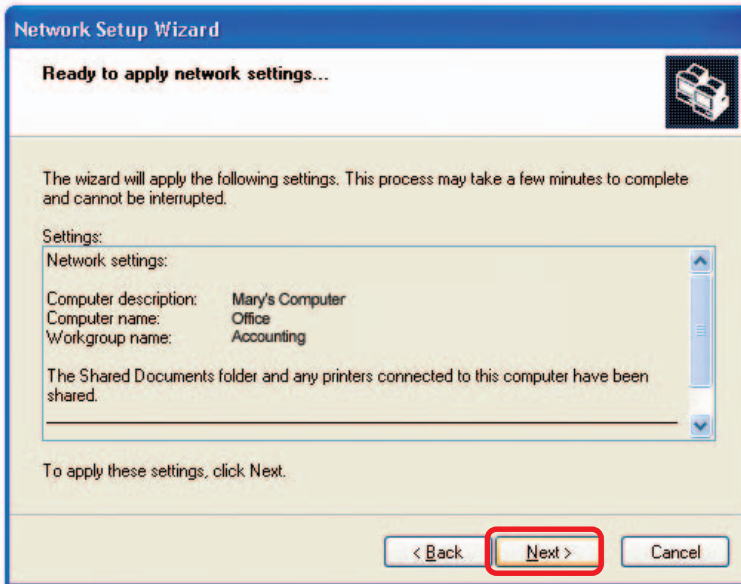# Networking Basics (continued)

Please wait while the **Network Setup Wizard** applies the changes.

When the changes are complete, click **Next**.

Please wait while the **Network Setup Wizard** configures the computer. This may take a few minutes.
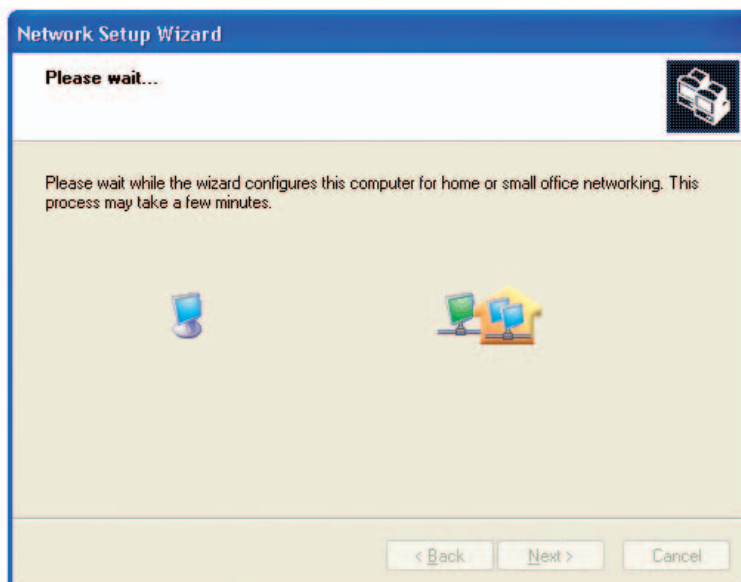
Networking Basics (continued)

In the window below, select the option that fits your needs. In this example, **Create a Network Setup Disk** has been selected. You will run this disk on each of the computers on your network. Click **Next**.
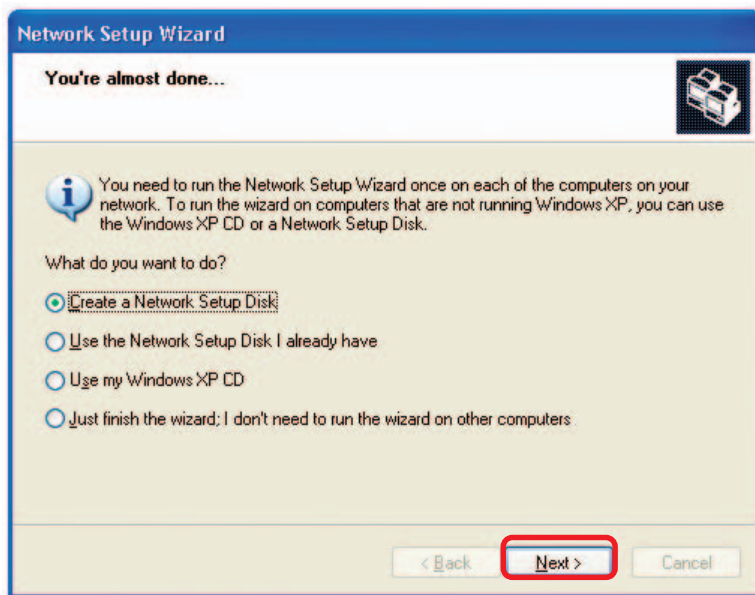
Insert a disk into the Floppy Disk Drive, in this case drive **A.**
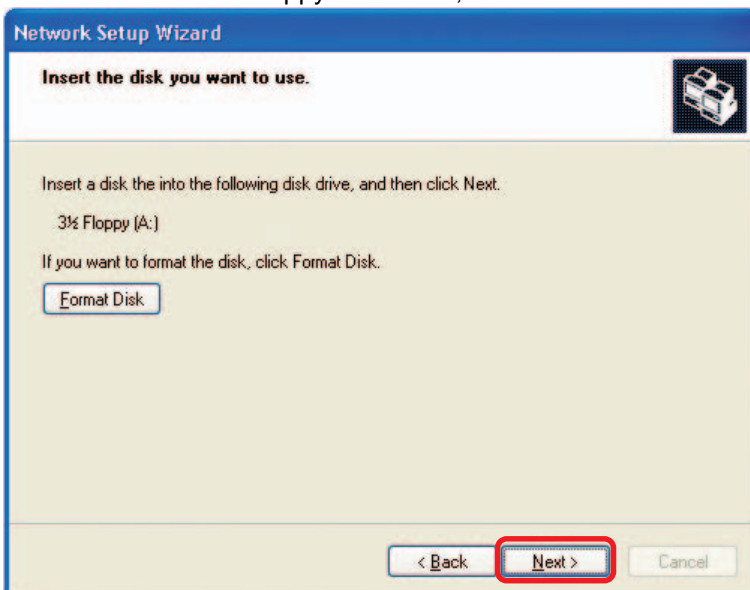
Click **Next**.

Networking Basics (continued)
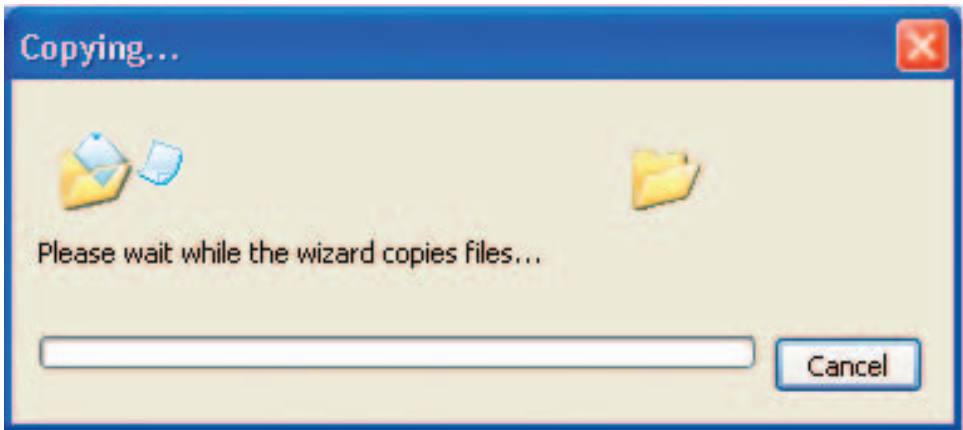
Please read the information under **Here's how** in the screen below. After you complete the **Network Setup Wizard** you will use the **Network Setup Disk** to run the **Network Setup Wizard** once on each of the computers on your network. Click **Next.**
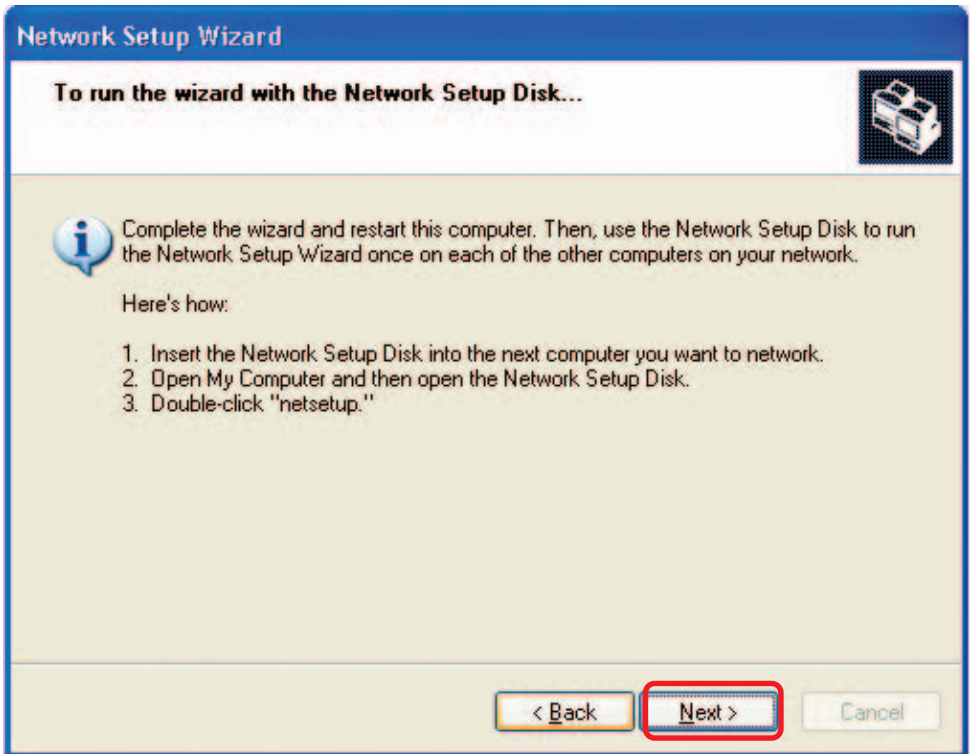
Networking Basics (continued)

Please read the information on this screen, then click **Finish** to complete the
Network Setup Wizard.

Network Setup Wizard

Completing the Network Setup Wizard

You have successfully set up this computer for home or small office networking.

For help with home or small office networking, see the following topics in Help and Support Center:
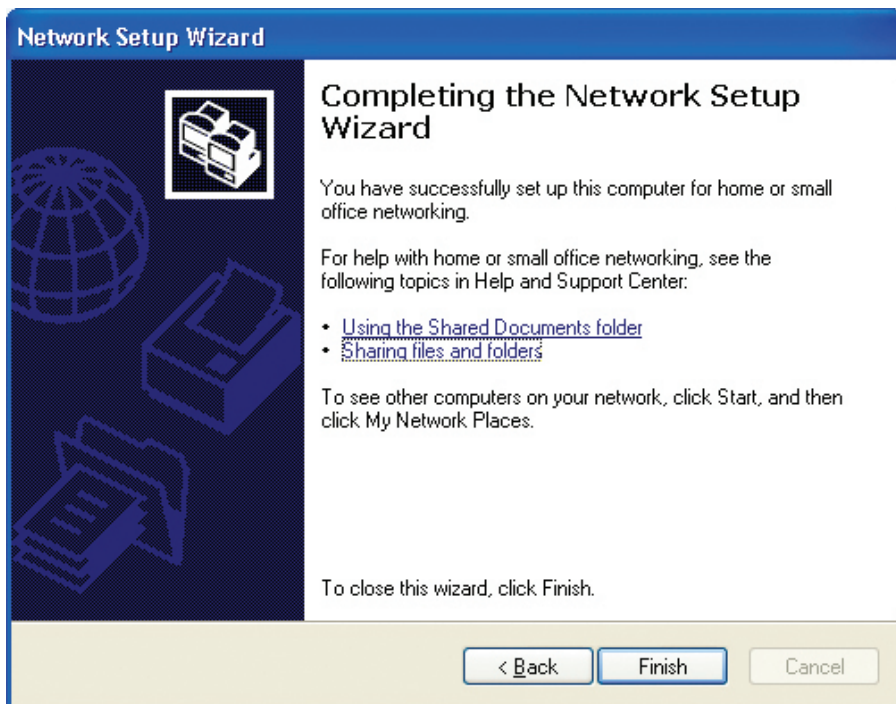
- Using the Shared Documents folder
- Sharing files and folders

To see other computers on your network, click Start, and then click My Network Places.

To close this wizard, click Finish.

< Back | Finish | Cancel

The new settings will take effect when you restart the computer. Click **Yes** to restart
the computer.

System Settings Change

You must restart your computer before the new settings will take effect.

Do you want to restart your computer now?

Yes | No
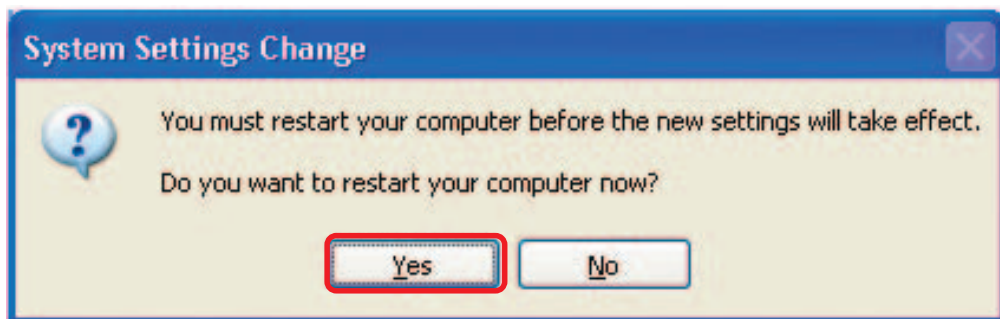
You have completed configuring this computer. Next, you will need to run the **Network
Setup Disk** on all the other computers on your network. After running the **Network
Setup Disk** on all your computers, your new wireless network will be ready to use.

Networking Basics (continued)

Naming your Computer

To name your computer using **Windows XP**, please follow these directions:

- ■ Click **Start** (in the lower left corner of the screen).

- ■ **Right-click** on **My Computer**.

- ■ Select **Properties**.
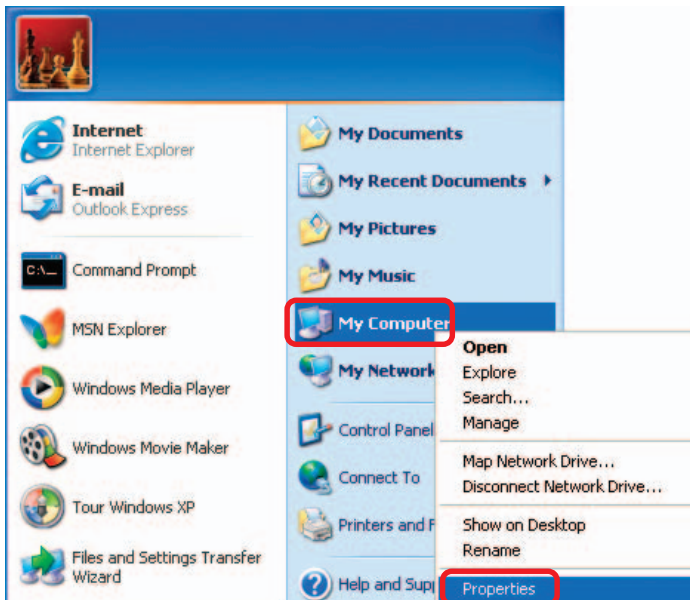
- ■ Select the **Computer Name Tab** in the System Properties window.

- ■ You may enter a **Computer Description** if you wish; this field is optional.

- ■ To rename the computer and join a domain, click **Change**.

Networking Basics (continued)

Naming your Computer (continued)

- In this window, enter the **Computer name**.

- Select **Workgroup** and enter the name of the **Workgroup**.
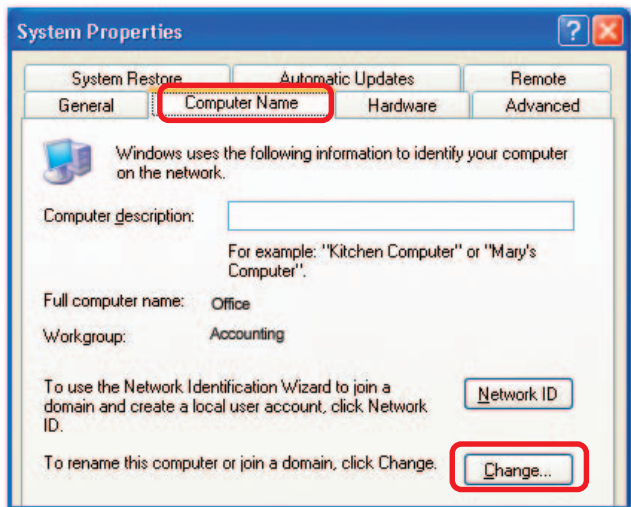
- All computers on your network must have the same **Workgroup** name.

- Click **OK**.
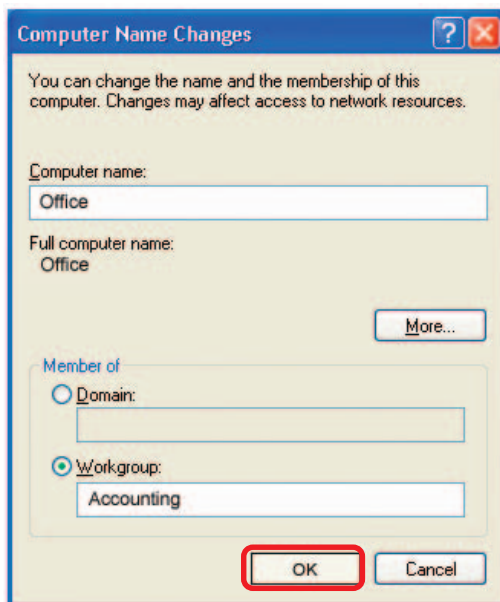
Checking the IP Address in Windows XP

The adapter-equipped computers in your network must be in the same IP address range (see *Getting Started* in this manual for a definition of IP address range.) To check on the IP address of the adapter, please do the following:

- Right-click on the *Local Area Connection icon* in the task bar.

- Click on **Status**.

Networking Basics (continued)

Checking the IP Address in Windows XP

This window will appear.

■ Click the
Support tab.

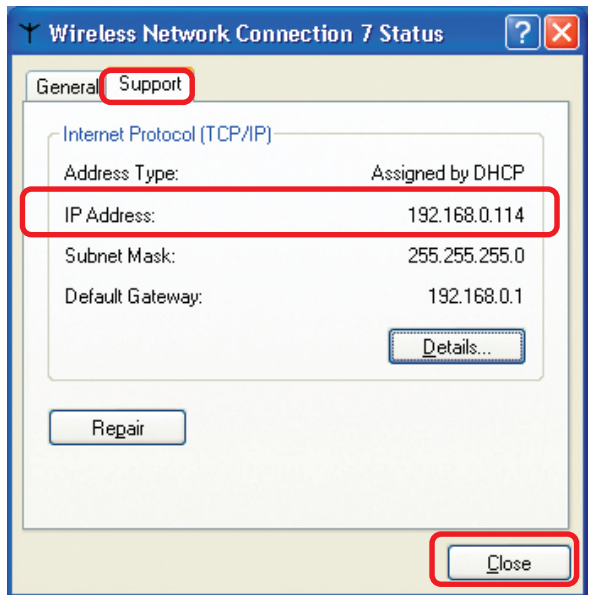| Wireless Network Connection 7 Status	
General **Support**	
Internet Protocol (TCP/IP)	
Address Type:	Assigned by DHCP
IP Address:	192.168.0.114
Subnet Mask:	255.255.255.0
Default Gateway:	192.168.0.1
	Details...
Repair	
	Close

■ Click **Close**.

Assigning a Static IP Address in Windows XP/2000

Note: DHCP-capable 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:

■ Go to **Start**.

■ Double-click on
Control Panel.

Tour Windows XP
Files and Settings Transfer Wizard
Paint

All Programs ▶

Control Panel
Printers and Faxes
Help and Support
Search
Run...

Log Off   Turn Off Computer

start
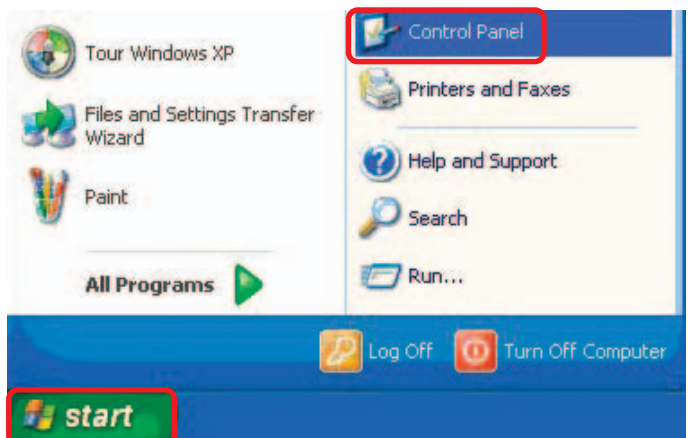
Networking Basics (continued)

Assigning a Static IP Address in Windows XP/2000

■ Double-click on **Network Connections**.
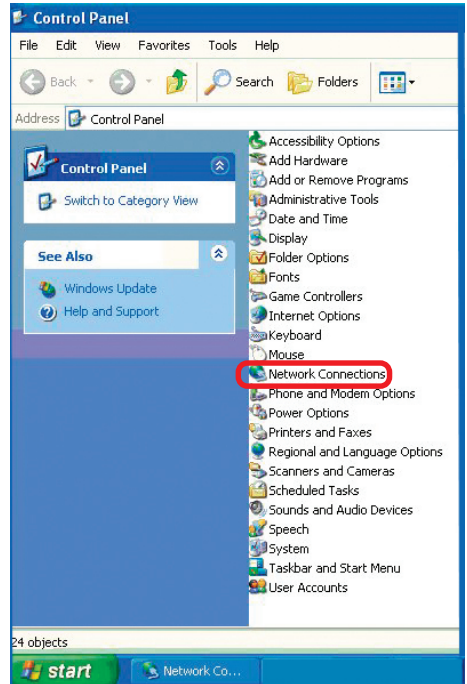
■ Right-click on **Local Area Connections**.

■ Double-click on **Properties**.
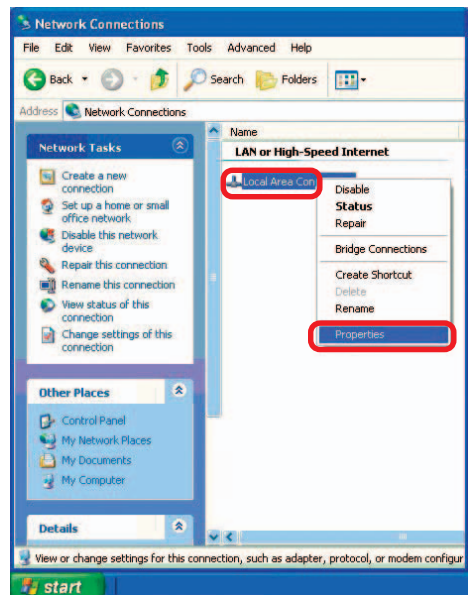
Networking Basics (continued)

Assigning a Static IP Address in Windows XP/2000

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

- ■ Click **Properties**.

- ■ Input your **IP address and subnet mask.** (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 that are sequential, like 192.168.0.3 and 192.168.0.4. The subnet mask must be the same for all the computers on the network.)

- ■ Input your DNS server addresses. (Note: If you are entering a DNS server, you must enter the IP address of the default gateway.)
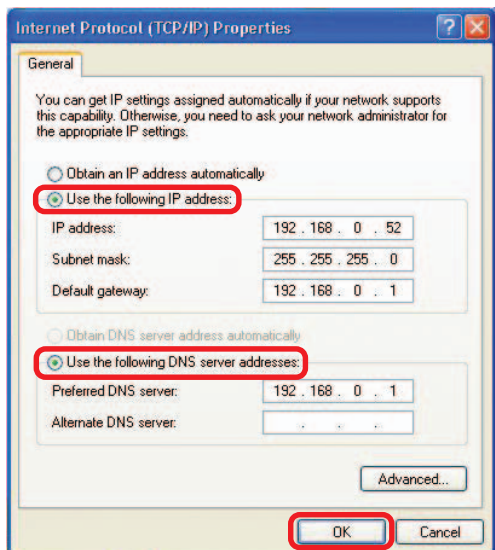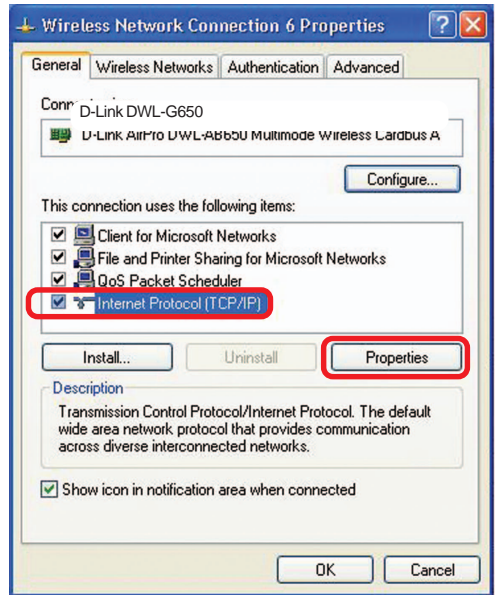
The DNS server information will be supplied by your ISP (Internet Service Provider.)

- ■ Click **OK**.

Networking Basics (continued)
Assigning a Static IP Address with Macintosh OSX

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

- Click on **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**.
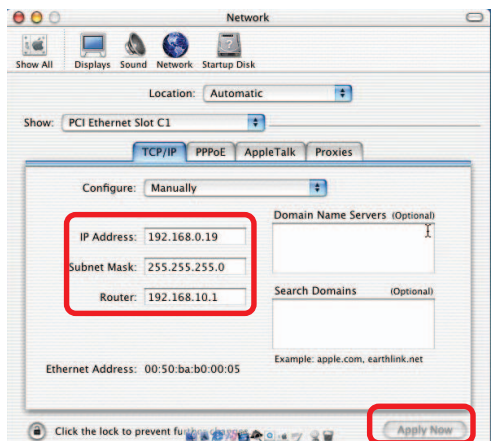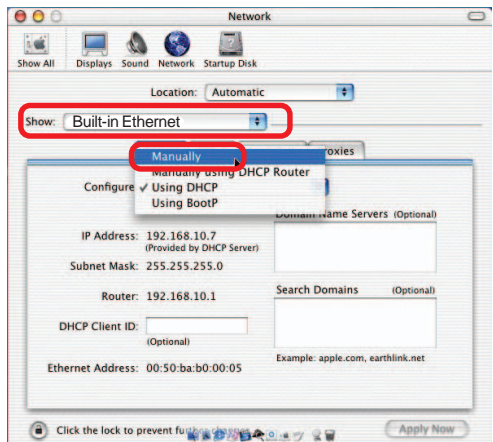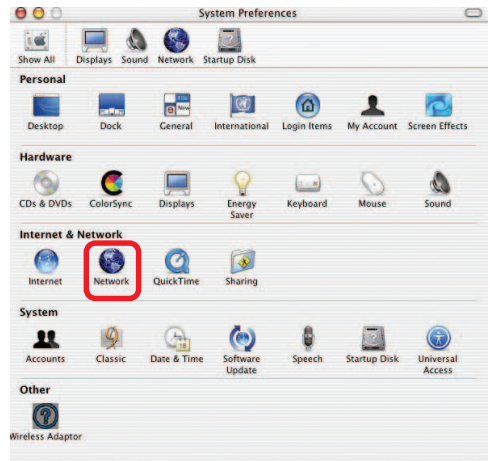
Networking Basics (continued)
Selecting a Dynamic IP Address with <u>Macintosh OSX</u>

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

- ■ Click on **Network**.

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

- ■ Select **Using DHCP** in the **Configure** pull-down menu.

- ■ Click **Apply Now**.

- ■ The **IP Address, Subnet mask**, and the **Router's IP Address** will appear in a few seconds.

Networking Basics (continued)

Checking the Wireless Connection by Pinging in Windows XP/2000

■ Go to **Start** > **Run** >
type **cmd**. A window
similar to this one
will appear. Type
ping
xxx.xxx.xxx.xxx,
where **xxx** is the **IP**
address of the
wireless router or
access point. A good
wireless connection
will show four replies
from the wireless
router or access
point, as shown.


```
F:\WINDOWS\System32\cmd.exe

Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

F:\Documents and Settings\lab3>ping 192.168.0.50

Pinging 192.168.0.50 with 32 bytes of data:

Reply from 192.168.0.50: bytes=32 time<1ms TTL=64
Reply from 192.168.0.50: bytes=32 time<1ms TTL=64
Reply from 192.168.0.50: bytes=32 time<1ms TTL=64
Reply from 192.168.0.50: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.0.50:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

F:\Documents and Settings\lab3>_
```
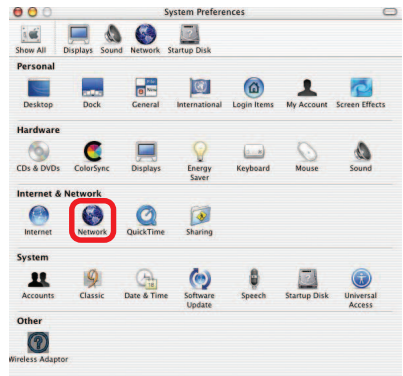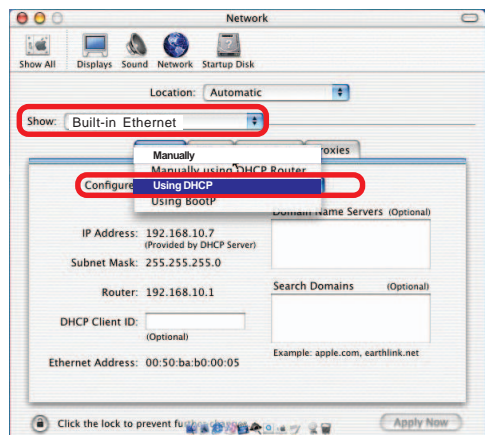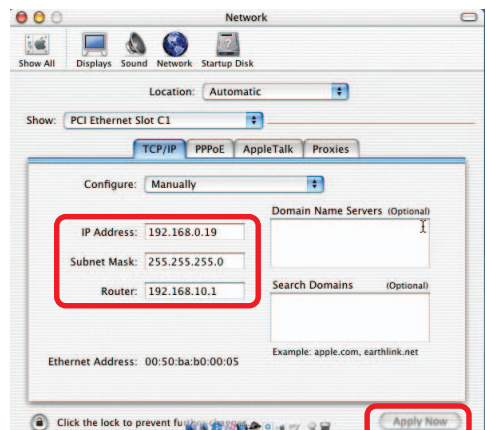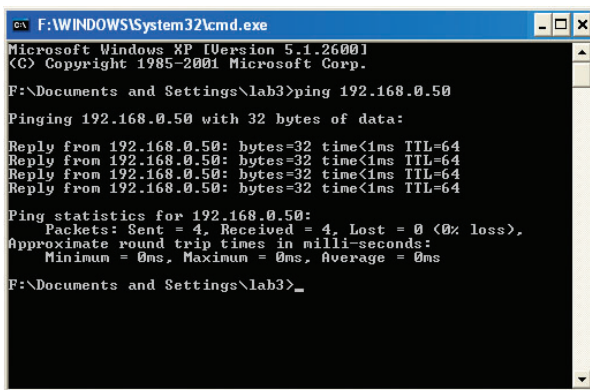
Checking the Wireless Connection by Pinging in Windows Me/98

■ Go to **Start** > **Run**
> type **command**.
A window similar to
this will appear.
Type **ping**
xxx.xxx.xxx.xxx
where **xxx** is the **IP**
address of the
wireless router or
access point. A
good wireless
connection will
show four replies
from the wireless
router or access
point, as shown.


```
MS-DOS Prompt
Auto
C:\WINDOWS\DESKTOP>cd..

C:\WINDOWS>cd..

C:\>ping 192.168.0.1

Pinging 192.168.0.1 with 32 bytes of data:

Reply from 192.168.0.1: bytes=32 time<10ms TTL=64
Reply from 192.168.0.1: bytes=32 time<10ms TTL=64
Reply from 192.168.0.1: bytes=32 time<10ms TTL=64
Reply from 192.168.0.1: bytes=32 time<10ms TTL=64

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

C:\>_
```
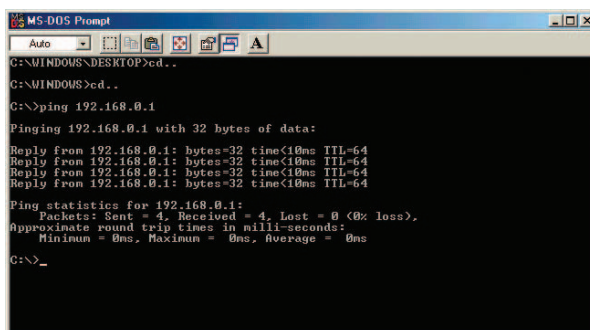
Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the DWL-G710 Wireless Range Extender. We cover various aspects of the network setup, including the network adapters. Please read the following if you are having problems.
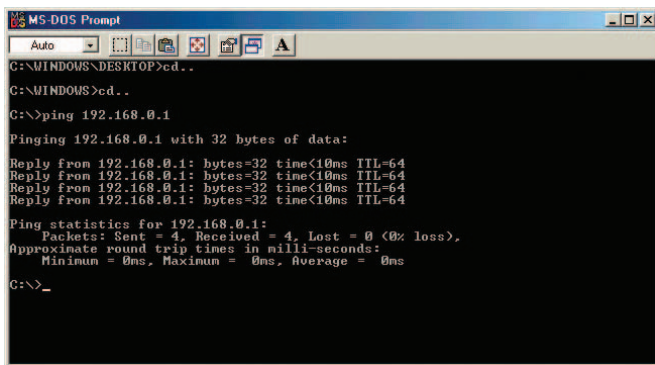
> *Note: It is recommended that you use an Ethernet connection to configure the DWL-G710 Wireless Range Extender.*

1.The computer used to configure the DWL-G710 cannot access the configuration menu.

- Check that the **Ethernet LED** on the DWL-G710 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 DWL-G710. Please see ***Checking the IP Address in Windows XP*** in the **Networking Basics** section of this manual.

Note: The IP address of the DWL-G710 is 192.168.0.30. 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 DWL-G710 is responding. Go to **Start**>**Run**>Type **Command**>Type **ping 192.168.0.30.** 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 DWL-G710.

Troubleshooting (continued)

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

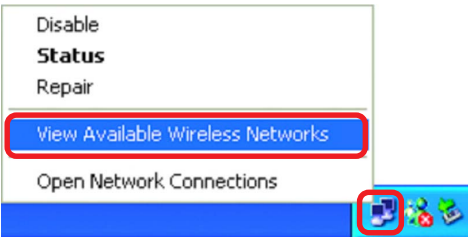Make sure the wireless client is associated and joined with the correct device. To check this connection: **Right-click** on the **local area connection icon** in the taskbar> select **View Available Wireless Networks**. The **Connect to Wireless Network** screen will appear. Please make sure you have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

- Check that the **IP address** assigned to the wireless adapter is within the same **IP address range** as the existing network. *(Since the DWL-G710 has an IP address of 192.168.0.30, 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.**)*

Troubleshooting (continued)

2. The wireless client cannot access the Internet in the Infrastructure mode *(continued).*

- ■ Please note that the DWL-G710 is compatible with the following D-Link devices:

    1 D-Link *Air*Plus™ G DI-524 Wireless Router

    2 D-Link *Air*Plus™ G DWL-G700AP Wireless Access Point

    3 D-Link *Air*Plus™ G DWL-G710 Wireless Range Extender

- ■ If you wish to repeat a device that is not a D-Link product, please check the FAQs for supported products on the D-Link support website (http://support.dlink.com) to make certain that the device can be repeated by the DWL-G710.

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**.
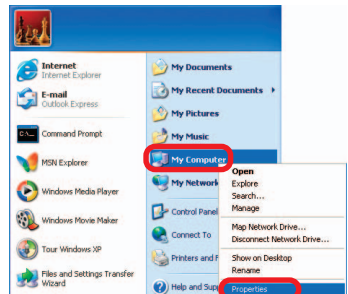
- ■ Select the **Hardware** tab.
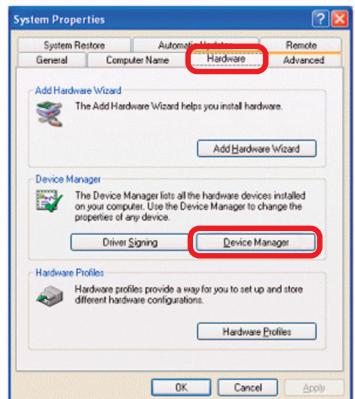
- ■ Click **Device Manager**.

Troubleshooting (continued)

■ Double-click on **Network Adapters**.

■ Right-click on **D-Link** *Air***Plus™ G DWL-G630 Wireless Cardbus Adapter** (In this example we use the DWL-G630; 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**.
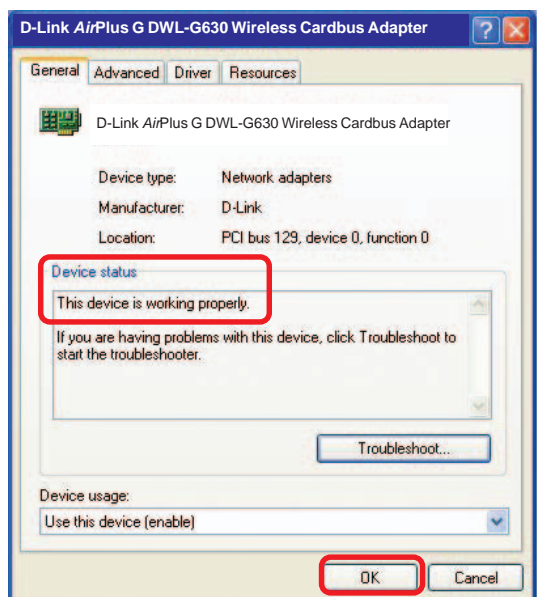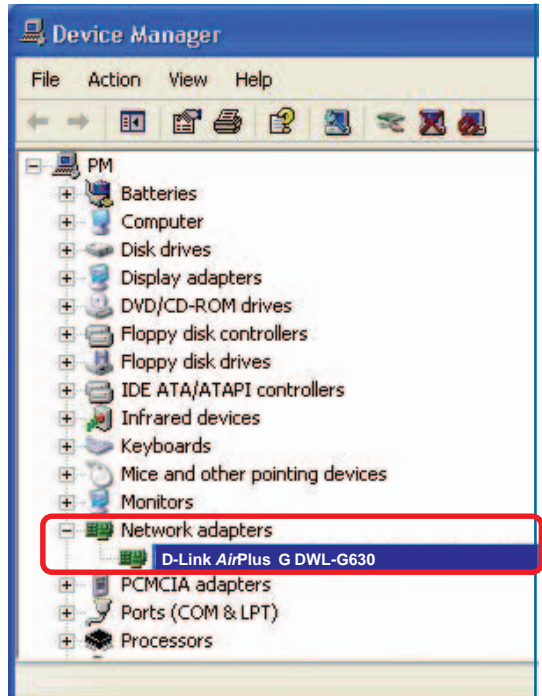
Troubleshooting (continued)

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 DWL-G710. 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 DWL-G710, you must also enable encryption on all wireless clients in order to establish a wireless connection.

- Make sure that the encryption bit level is the same on the DWL-G710 and the wireless client.

- Make sure that the SSID on the DWL-G710 and the wireless client are exactly the same. If they are not, wireless connection will not be established.

- Check that the DWL-G710 is configured properly.

- Check that the wireless clients are working properly.

Troubleshooting (continued)

6. Why can't I get a wireless connection? (continued)

■ Make sure that all devices are set to **Infrastructure** mode.

■ Check that the LEDs are indicating normal activity. If not, check that the AC power and Ethernet cables are firmly connected.

■ Check that the IP address, subnet mask, and gateway 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 DWL-G710, 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 DWL-G710 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.

Troubleshooting (continued)

8. Resetting the DWL-G710 to factory default settings

After you have tried other methods for troubleshooting your network, you may choose to **Reset** the DWL-G710 to the factory default settings.
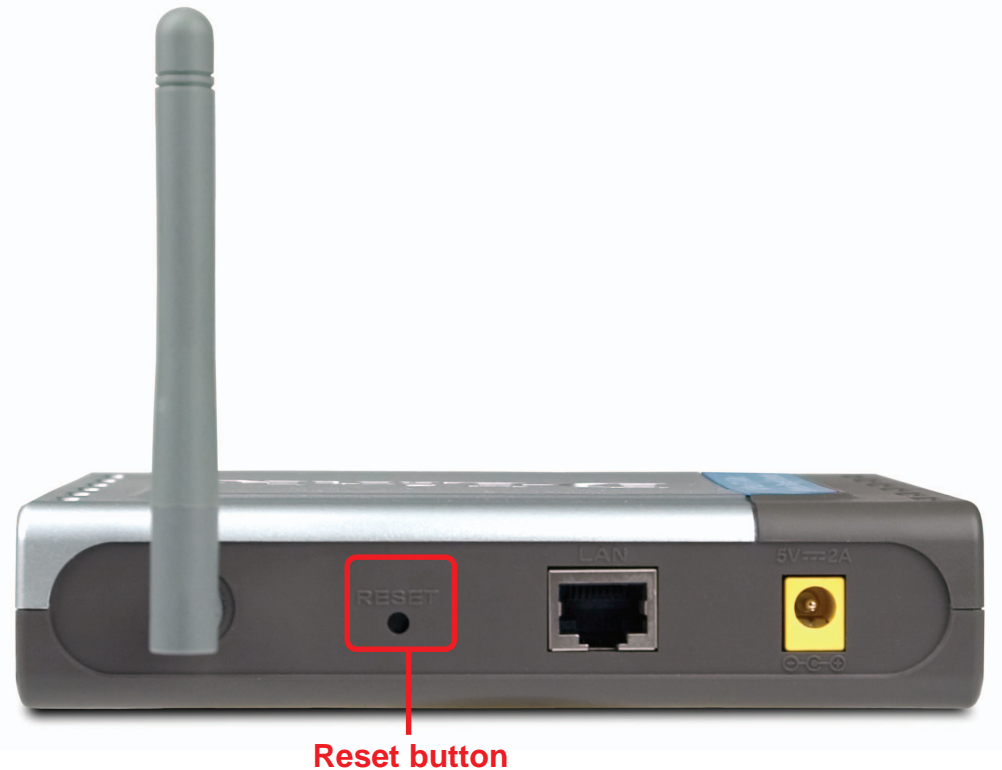
Reset button

To hard-reset the D-Link DWL-G710 to the factory default settings, please do the following:

- ◾ Locate the **Reset** button on the back of the DWL-G710.

- ◾ Use a paper clip to press the **Reset** button.

- ◾ Hold for about 5 seconds and then release.

- ◾ After the DWL-G710 reboots (this may take a few minutes) it will be reset to the factory **Default** settings.

Technical Specifications

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

Device Management
- Web-Based – Internet Explorer v6 or later; Netscape Navigator v7 or later

Data Rate
For 802.11g:
- 54, 48, 36, 24, 18, 12, 9 and 6Mbps
For 802.11b:
- 11, 5.5, 2, and 1Mbps

Security
- 64-, 128-bit WEP

Wireless Frequency Range
- 2.412GHz to 2.462GHz

Wireless Operating Range*
802.11g (Full Power with 2dBi gain diversity dipole antenna)
Outdoors:
- 164ft (50m) @ 54Mbps
- 492ft (150m) @ 36Mbps
- 656ft (200m) @ 11Mbps

Power
- External Power Supply: DC 5V/2A

* Environmental Factors may Adversely Affect Wireless Range

Technical Specifications (continued)

Radio and Modulation Type
For 802.11g:
OFDM:
• BPSK @ 6 and 9Mbps
• QPSK @ 12 and 18Mbps
• 16QAM @ 24 and 36Mbps
• 64QAM @ 48 and 54Mbps
DSSS:
• DBPSK @ 1Mbps
• DQPSK @ 2Mbps
• CCK @ 5.5 and 11Mbps
For 802.11b:
DSSS:
• DBPSK @ 1Mbps
• DQPSK @ 2Mbps
• CCK @ 5.5 and 11Mbps

Wireless Transmit Power
Typical RF Output Power at each Data Rate
For 802.11g:
• 31mW (15dBm) @ 54Mbps
• 40mW (16dBm) @ 48Mbps
• 40mW (16dBm) @ 36, 24, 18, 12, 9, and 6Mbps
For 802.11b:
• 50mW (17dBm) @ 11, 5.5, 2, and 1Mbps

Receiver Sensitivity
For 802.11g:
• 6Mbps: -82dBm
• 9Mbps: -81dBm
• 12Mbps: -79dBm
• 18Mbps: -77dBm
• 24Mbps: -74dBm
• 36Mbps: -70dBm
• 48Mbps: -66dBm
• 54Mbps: -65dBm
For 802.11b:
• 1Mbps: -87dBm
• 2Mbps: -87dBm
• 5.5Mbps: -85dBm
• 11Mbps: -82dBm

Technical Specifications (continued)

LEDs
• Power
• LAN
• WLAN

Temperature
• Operating: 32ºF to 131ºF (0ºC to 55ºC)
• Storing: -4ºF to 149ºF (-20ºC to 65ºC)

Humidity
• 5%~95% (non-condensing)

Certifications
• FCC
• UL

Dimensions
• L = 5.59 inches (142mm)
• W = 4.29 inches (109mm)
• H = 1.22 inches (31mm)

Weight
• 0.44lbs (200g)

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 9:00pm EST

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

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.

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.

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

Register your D-Link product online at http://support.dlink.com/register/

(09/20/04)