

D-Link *AirPlus*[™] G
DWL-G710
802.11g Wireless Range Extender

Manual

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Package Contents



Contents of Package:

- **D-Link AirPlus™ 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.

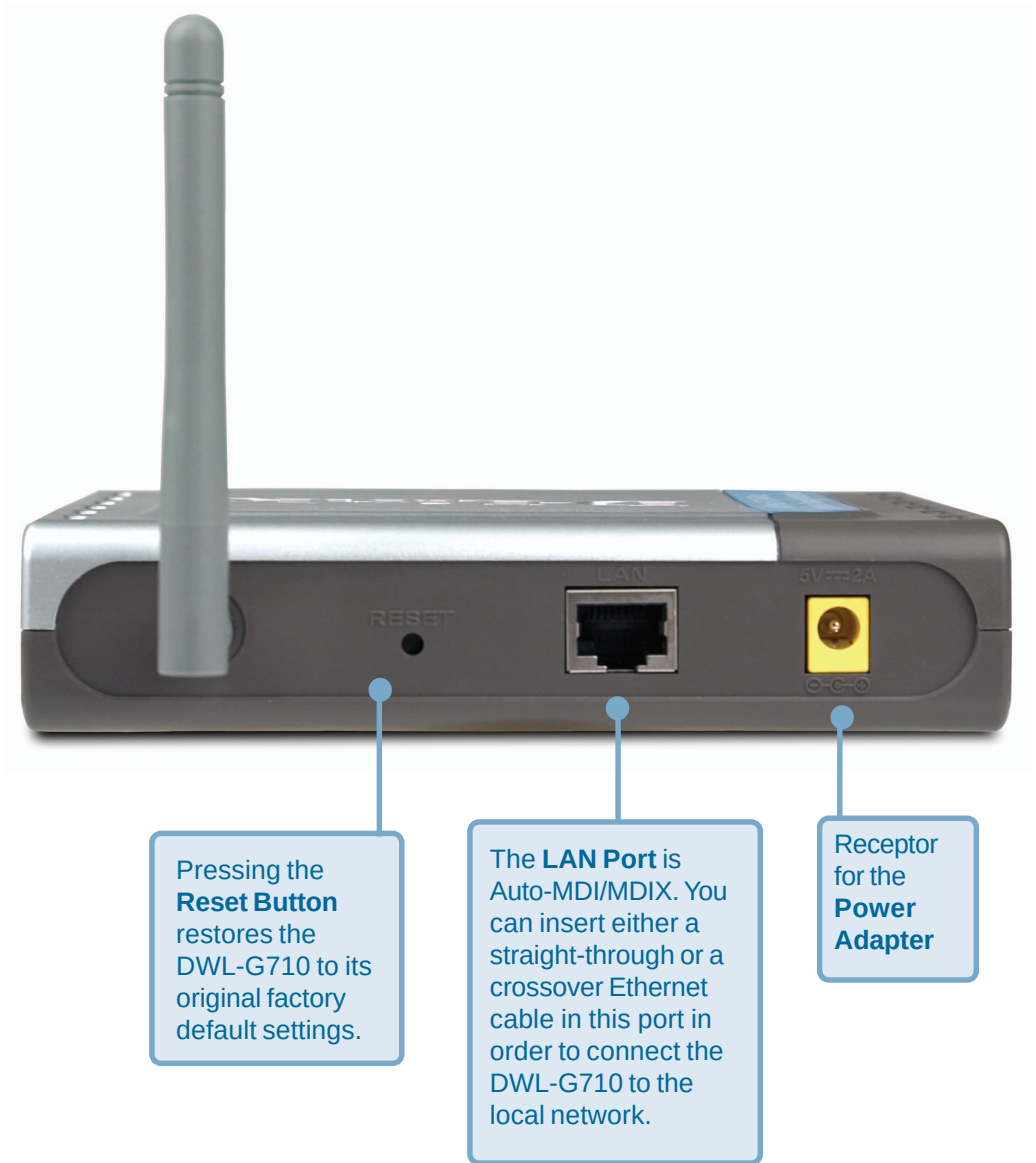
The D-Link *AirPlus™ G* DWL-G710 Wireless Range Extender can repeat the wireless signal of D-Link *AirPlus™ G* access points and wireless routers to extend the range of your wireless network.

The DWL-G710 is capable of a maximum wireless signal rate of up to 54Mbps when used with other D-Link *AirPlus™ 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.

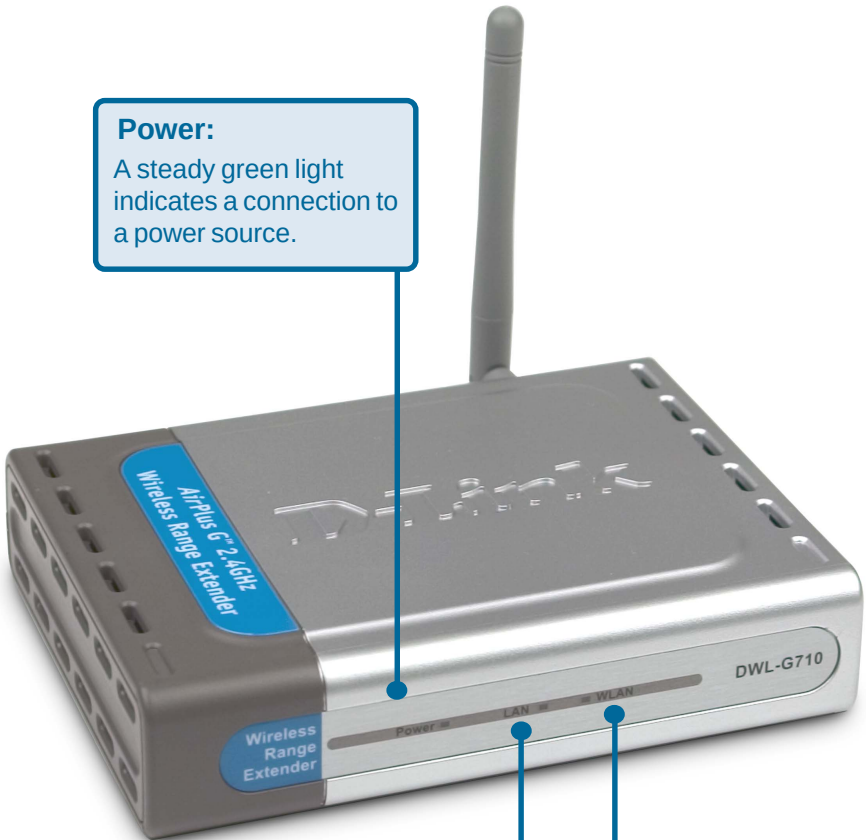
*Maximum wireless signal rate based on IEEE Standard 802.11g specifications. Actual data throughput will vary. Network conditions and environmental factors lower actual data throughput rate.

Connections



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 *AirPlus 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 AirPlus™ G DWL-G510**
Wireless PCI Adapter used with desktop computers
- **D-Link AirPlus™ G DWL-G630**
Wireless Cardbus Adapter used with laptop computers
- **D-Link AirPlus™ 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 (Orthogonal Frequency Division Multiplexing)** technology. **OFDM** works by splitting the radio signal into multiple smaller sub-signals that are then transmitted simultaneously at different frequencies to the receiver. **OFDM** reduces the amount of **crosstalk** (interference) in signal transmissions. The 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 AirPlus™ 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

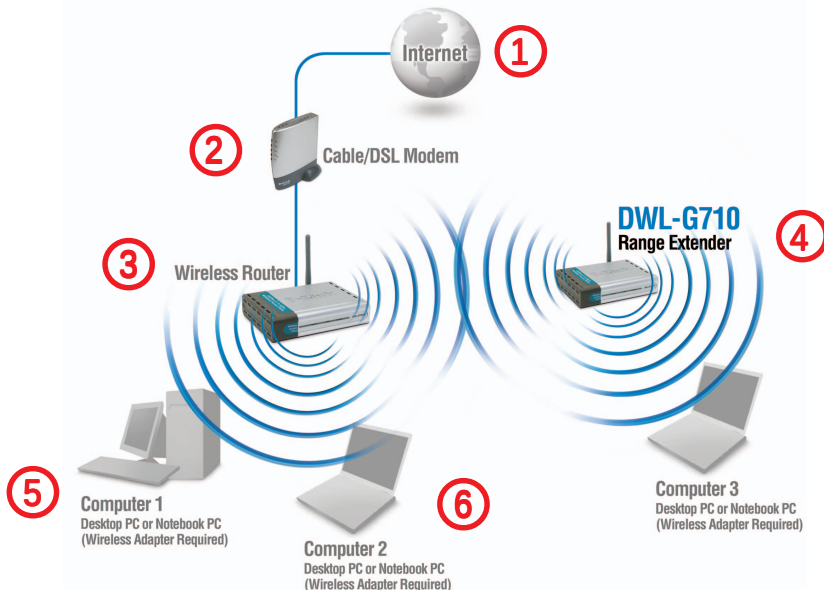
On the following pages we will show you an example of an **Infrastructure Network** incorporating the DWL-G710.

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 AirPlus™ G DWL-G710**
- A wireless router - **D-Link AirPlus™ G DI-524**
- A laptop computer with a wireless adapter - **D-Link AirPlus™ G DWL-G630**
- A desktop computer with a wireless adapter - **D-Link AirPlus™ 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 AirPlus™ 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:

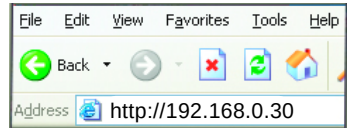
- 1** You will need broadband Internet access (a cable or DSL-subscriber line into your home or office).
- 2** Consult with your cable or DSL provider for proper installation of the modem.
- 3** Connect the cable or DSL modem to the DI-524 router. (See the printed Quick Installation Guide included with 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 AirPlus 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

The screenshot shows the configuration interface for a D-Link DWL-G710 2.4GHz Wireless Range Extender. The top navigation bar includes 'Home', 'Network' (selected), 'Wireless', 'Admin', and 'Help'. The 'IP Address Settings' section is active, showing options for 'LAN IP'. Under 'LAN IP', there are two radio buttons: 'Dynamic IP Address' (unselected) and 'Static IP Address' (selected). Below these are four input fields for IP configuration: 'IP Address' (192, 168, 0, 30), 'Subnet Mask' (255, 255, 255, 0), and 'Gateway' (0, 0, 0, 0). At the bottom right, there are three buttons: 'Apply' (green checkmark), 'Cancel' (orange X), and 'Help' (red plus).

- 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.

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.

The screenshot shows the configuration interface for a D-Link AirPlus G DWL-G710 2.4GHz Wireless Range Extender. The 'Wireless' tab is selected, showing the 'Wireless Settings' section. The 'AP Name' is set to 'DWL-G710'. The 'SSID' is set to 'default', with a 'Site Survey' button next to it. The 'Channel' is set to '6'. The 'WEP' section has 'Disabled' selected, with 'Enabled' as an option. The 'WEP Encryption' is set to '64Bit', and the 'WEP Mode' is set to 'HEX'. There are four 'Key' fields (Key1, Key2, Key3, Key4) with radio buttons for selection. The 'TX Rates' are set to 'Auto (Mbps)'. At the bottom right, there are three buttons: 'Apply' (with a green checkmark), 'Cancel' (with a red X), and 'Help' (with a red plus sign).

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 (Wired Equivalent Privacy)** 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)

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

Site Survey



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

Scanning



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

DWL-G710 Site Survey				
SSID	Security	Channel	Signal %	Network Type
☐ 624A	WEP Enable	1	37	Infrastructure
☐ 624aowep	WEP Enable	2	38	Infrastructure
☐ 624Repeat	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
☐ budious	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
☐ dm320testssid	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

Using the Configuration Menu (continued)

Admin

The screenshot shows the D-Link configuration interface for the DWL-G710 2.4GHz Wireless Range Extender. The top navigation bar includes 'Home', 'Network', 'Wireless', 'Admin' (selected), and 'Help'. The 'Admin' tab is highlighted in yellow. Below the navigation bar, the 'Administrator Settings' section contains two password input fields (one for 'New Password' and one for 'Confirm Password'), each with a 14-character dotted mask, and 'Apply' and 'Cancel' buttons. The 'System Settings' section has a 'Restore to Factory Default Settings' checkbox and a 'Restore' button. The 'Firmware Upgrade' section displays the 'Current Firmware Version: 1.0' and 'Firmware Date: Sep 3 2004 14:56:42', along with a file input field and a 'Browse...' button. At the bottom right, there are three circular icons: a green checkmark for 'Apply', an orange 'X' for 'Cancel', and a red plus sign for 'Help'.

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.

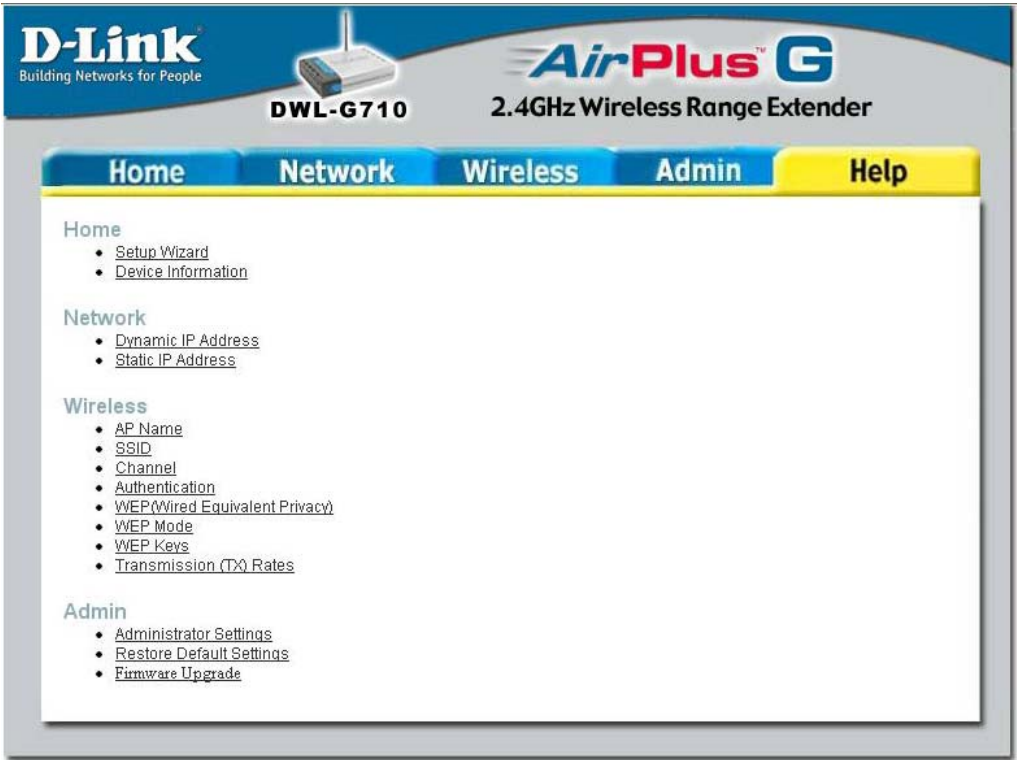


Firmware Upgrade - Upgrade the firmware for the DWL-G710. Find upgrades to the firmware on the D-Link website at <http://support.dlink.com>. After you have downloaded a firmware upgrade to your local drive, click **Browse**. Select the firmware and click **Apply** to complete the upgrade. **Do not upgrade 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**

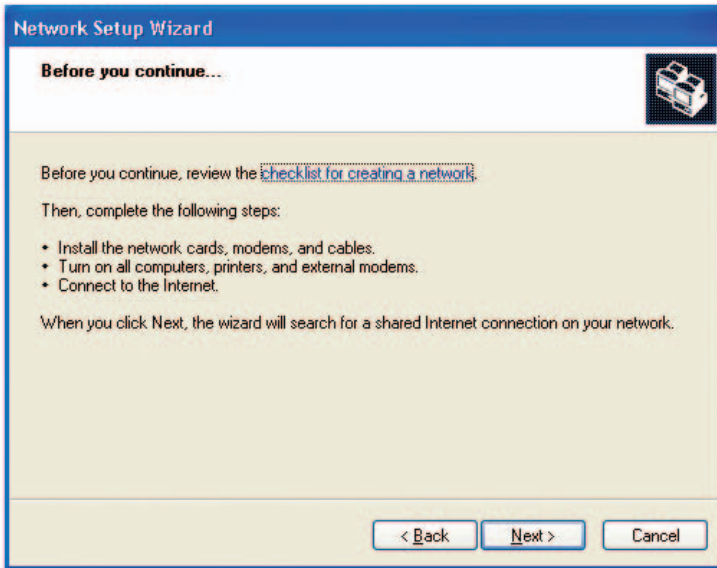
Select **Set up a home or small office network**



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

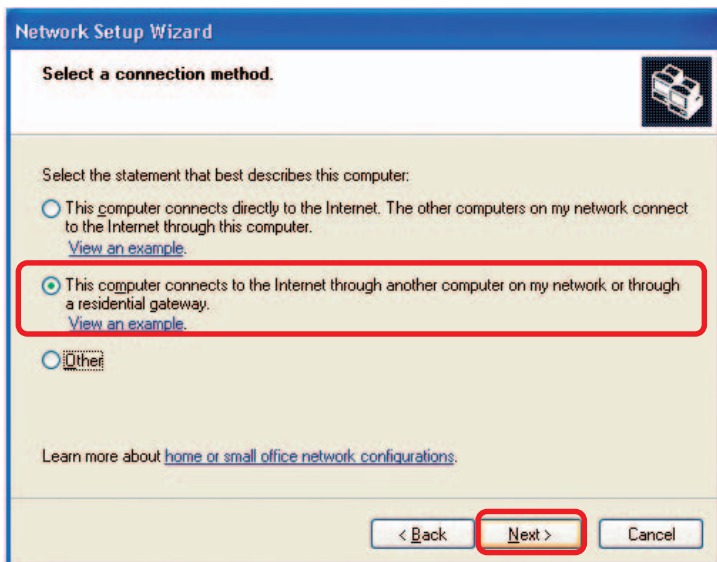
Networking Basics (continued)

Please follow all the instructions in this window:



Click **Next**.

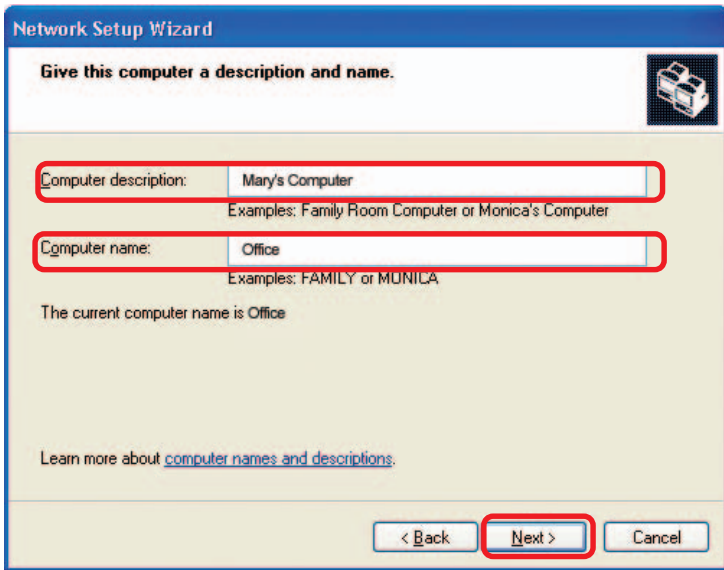
In the following window, select the best description of your computer. If your computer connects to the Internet through a router, select the second option as shown.



Click **Next**.

Networking Basics (continued)

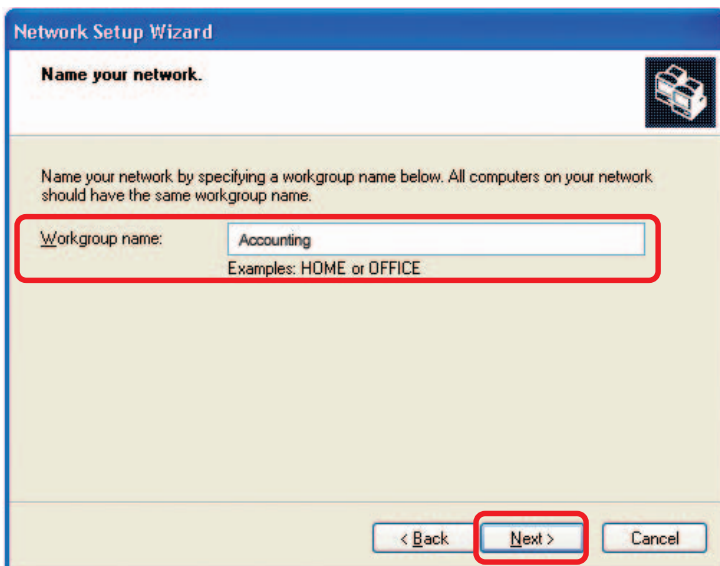
Enter a **Computer description** and a **Computer name** (optional.)



The screenshot shows the 'Network Setup Wizard' window with the title 'Give this computer a description and name.' The window has a blue header bar with a printer icon in the top right. Below the title bar, there are two text input fields. The first field is labeled 'Computer description:' and contains the text 'Mary's Computer'. Below this field, there is a line of text that reads 'Examples: Family Room Computer or Monica's Computer'. The second field is labeled 'Computer name:' and contains the text 'Office'. Below this field, there is a line of text that reads 'Examples: FAMILY or MONICA'. Below the input fields, there is a line of text that reads 'The current computer name is Office'. At the bottom of the window, there are three buttons: '< Back', 'Next >', and 'Cancel'. The 'Next >' button is highlighted with a red rectangle.

Click **Next**.

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

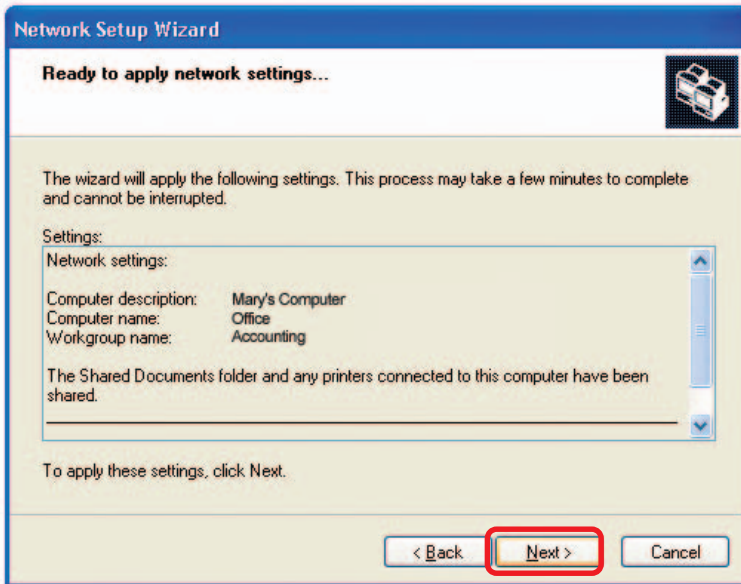


The screenshot shows the 'Network Setup Wizard' window with the title 'Name your network.' The window has a blue header bar with a printer icon in the top right. Below the title bar, there is a line of text that reads 'Name your network by specifying a workgroup name below. All computers on your network should have the same workgroup name.' Below this text, there is a text input field labeled 'Workgroup name:' which contains the text 'Accounting'. Below the input field, there is a line of text that reads 'Examples: HOME or OFFICE'. At the bottom of the window, there are three buttons: '< Back', 'Next >', and 'Cancel'. The 'Next >' button is highlighted with a red rectangle.

Click **Next**.

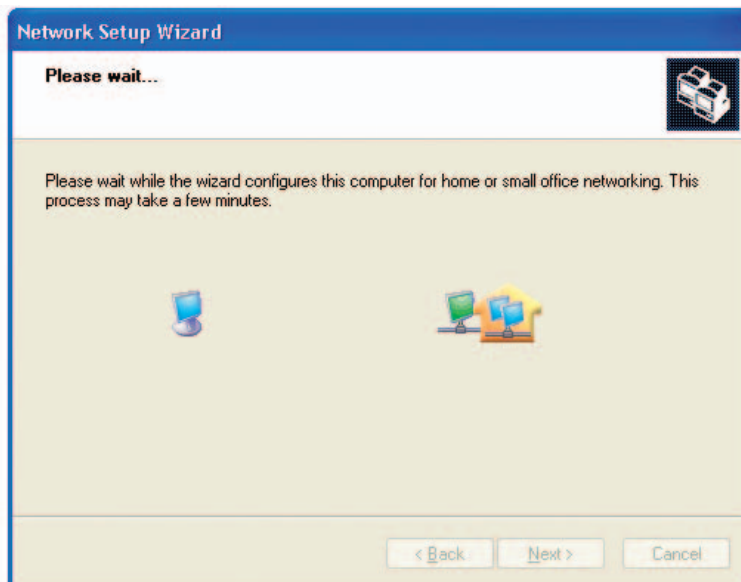
Networking Basics (continued)

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



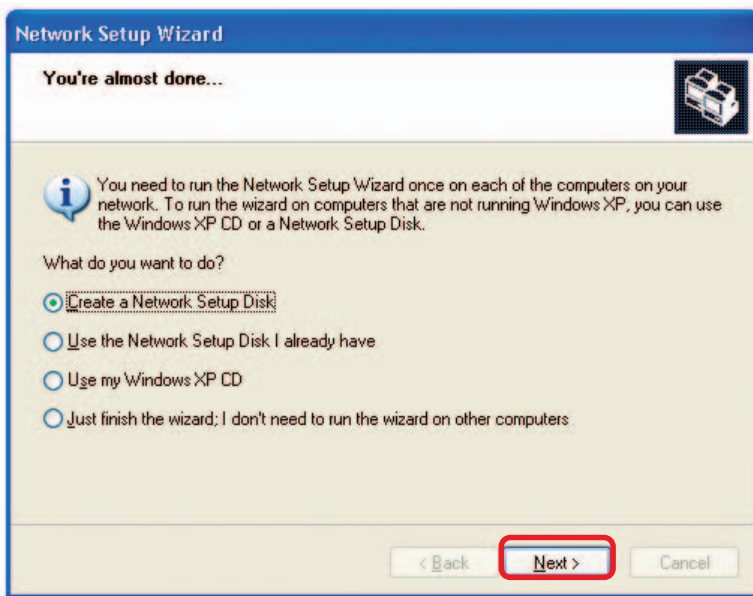
When the changes are complete, click **Next**.

Please wait while the **Network Setup Wizard** configures the computer. This may take a few minutes.

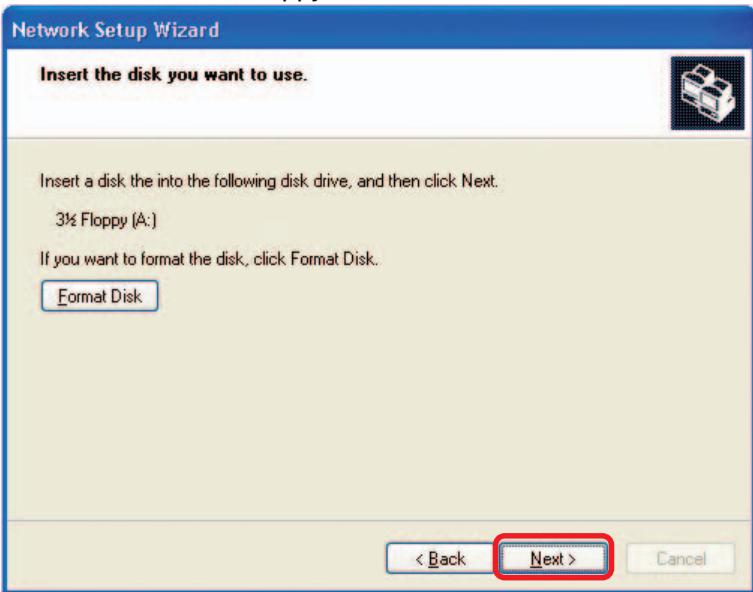


Networking Basics (continued)

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**.

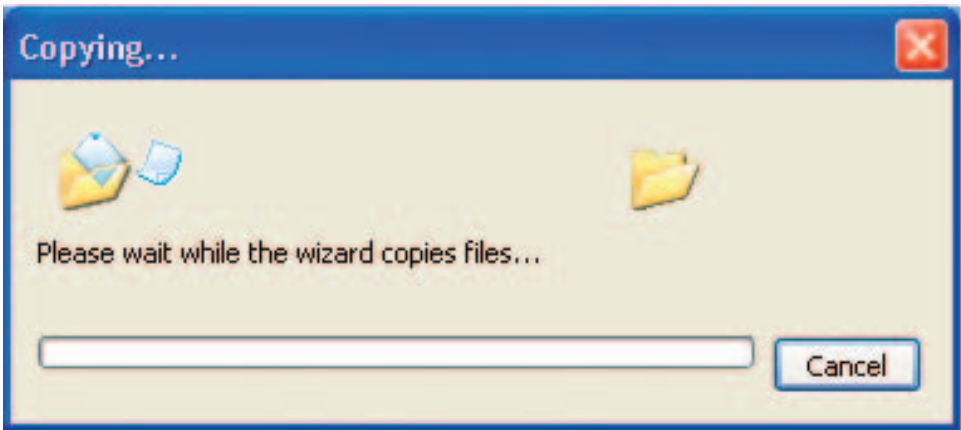


Insert a disk into the Floppy Disk Drive, in this case drive **A**.

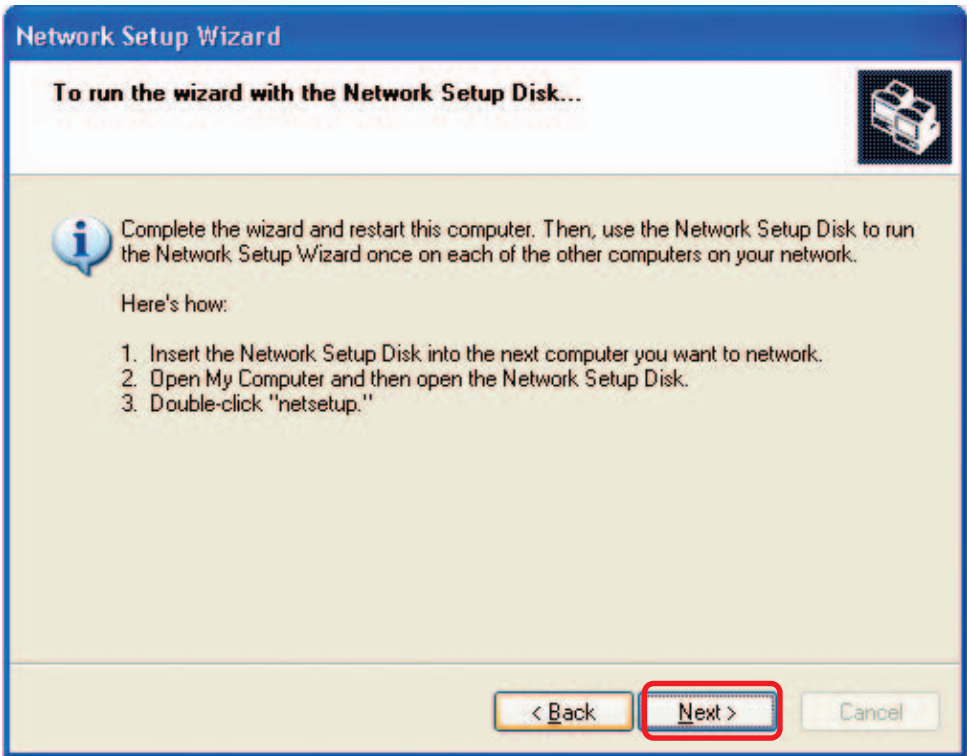


Click **Next**.

Networking Basics (continued)

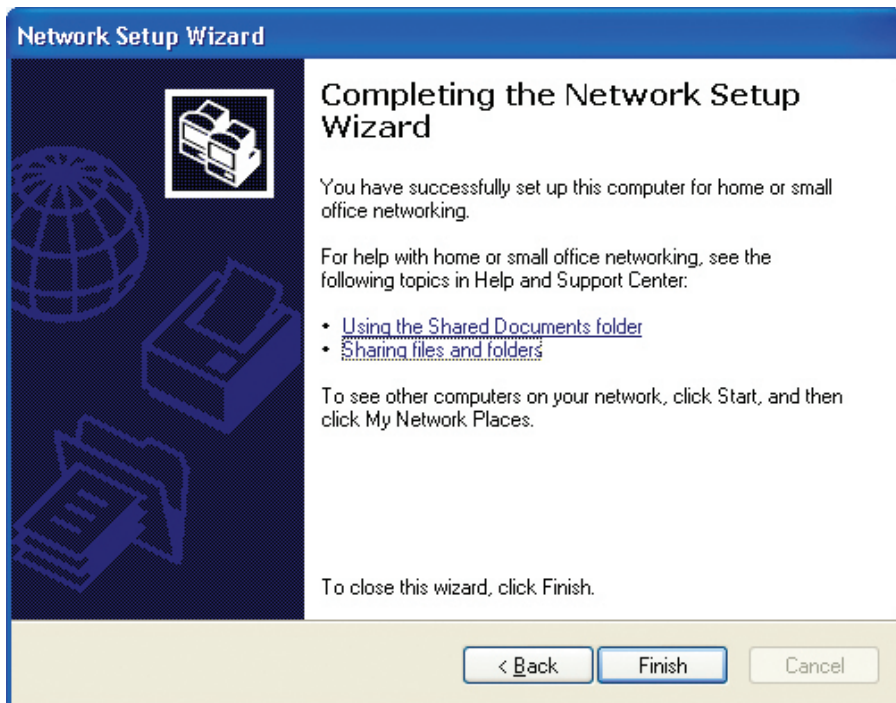


Please read the information under **Here's how** in the screen below. After you complete the **Network Setup Wizard** you will use the **Network Setup Disk** to run the **Network Setup Wizard** once on each of the computers on your network. Click **Next**.

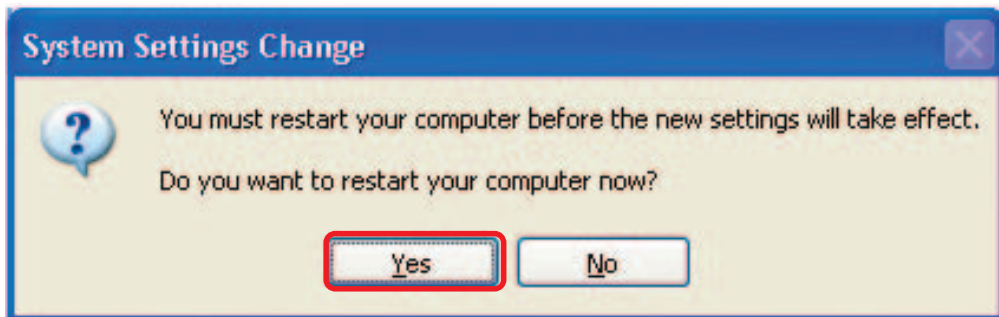


Networking Basics (continued)

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



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



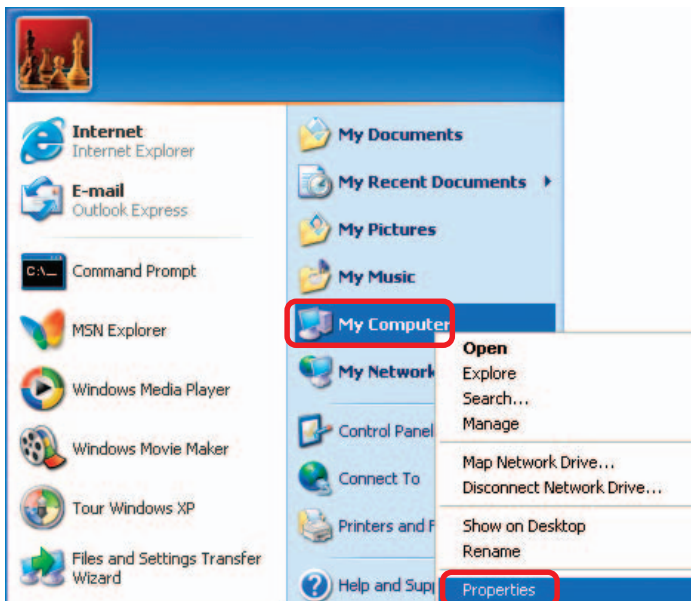
You have completed configuring this computer. Next, you will need to run the **Network Setup Disk** on all the other computers on your network. After running the **Network Setup Disk** on all your computers, your new wireless network will be ready to use.

Networking Basics (continued)

Naming your Computer

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

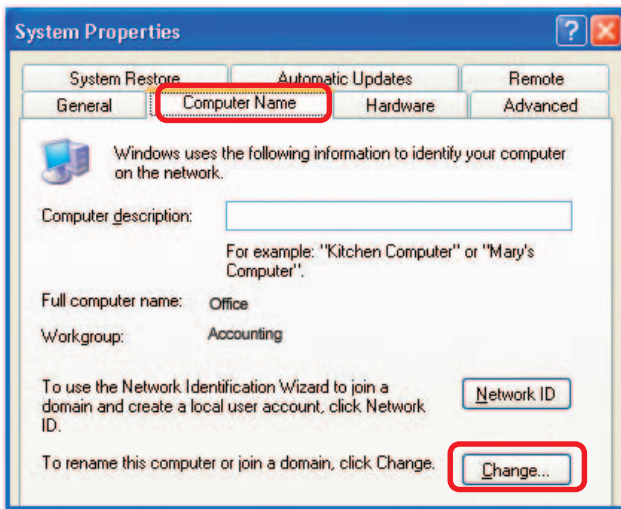
- Click **Start** (in the lower left corner of the screen).
- **Right-click** on **My Computer**.
- Select **Properties**.



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

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

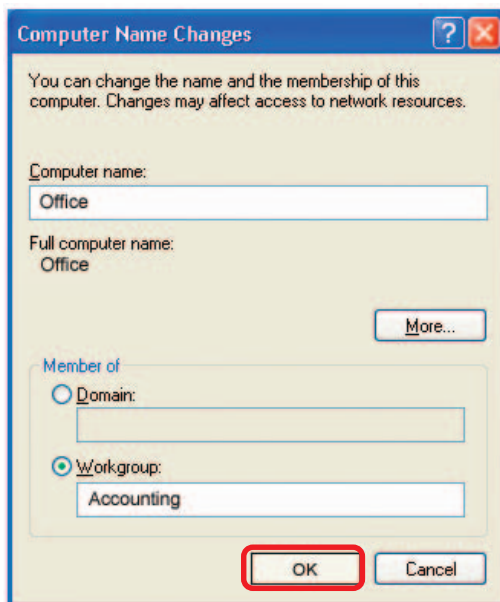
- To rename the computer and join a domain, click **Change**.



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**.



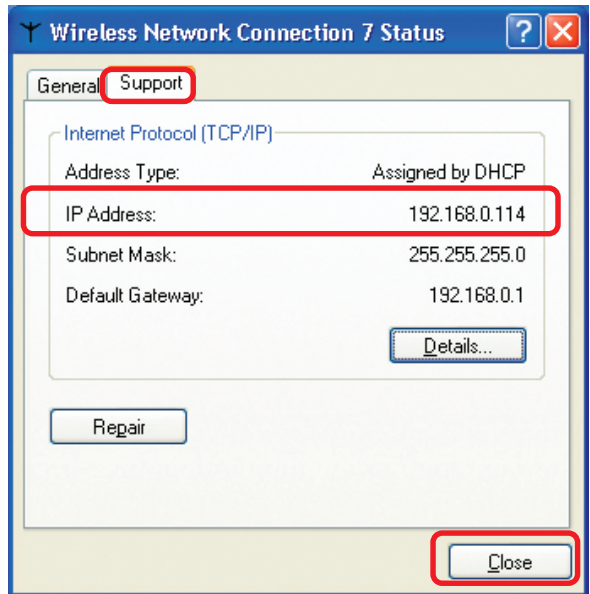
Networking Basics (continued)

Checking the IP Address in Windows XP

This window will appear.

- Click the **Support** tab.

- 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**.

