

D-Link *Air* DWL-120

**2.4 GHz Wireless USB
Adapter**

Manual

Contents

Package Contents..... 3

Introduction 4

Wireless Basics..... 5

Getting Started 9

Configuration Utility 16

Troubleshooting 23

Networking Basics 26

Technical Specifications..... 42

Contacting Technical Support 45

Limited Warranty and Registration..... 46

Package Contents



Contents of Package:

- DWL-120 Wireless USB Adapter
- USB Cable
- Manual on CD
- Quick Installation Guide
- Driver CD

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

Introduction

The D-Link *Air* DWL-120 2.4GHz Wireless USB Adapter is an ideal way to connect your computer to a wireless network. After completing the steps outlined in the Quick Install Guide (included in your package) you will have the ability to share information and resources, such as files and printers, and take full advantage of a “connected” environment for work or play!

This DWL-120 comes with software drivers for the most popular Microsoft Windows operating systems and can be integrated into a larger network, running Windows XP, Windows 2000, Windows ME, or Windows 98 in either Ad Hoc mode (without an Access Point) or Infrastructure mode (with an Access Point.) The IEEE 802.11b standards compliance means this adapter gives you the flexibility to connect it to any 802.11b network. The IEEE 802.11b Ethernet standard allows you to connect computers and devices at speeds up to 11Mbps, dependent upon the distance between wireless adapters, the configuration of your working environment, or the capabilities or limitations of your computer systems.

This manual provides a quick introduction to wireless technology and its application as it relates to networking. Take a moment to read through this manual and familiarize yourself with wireless technology. You should also give yourself some time to become familiar with your new wireless network.

Wireless Basics

D-Link *Air* wireless products are based on industry standards to provide easy to use and compatible high-speed wireless connectivity within your home or business. Strictly adhering to IEEE 802.11b, the D-Link *Air* wireless family of products will allow you to access the data you want, when and where you want it. No longer will you be tethered to a workstation or forced to run new wiring through your home or office. You will be able to enjoy the freedom that wireless networking delivers.

A wireless LAN (WLAN) is a cellular computer network that transmits and receives data with radio signals instead of wires. Wireless LANs are used increasingly in both home and office environments. 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 has proven to be beneficial for many users.

WLAN users can use the same network applications they use on an Ethernet LAN. WLAN adapter cards used on laptop and desktop systems, support the same protocols as Ethernet adapter cards. For most users, there is no noticeable functional difference between a wired Ethernet desktop computer or mobile WLAN workstation other than the added benefit of the ability to roam within the WLAN-cell. Under many circumstances, it may be desirable for mobile network devices to link to a conventional Ethernet LAN in order to use servers, printers or an Internet connection supplied through the wired LAN. A Wireless Access Point (AP) is a device used to provide this link.

People use wireless LAN technology for many different purposes.

Mobility - Productivity increases when people have access to data in any location within the operating range of the WLAN. Ad-hoc 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, both physically and logically, can benefit from WLANs ease of implementation. WLANs can operate in locations where installation of wiring may be impractical. Furthermore, IEEE standardization mandates interoperability of all WLAN devices that conform to the 802.11b set of standards.

Installation Speed and Simplicity - Installing a wireless LAN system can be fast and easy and can eliminate the need to pull cable through walls and ceilings.

Wireless Basics (*continued*)

Installation Flexibility - Wireless technology allows the network to go where wires cannot go.

Reduced Cost-of-Ownership - While the initial investment required for wireless LAN hardware might be higher than the cost of wired LAN hardware, overall installation expenses and life-cycle costs will be significantly lower. Long-term cost benefits are greatest in dynamic environments requiring frequent moves, adds, and changes.

Scalability - Wireless LAN systems can be configured in a variety of topologies to meet the needs of specific applications and installations. Configurations are easily changed and range from peer-to-peer networks suitable for a small number of users to full infrastructure networks of thousands of users that allow roaming over a broad area.

The full range of D-Link *Air* Wireless LAN products include:

- ◆ Wireless PC cards used with laptop computers
- ◆ Wireless PCI cards used with desktop computers
- ◆ Wireless Access Points
- ◆ Wireless Home Gateways

Standards - Based Technology

The IEEE 802.11b standard designates that devices operate at an optimal data rate of 11 Megabits per second. This means 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 using multiple frequencies in the 2.4GHz range utilizing Direct Sequence Spread Spectrum (DSSS) technology. D-Link *Air* products will automatically sense the best possible connection speed to ensure the greatest speed and range possible with the technology.

Wireless Basics *(continued)*

Installation Considerations

Designed to go up to 300 feet (100 meters) indoors and up to 900 feet (273 meters) outdoors, D-Link *Air* DWL-120 lets you access your network from virtually anywhere you want. Keep in mind, however, that the number and thickness of walls, ceilings or other objects that the wireless signals must pass thru may limit range. Typical ranges vary depending on the types of materials and background RF noise in your home or business. The key to maximizing range is to follow these basic principles:

1. Keep the number of walls and ceilings between the access point and your receiving device to a minimum - Each wall or ceiling can reduce your D-Link *Air* Wireless product's range from 3-90 feet (1-30 meters.) For some businesses or for a large residential home deployment, it may be more beneficial to have more than one access point with overlapping coverage.
2. Be aware of the direct line between Access Points, Residential Gateways, and Computers - 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! Try to make sure that the Access Points and Adapters are positioned so that the signal will travel straight through a wall or ceiling 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, Residential Gateways, and Computers so that the signal passes through drywall or open doorways and not other materials.
4. Make sure that the antenna is positioned for best reception by using the software signal strength tools included with your product.
5. Keep your product away (at least 3-6 feet or 1-2 meters) from electrical devices that generate RF noise, like microwaves, monitors, electric motors, etc.

Wireless Basics *(continued)*

For the average residence, range should not be a problem. If you experience low or no signal strength in areas of your home that you wish to access, consider positioning the Access Point in a location directly between the Residential Gateways and/or Computers that will be connected.

Additional Access Points can be connected to provide better coverage in rooms where the signal does not appear as strong as desired.

Using radio frequency (RF) technology, WLANs transmit and receive data over the air, minimizing the need for wired connections. Thus, WLANs combine data connectivity with user mobility, and, through simplified configuration, enable movable LANs.

Getting Started

To begin, you must select the type of wireless network you will be building. We will discuss the following types of networks in this section:

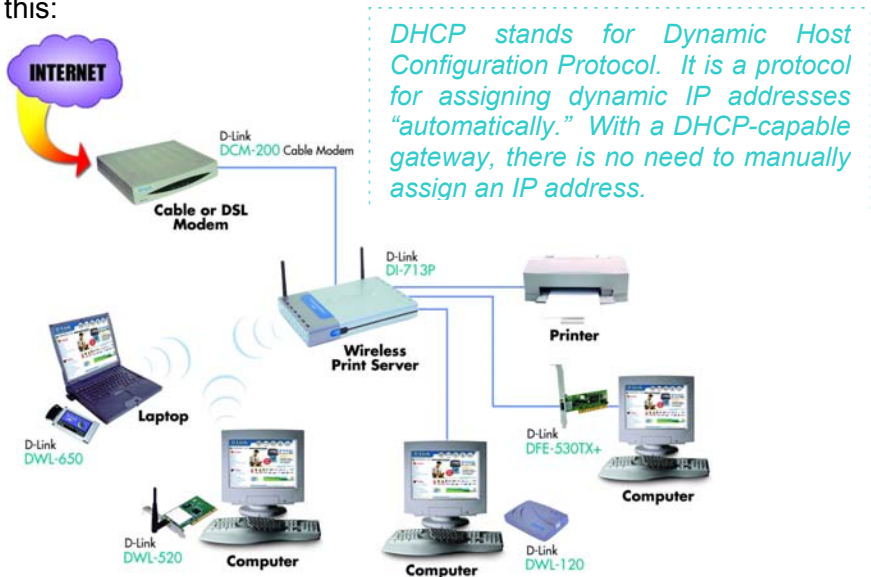
1. *A Home Internet Network with A Residential Gateway, Firewall, or Router*
2. *A Home Internet Network with Multiple IP Addresses*
3. *An Ad Hoc Network*
4. *An Ad Hoc Network with Internet Sharing*

Please select, from the four types of networks described above, the type of network that is appropriate for your needs. Please follow the instructions in the corresponding section that follows.

1. A Home Internet Network with A Residential Gateway, Firewall, or Router

(Network administrators with Dynamic IPs can also follow these instructions.)

If you have two or more computers (laptops or desktops) and want to share files, printers, and Internet access using a DHCP-capable Residential Gateway, Router, or Firewall – **or** - if you want to connect to an Ethernet network that uses Dynamic (DHCP) IP addresses, then follow the instructions on the next page. When it is complete, your network may look similar to this:



1. A Home Internet Network with A Residential Gateway, Firewall, or Router *(continued)*

(Requirements: A Wireless and DHCP capable Gateway, Router, Print Server, or an existing Ethernet network that uses dynamic IP addresses plus a Wireless router.)

This type of installation requires that you provide a dynamic IP address for each computer on your network. You will need a DHCP-capable Residential Gateway, Router, Print Server or Firewall for your network.

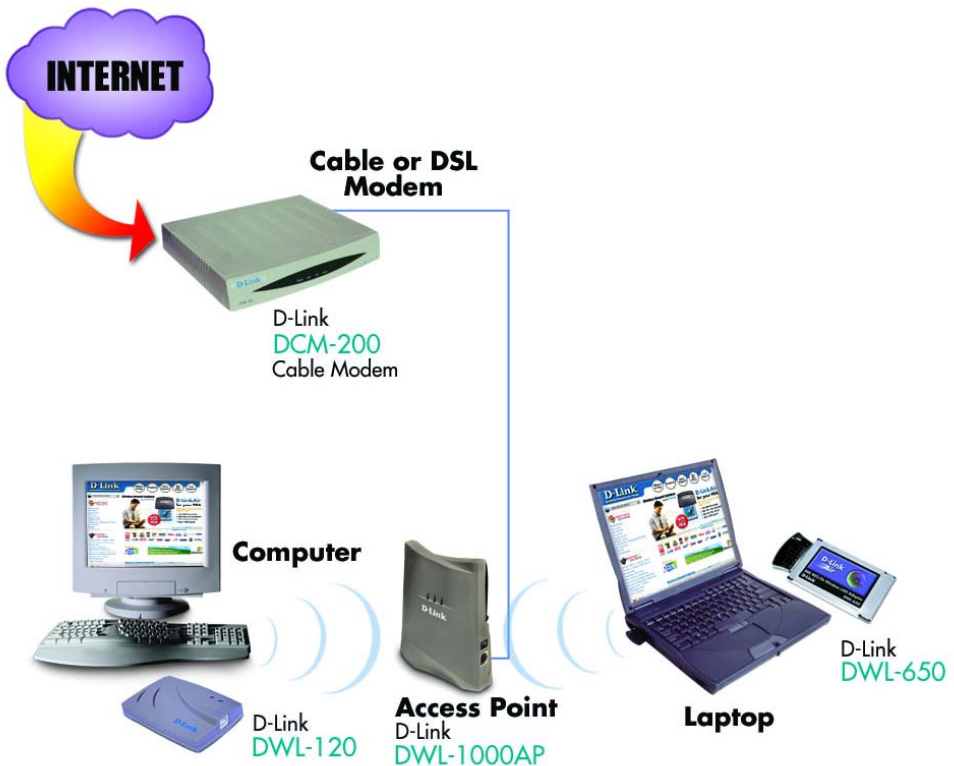
To complete the installation, please follow these steps:

1. Connect the **Router or Gateway** (or in the case of the example shown: a DHCP capable Print Server, for example, the **D-Link Air DI-713P**) to a Broadband connection, (i.e., a **Cable or DSL** modem such as the **DCM-200** cable modem.)
2. Install the **D-Link Air DWL-120 Wireless Adapter** into the desktop computer(s) on your wireless network. (You can also install the **DWL-520 wireless adapter** into your desktop computers. Use the **DWL-650 wireless adapter** for your laptop computers - please refer to the **Quick Install Guide** that came with your purchase.)
3. Check the **wireless connection** to confirm that your adapter is installed correctly. Please refer to the **Configuration Utility** (page 16) and the **Networking Basics** (page 31) sections in this manual to find out how to check on the wireless connection of your network adapter.
4. Check to make sure that the **IP Address** of the **wireless adapter** is within the IP address range of your network. Please refer to the **Networking Basics** (page 32) section of this manual to find out how to check your IP Address. *By default, the wireless adapter is set to obtain a Dynamic IP Address.*
5. Learn to share printers and files (please refer to the **Networking Basics** section of this manual, page 41.)

2. A Home Internet Network with Multiple IP Addresses

(Network administrators with Static IPs can also follow these instructions.)

If you have two or more computers (laptops or desktops) and want to share files, printers, and Internet access using multiple IP addresses that you have purchased from your Internet Service Provider **-or-** you want to connect to an Ethernet network that uses Static IP Addresses, then follow the instructions on the next page. When you have completed your network, it should look similar to this:



Please note that this type of installation requires that your ISP (Internet Service Provider) provides you a static IP address for each computer on your network. Please refer to the manual that came with your Access Point to determine its configuration.

2. A Home Internet Network with Multiple IP Addresses (continued)

Please follow these steps to complete the installation:

1. Connect the **Wireless Access Point** (the **D-Link Air DWL-1000AP** is shown in the example) to a Broadband connection (i.e., a **Cable or DSL** modem such as the **D-Link DCM-200** cable modem.)
2. Install the **D-Link Air DWL-120 Wireless Adapter** into the desktop computer(s) on your wireless network. (You can also install the **D-Link Air DWL-520** wireless adapter into your desktop computers. Use the **D-Link Air DWL-650** wireless adapter for your laptop computers - please refer to the **Quick Install Guide** that came with your purchase.)
3. Check the **wireless connection** to confirm that your adapter is installed correctly. Please refer to the **Configuration Utility** (page 16) and the **Networking Basics** (page 31) sections in this manual to find out how to check on the wireless connection of your network adapter.
4. Set the **Static IP Address** of the **wireless adapter** (please refer to the **Networking Basics** section of this manual, page 32.)

Note: If you are using a “PPPoE client” (PPPoE represents “Point to Point Protocol over Ethernet,”) please contact your ISP for further instructions regarding connecting to the Internet.

5. Learn to share printers and files (please refer to the **Networking Basics** section of this manual, page 41.)

3. An Ad Hoc Network

If you have two or more computers (desktops or laptops) and want to share files and printers, but no Internet connection, please complete the following instructions. When your ad hoc network is complete it may look similar to this:



(Requirements: Wireless network adapters - for example, the **D-Link Air DWL-650**.)

To complete this installation, please follow these steps:

1. Install the **D-Link Air DWL-120 wireless adapter** into your desktop computers. (You may install the **D-Link Air DWL-650 wireless adapters** into your laptops - please refer to the **Quick Install Guide** for further instructions.)
2. Set the **Static IP Address** for the wireless adapters (please refer to the **Networking Basics** section in this manual, page 32.)
3. Check the **Wireless connection** to confirm that your adapter is installed correctly. Please refer to the **Configuration Utility** (page 16) and the **Networking Basics** (page 31) sections of this manual to find out how to check on the wireless connection of your network adapter.
4. Learn to share printers and files (please refer to the **Networking Basics** section in this manual, page 41.)

4. An Ad Hoc Network with Internet Sharing

If you have two or more computers (desktops or laptops) and want to share files, printers, and Internet access using one computer or laptop as an Internet Server, then follow the instructions below. When you have completed your network, it should look similar to this:



To share an Internet connection with Internet Sharing software you will need to purchase Internet Sharing software or use the Internet Connection Sharing (ICS) utility provided with Windows XP, Windows 2000, Windows ME or Windows 98SE.

Please follow your software documentation to properly configure the Internet sharing software after you install your wireless networking adapters. To install your wireless network adapter follow the instructions on the next page.

4. An Ad Hoc Network with Internet Sharing (continued)

If the Internet Sharing Software will be installed on the same computer into which you are installing this wireless network adapter, then follow these steps:

1. Install the **D-Link Air DWL-120 wireless adapter** (please refer to the **Quick Install Guide**.)
2. Set the Static IP Address for the wireless adapter (please refer to the **Networking Basics** section of this manual, page 32.)
3. Check the **wireless connection** to confirm that your adapter is installed correctly. Please refer to the **Configuration Utility** (page 16) and the **Networking Basics** (page 31) sections of this manual to find out how to check on the wireless connection of your network adapter.
4. Learn to share printers and files (please refer to the **Networking Basics** section of this manual, page 41.)
5. Install your **Internet Sharing Software**

If the **Internet Sharing Software** will be installed on a computer other than the one in which you are installing the **D-Link Air DWL-120 wireless adapter**, then follow these steps:


1. Install the **D-Link Air DWL-120 wireless adapter** into the computer (please refer to the **Quick Install Guide**.)
2. Check the **IP Address** for the wireless adapter. Please make certain that all the computers on your network are in the same IP Address range (please refer to the **Networking Basics** section of this manual for more information, page 32.)

*Note: By default, the **wireless adapter** is set to obtain a **Dynamic IP Address**, automatically.*

3. Learn to share printers and files (please refer to the **Networking Basics** section of this manual, page 41.)

Configuration Utility

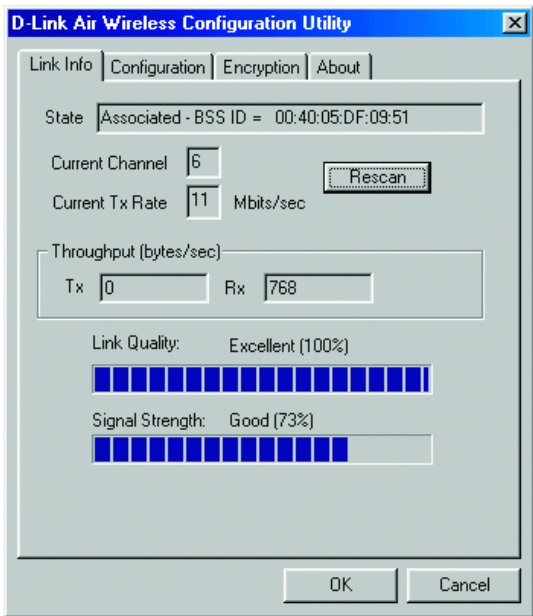
D-Link Air DWL-120 uses the **Configuration Utility** as the management software. The utility provides the user an easy interface to change any settings related to the wireless adapter. When the computer is started, the **Configuration Utility** starts automatically and the system tray icon is loaded in the toolbar (see illustration below.) Clicking on the utility icon will start the **Configuration Utility**. Another way to start the **Configuration Utility** is to click on **Start>Programs>D-Link DWL-120**.

A new icon -  will appear in your Icon tray.



If the icon is in red, it means that the **DWL-120 wireless adapter** configuration is invalid or incomplete. A “red” icon may indicate that the adapter is set to an incorrect channel or the communication mode is set incorrectly. Verify the settings for the **DWL-120** and make sure that the computer is within wireless range.

Double-click on the icon shown above. The screen below will be displayed.



Link Info Tab

The **Link Info Tab** displays the current state of your wireless adapter. The fields in this menu provide the following information:

State:

Shows the **association** state of your computer with the wireless LAN. When operating in Infrastructure mode, this field shows the MAC address of the Access Point with which you are communicating. When operating in Ad Hoc mode, this field shows the virtual MAC address used by computers participating in the Ad Hoc network. In both cases, the MAC address will be shown in hex format (BSSID.) If the word **scanning** appears in this field, it indicates that networking has not been achieved. The adapter is searching for an available Access Point, within range. *(Note: If there is a problem with the driver installation, this field will display an error message.)*

Rescan:

Pressing the rescan button causes the driver to restart and begin its connection procedure. The connection procedure differs depending on the mode of the driver.

Infrastructure Mode:

The driver will scan all available channels continuously until it finds one or more Access Points that matches its SSID. It will then try to authenticate and associate with the Access Point.

Ad Hoc Mode:

The driver will scan for 5 seconds looking for an existing Ad Hoc network using the same SSID. If one is not found, the driver will “start” its own Ad Hoc network.

Current Channel:

Shows the channel on which the connection is made. In Infrastructure mode, this number changes as the radio scans the available channels.

Current Tx Rate:

Shows the highest transmit rate of the current association.

Throughput:

Shows the short term transmit and receive throughput in bytes/second, and is continuously updated.

Link Info Tab *(continued)*

Link Quality:

Is only active when in **Infrastructure Mode**. The bar graph displays the quality of the link with the Access Point. If the Link quality becomes “poor” the driver will begin looking for a better Access Point. The graph will be labeled for quality as shown on the following page:

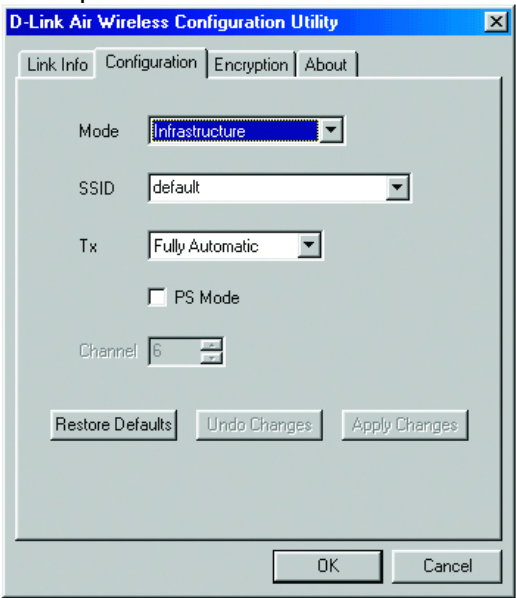
- “Poor”
- “Weak”
- “Fair”
- “Good”
- “Excellent”

Signal Strength:

Is active only when in Infrastructure Mode. The graph displays normalized signal strength averaged over all frames that over 100 bytes long that are received by the Access Point.

Configuration Tab

Select the **Configuration Tab** to access the Configuration menu, as shown below. You can make changes to any of the fields shown below, without the need to restart your computer.



Configuration Tab *(continued)*

Mode

The D-Link *Air* DWL-120 Wireless PCI Adapter can operate in one of two modes, which are specified in the **Mode** field of the Configuration menu. Clicking the down arrow at the right of the Mode field displays the available modes. The two modes are **802.11 Ad Hoc** and **Infrastructure**.

- **802.11b Ad Hoc** - This is the 802.11b peer-to-peer mode of operation. In “Ad Hoc” mode, only one wireless “cell” is supported for each different SSID. All communication is done from client to client without the use of an Access Point. “802.11b Ad Hoc” networking uses the same SSID for the wireless adapters in establishing the network connection. When “Ad Hoc” mode is selected, the utility will provide a selection for setting the channel.
- **Infrastructure** - This mode of operation requires the presence of an 802.11b Access Point. All communication is done through the Access Point, which relays packets to other wireless clients as well as to nodes on a wired Ethernet network.

SSID

The SSID is essentially a name that identifies your wireless network. All Access Points and all devices attempting to connect to a specific Wireless network must use the same SSID.

Tx

The transmission rate at which the data packets are transmitted by the client of the Access Point. You can set this to the following fixed rates: 1 Mbps; 2Mbps; 5.5 Mbps or 11 Mbps.

PS Mode

Power Saving mode allows your computer to use reduced power during idle time by going into “sleep” mode, saving energy costs.

Restore Defaults

Pressing this button restores each field in the panel to its default value. You must also click on “Apply Changes” or “OK” in order for the default settings to take effect.

Undo Changes

Pressing this button reverts all fields in the panel back to the original values that were present when the Configuration Utility was opened from the Task bar.

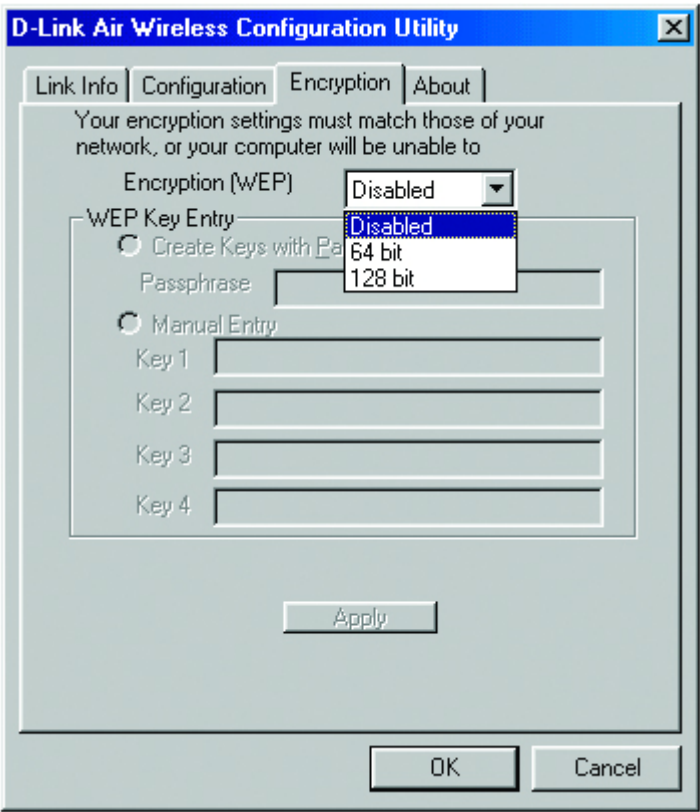
Configuration Tab (continued)

Apply Changes

This button becomes active only when one of the fields has been modified. Click on this button for changes to take effect. The changes will then be saved and will be in effect when the computer is restarted.

Encryption Tab

The **Encryption Tab** menu allows you to enable encryption and to set the encryption keys. To see the available encryption methods, click the **down** arrow at the right of the **Encryption (WEP)** field.



There are two encryption methods available. The IEEE 802.11 specification defines Wired Equivalent Privacy (WEP) using a 64-bit key and a 128-bit key.

Encryption Tab (*continued*)

Enabling Encryption

To enable encryption, click the **down** arrow at the right of the Encryption field, select either **64 bit** or **128 bit**, and click the **Apply** button. After enabling an encryption method, you must then specify encryption keys, as described in the following sections.

If you specify an encryption method, you will only be able to communicate with Access Points and stations that use the same encryption method and keys.

Disabling Encryption

To disable encryption, click the **down** arrow at the right of the Encryption field, select **Disabled**, and click the **Apply** button.

Creating Encryption Keys Using a Passphrase

To create encryption keys using a **Passphrase**, click the radio button next to **Create Key with Passphrase** and type a character string in the **Passphrase** field. As you type, the Configuration Utility uses an algorithm to generate four keys used for encryption.

When you finish typing your character string and click the **Apply** button, the Configuration Utility uses asterisks to mask both your **Passphrase** and the keys it generates.

Using a **Passphrase** to generate the four keys makes it easy to set the same keys for all members of your wireless LAN. Please make a record of your passphrase, so that you do not forget it. If you do forget your passphrase, then disable encryption and create new passphrases.

Creating Encryption Keys Manually

If you wish, you can create encryption keys manually by selecting the Encryption tab. Click on the button next to **Manual Entry**.

When you click this button, the cursor appears in the field for Key 1. For 64-bit encryption, you must type exactly 10 hexadecimal digits in each of the four key fields; for 128-bit encryption, you must type exactly 26 hexadecimal digits. (*Hexadecimal digits consist of the numbers 0-9 and the letters A-F.*) You then click the **Apply** button to create your encryption keys. After you click the **Apply** button, the Configuration Utility uses asterisks to mask your keys. Remember to make a note of your hexadecimal string for each key. If you do forget your digits for a key, disable encryption and create a new key.

About Tab

The **About Tab** provides information on the version of the Network Driver, the Configuration Utility, and the firmware in the **D-Link Air DWL-120 Wireless Network Adapter**. You will need the firmware version number if you need to report a problem to tech support.



Troubleshooting

If you encounter any problems during the installation, or simply wish to confirm that the DWL-120 is installed properly, please read the following.

Checking the installation of the DWL-120

In Windows XP:

To check that the DWL-120 is properly installed, please do the following:

1. Go to START>CONTROL PANEL. Double-click on Network Connections. Right-click on LAN. Click Properties.
2. The DWL-120 network adapter will appear, indicating proper installation.

In Windows 2000:

To check that the DWL-120 is installed properly, please do the following:

1. Check the **Windows 2000 Diagnostics**. See if there is any conflict in the **Resource** allocation or the **I/O Address, IRQ** allocations. If you find that the **IRQ** or **I/O Addresses** are already assigned to some other devices, you must change that value.
2. Go to the **Control Panel**. Double click on the **Network Adapter**, you will see **D-Link DWL-120 Wireless Adapter**. Double clicking on that will show you the **status of the DWL-120 network adapter**. If there are no error signs, the adapter has been installed properly.

Troubleshooting *(continued)*

In Windows 98:

To check that the **DWL-120** is installed properly, please do the following:

1. Go to **START>RUN>SETTINGS>CONTROL PANEL>NETWORK**. Choose the **Configuration Tab**. If you find the **Wireless LAN Card**, it means the card is installed properly. If you see the **Yellow** Question-mark (?), the resources are conflicting. *(Please read further in this section for solutions.)*

-or-

2. Right click on **My Computer** and select **Properties**. Select the **Device Manager** and click on the **Network Adapter**. You will find the **D-Link DWL-120 Wireless USB Adapter** if it is installed successfully. If you see the **Yellow** sign, the resources are conflicting. If your resources are conflicting, please check the following.

1. Check that you have installed the DWL-120 into the USB port and check that you have installed the proper driver.
2. Check to see if your computer has a free **IRQ**. If not, make an IRQ free by assigning the same IRQ to some devices, for example COM 1, COM 2 can be assigned the same IRQ values.

Troubleshooting *(continued)*

Frequently Asked Questions about the DWL-120:

Q: Which drivers do I use for different versions of the DWL-120?

A: For DWL-120, use the drivers on the CD provided. For DWL-120a, use the drivers on the <http://support.dlink.com> website.

Q: How can I tell which version of the **DWL-120** I have?

A: **Proof that you have the DWL-120:**

If the MAC address of your DWL-120 is higher than 004005-DF005D or if you see a “check mark” icon representing the DWL-120, then you have the DWL-120. You will use the drivers off the disk provided.

Proof that you have the DWL-120a:

If the Mac address of your DWL-120 is lower than 004005-DF005D, you have the DWL-120a. If you have the DWL-120a, you will use the drivers off the support website, mentioned above.

Q: Does the **DWL-120** work in **Windows NT**?

A: There is no USB support in NT.

Q: How do I solve the **Media Disconnected** Issue in **Windows ME**?

A: In Windows ME, when you execute the **IP Configuration Utility (winipcfg)** from the **Run** command, wireless network adapters will often indicate a **Media Disconnected** status. To resolve this problem, right-click on **My Network Places**, click **Properties**, and then look for the TCP/IP entry for the relevant wireless adapter. Highlight the entry and click **Properties**. At the bottom of the **IP Address** page, uncheck the **Detect Connection to Network Media** box and **Click OK**. Next, close the **Network** settings window and restart your computer for the change to take effect.

Networking Basics

In this section you will find out how to establish a simple network with your household or small business computers, using the **Microsoft Windows XP Operating System**.

If you would like to know how to configure your network with Windows 98 or ME, you can find information at <http://www.homenethelp.com>.

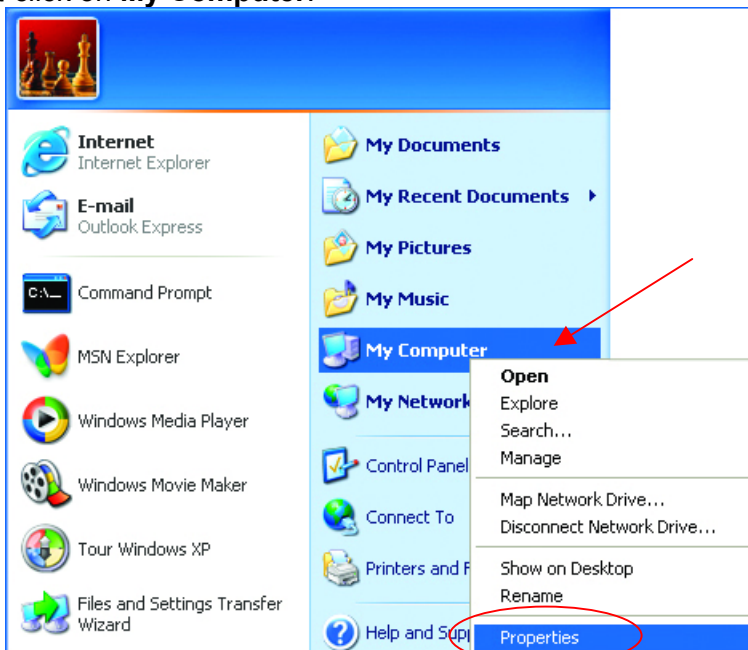
Using **Windows XP** you will learn the essential basics, such as **naming your computer** and **assigning an IP address**.

We will show you how to access Windows XP's **Network Setup Wizard** in order to **share files and folders, a printer, an Internet Connection** and an **Internet Connection Firewall**.

The first step in networking your computers is to name them.

Naming your Computer

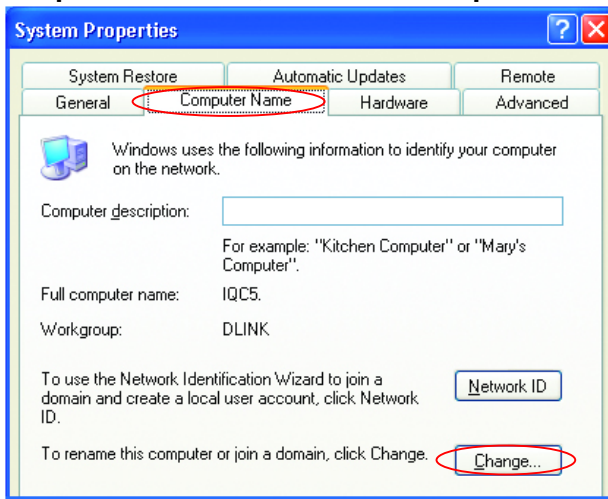
In **Windows XP**, hit **START** (in the lower left corner of the screen) then right-click on **My Computer**.



Click Properties

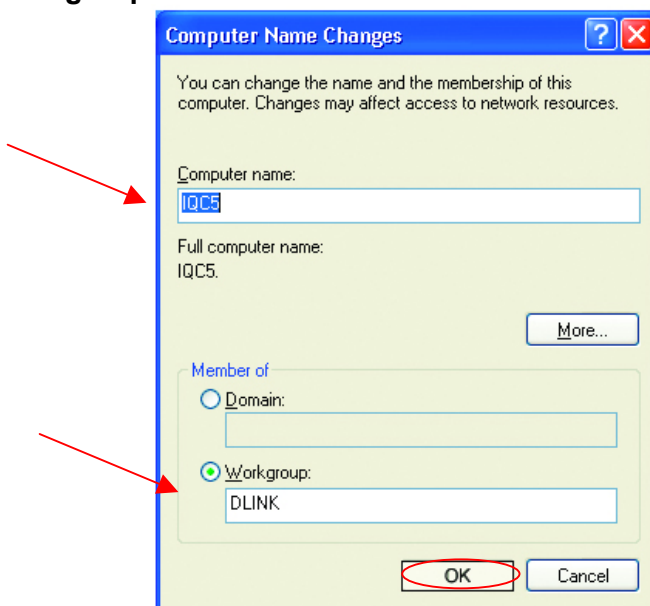
Networking Basics (continued)

In the **System Properties** window, select the **Computer Name** tab.



You may enter a **Computer description** if you wish, this field is optional.
To rename the computer and join a domain, **Click Change**.

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**.

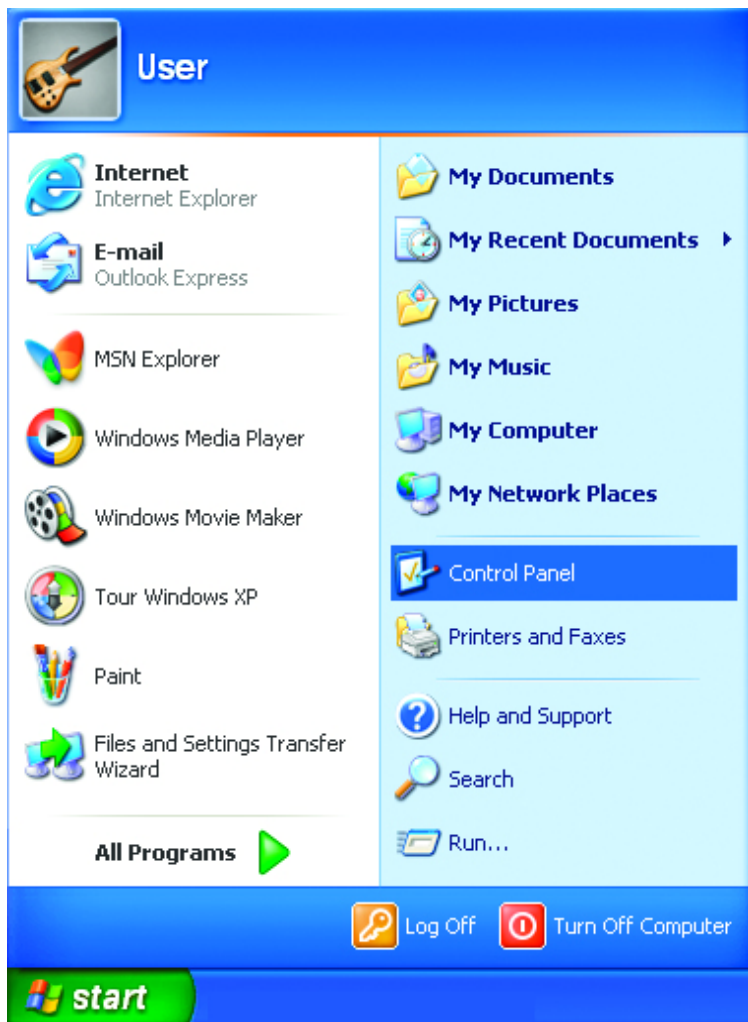


Networking Basics *(continued)*

Assigning an IP Address

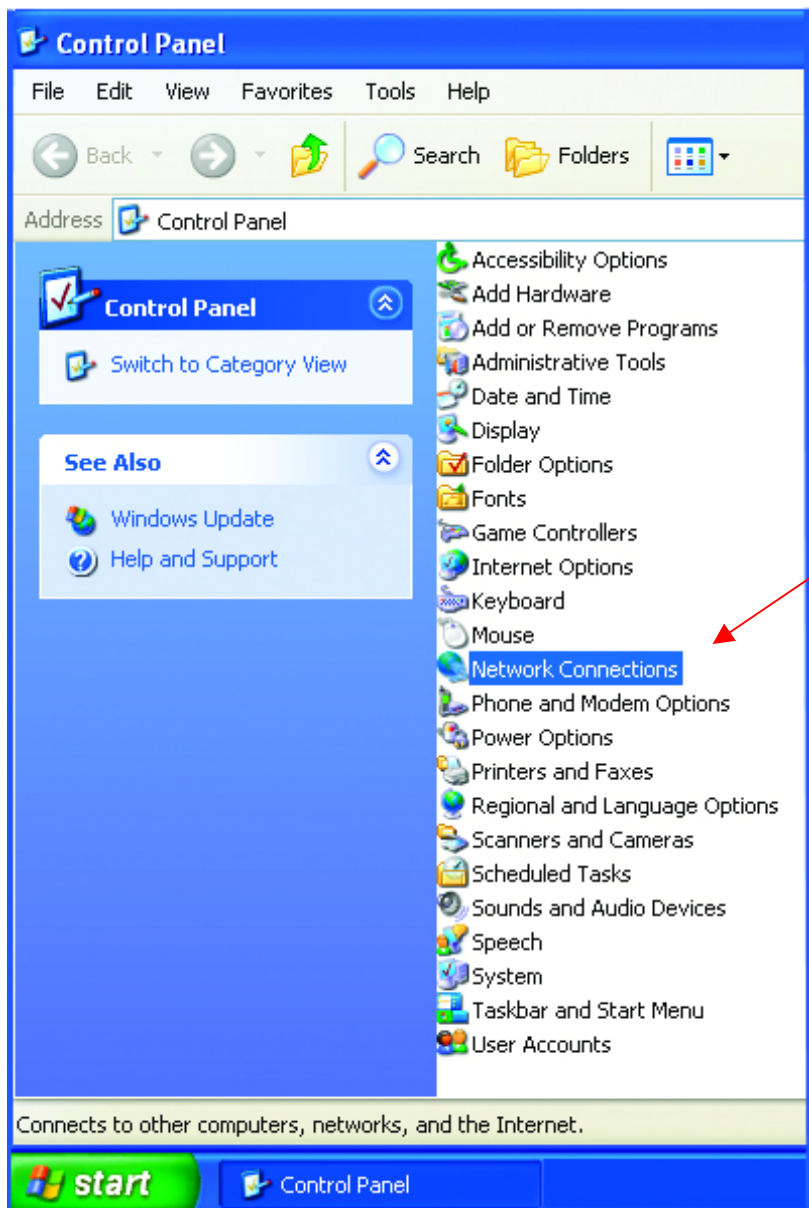
You will need to assign an IP address to each computer, in order to communicate on your network.

Go to **Start**,
Double-click on **Control Panel**.



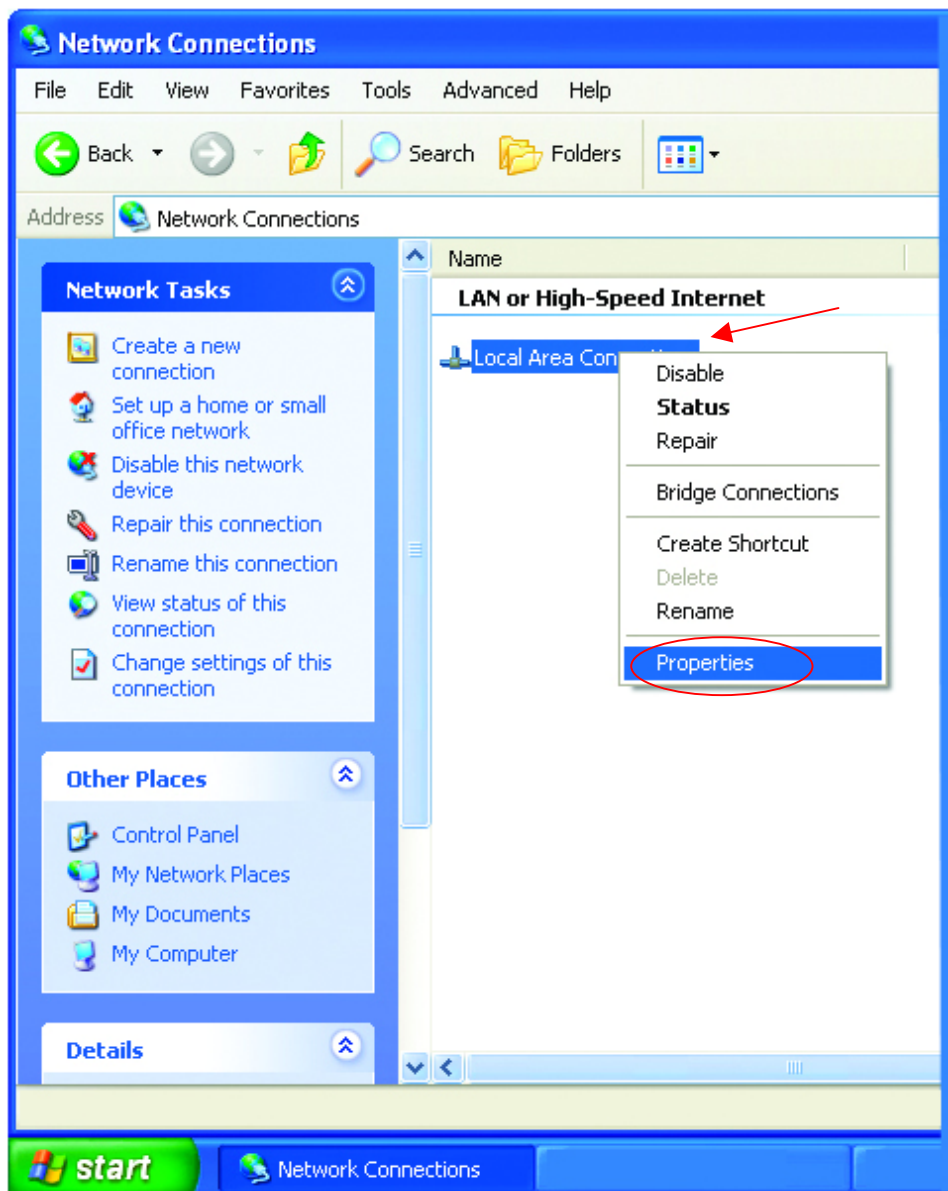
Networking Basics *(continued)*

Double-click on **Network Connections**.



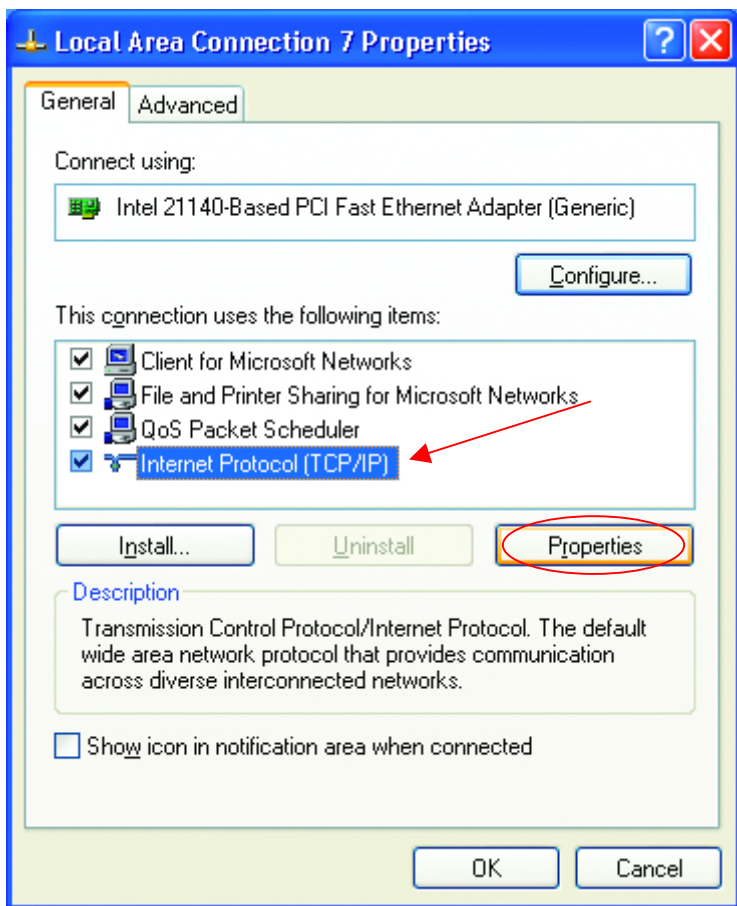
Networking Basics (continued)

Right-click on **Local Area Connections**.
Double-click **Properties**.



Networking Basics *(continued)*

Highlight **Internet Protocol (TCP/IP)**



Click Properties

Networking Basics *(continued)*

- Select **Use the following IP address** in the **Internet Protocol (TCP/IP) Properties** window,
- 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**.

You can ask your Internet Service Provider for this information, or your network administrator.

Internet Protocol (TCP/IP) Properties

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

☐ Obtain an IP address automatically

☒ Use the following IP address:

IP address: 192 . 168 . 0 . 2

Subnet mask: 255 . 255 . 255 . 0

Default gateway: . . .

☐ Obtain DNS server address automatically

☒ Use the following DNS server addresses:

Preferred DNS server: . . .

Alternate DNS server: . . .

Advanced...

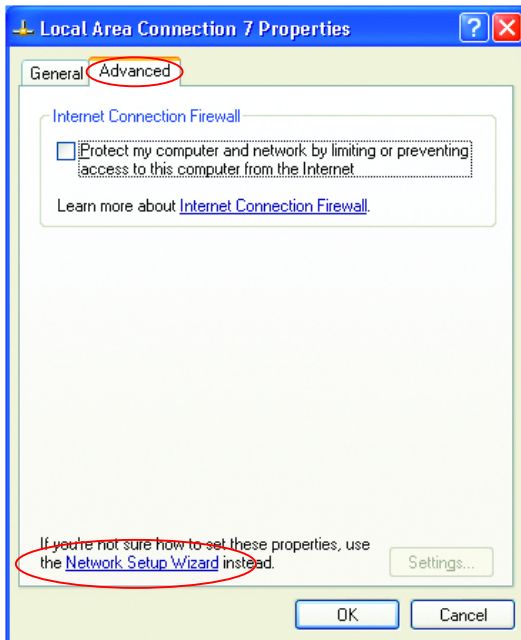
OK **Cancel**

Click OK

Networking Basics (continued)

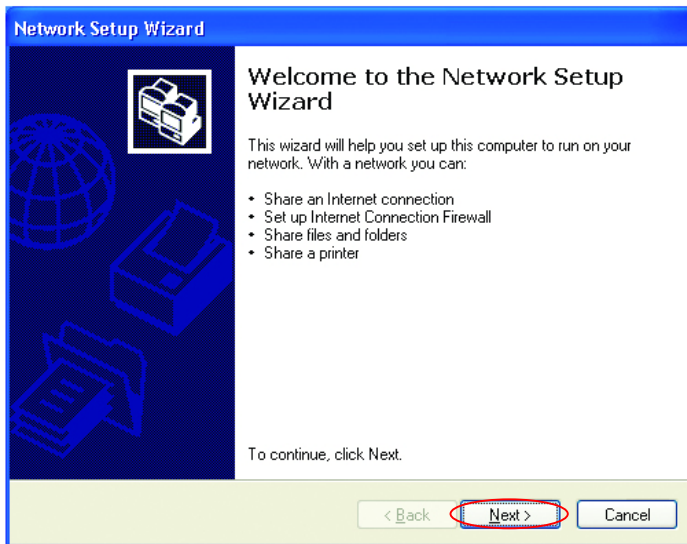
Note: If you have a residential gateway or router on your network, such as the **D-Link DI-704P** Ethernet Broadband Firewall and Router with integrated DHCP services, all the computers on your network can share one Internet connection and you can obtain IP addresses automatically. If you have a DHCP capable gateway, like the DI-704P, please check **Obtain an IP address automatically** and check **Obtain DNS server address automatically**. Click **OK**.

The following screen will appear. Select the **Advanced** tab.



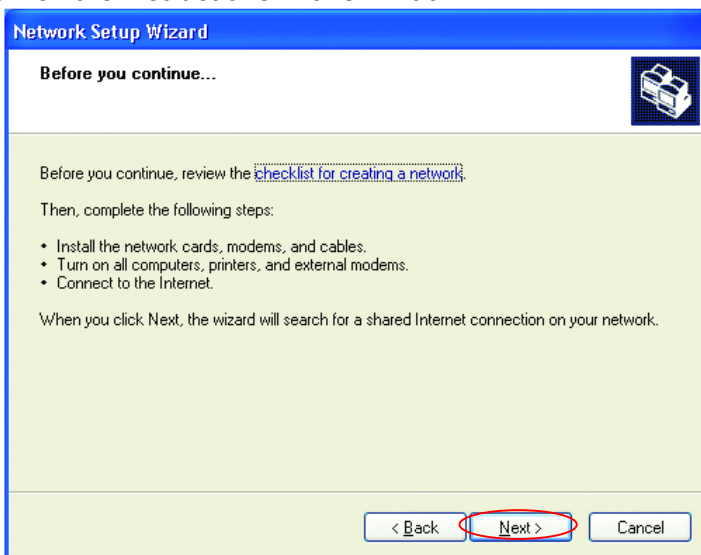
Click **Network Setup Wizard** as shown above.

Networking Basics (continued)



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

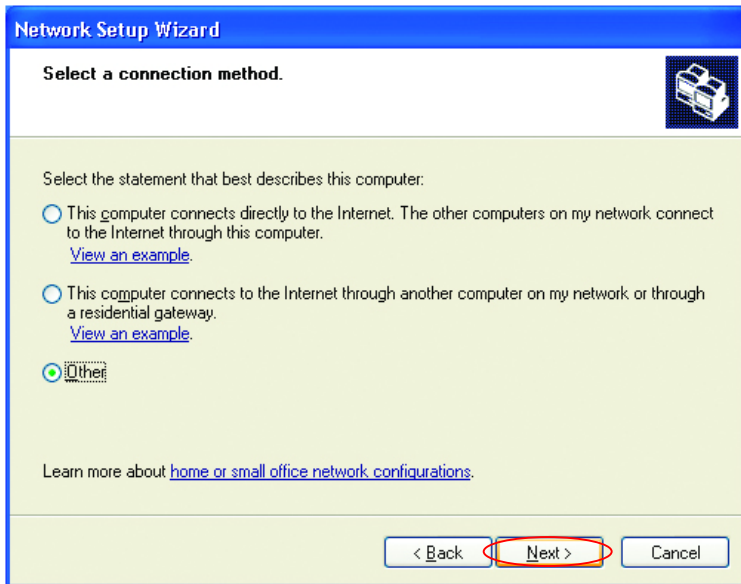
Please follow all the instructions in this window:



Click Next

Networking Basics (continued)

In the following window, select the best description of your computer. If your computer does not share an Internet connection select **“Other”** as shown.



The screenshot shows the 'Network Setup Wizard' window with the title 'Select a connection method.' and a computer icon. It contains three radio button options: 'This computer connects directly to the Internet...', 'This computer connects to the Internet through another computer...', and 'Other'. The 'Other' option is selected. At the bottom, the 'Next >' button is highlighted with a red oval.

Network Setup Wizard

Select a connection method.

Select the statement that best describes this computer:

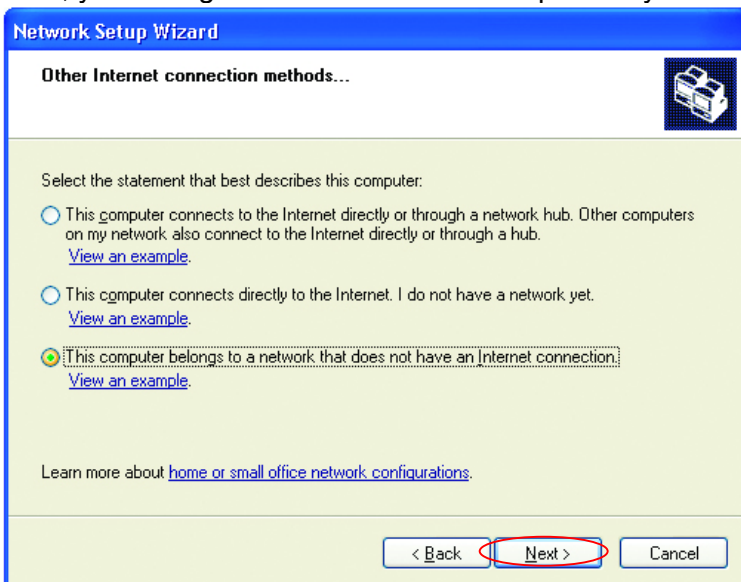
- ☐ This computer connects directly to the Internet. The other computers on my network connect to the Internet through this computer.
[View an example.](#)
- ☐ This computer connects to the Internet through another computer on my network or through a residential gateway.
[View an example.](#)
- ☒ **Other**
[View an example.](#)

Learn more about [home or small office network configurations.](#)

< Back **Next >** Cancel

Click Next

In this window, you will again select the best description of your computer.



The screenshot shows the 'Network Setup Wizard' window with the title 'Other Internet connection methods...' and a computer icon. It contains three radio button options: 'This computer connects to the Internet directly or through a network hub.', 'This computer connects directly to the Internet. I do not have a network yet.', and 'This computer belongs to a network that does not have an Internet connection.'. The third option is selected. At the bottom, the 'Next >' button is highlighted with a red oval.

Network Setup Wizard

Other Internet connection methods...

Select the statement that best describes this computer:

- ☐ This computer connects to the Internet directly or through a network hub. Other computers on my network also connect to the Internet directly or through a hub.
[View an example.](#)
- ☐ This computer connects directly to the Internet. I do not have a network yet.
[View an example.](#)
- ☒ This computer belongs to a network that does not have an Internet connection.
[View an example.](#)

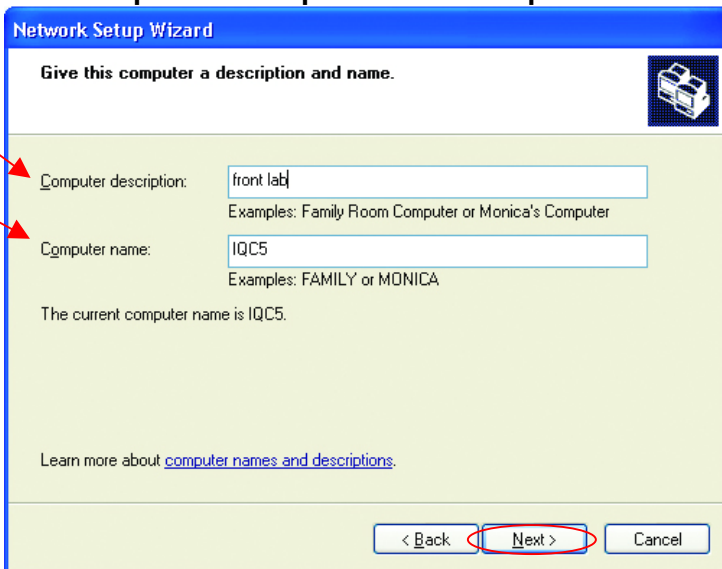
Learn more about [home or small office network configurations.](#)

< Back **Next >** Cancel

Click Next

Networking Basics (continued)

Please enter a **Computer description** and a **Computer name**.



Network Setup Wizard

Give this computer a description and name.

Computer description: front lab
Examples: Family Room Computer or Monica's Computer

Computer name: IQC5
Examples: FAMILY or MONICA

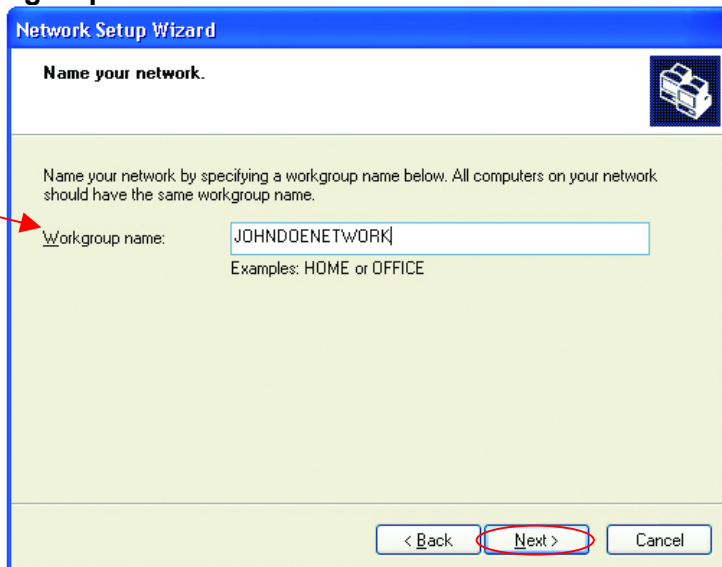
The current computer name is IQC5.

Learn more about [computer names and descriptions](#).

< Back **Next >** Cancel

Click Next

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



Network Setup Wizard

Name your network.

Name your network by specifying a workgroup name below. All computers on your network should have the same workgroup name.

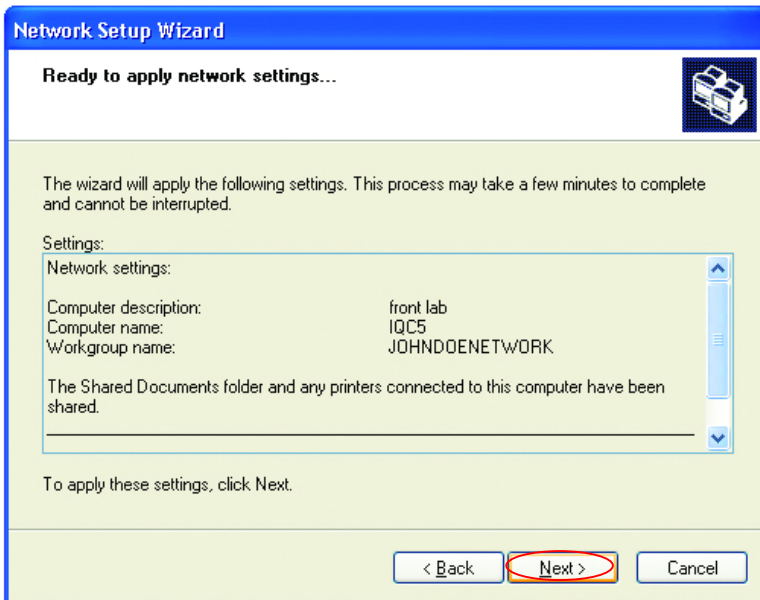
Workgroup name: JOHNDONETWORK
Examples: HOME or OFFICE

< Back **Next >** Cancel

Click Next

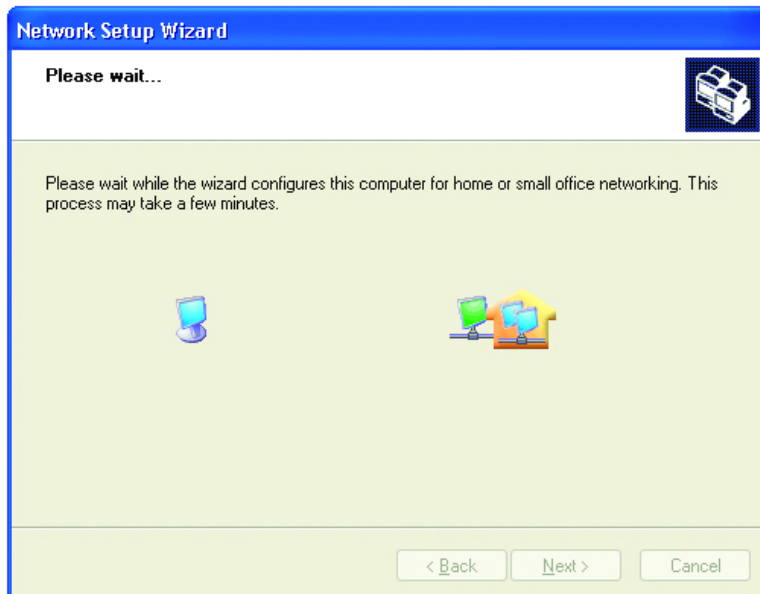
Networking Basics *(continued)*

Please wait while the wizard applies the changes.



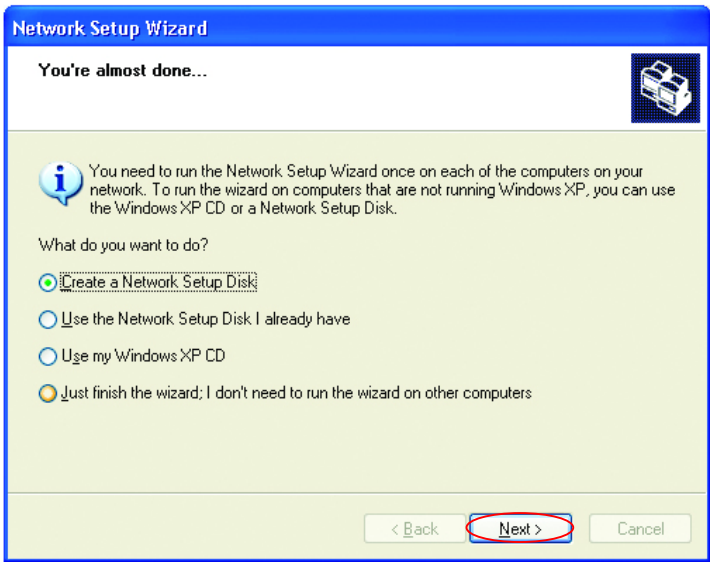
When the changes are complete, **Click Next.**

Please wait while the wizard configures the computer.
It may take a few minutes.

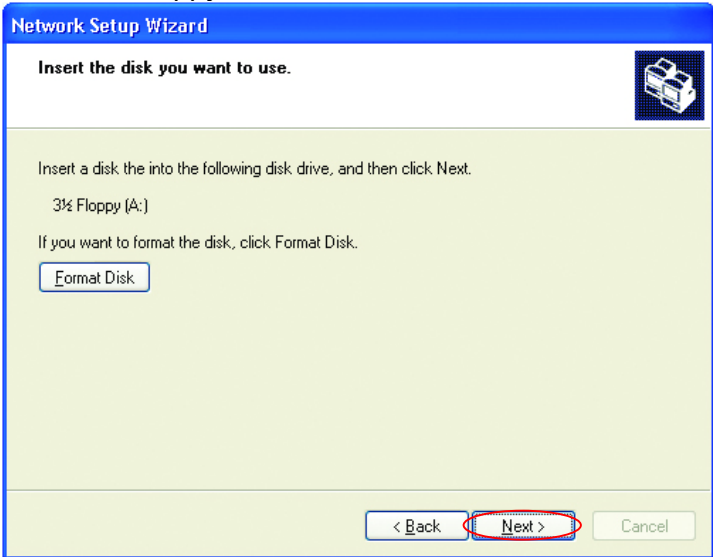


Networking Basics (continued)

In the window below, select the best option. 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.**



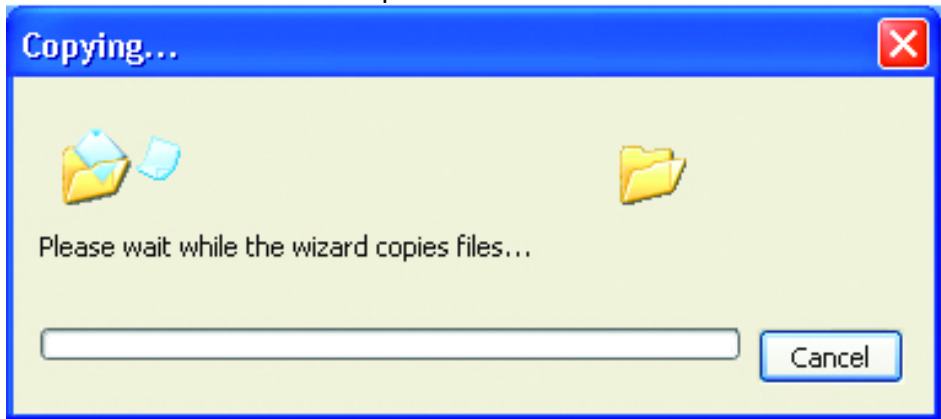
Insert a disk into the Floppy Disk Drive, in this case drive “A:”



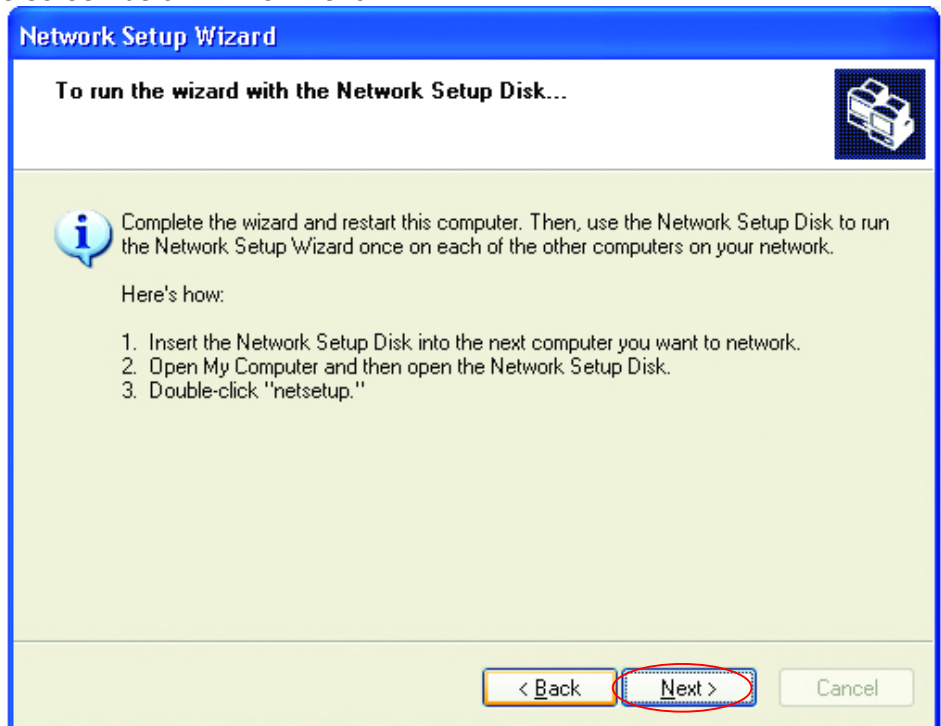
Format the disk if you wish, and **Click Next.**

Networking Basics (continued)

Please wait while the wizard copies the files.

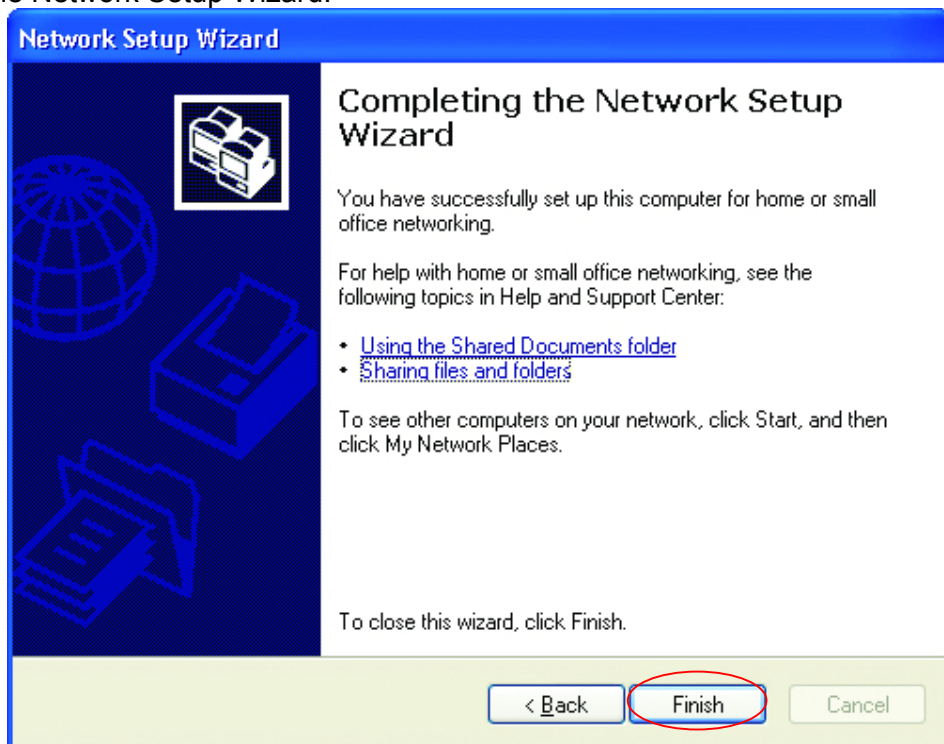


Complete the wizard and restart this computer. Then, use the **Network Setup Disk** to run the **Network Setup Wizard** once on each of the computers on your network. Please read the “**Here’s How**” instructions in the screen below. **Click Next.**

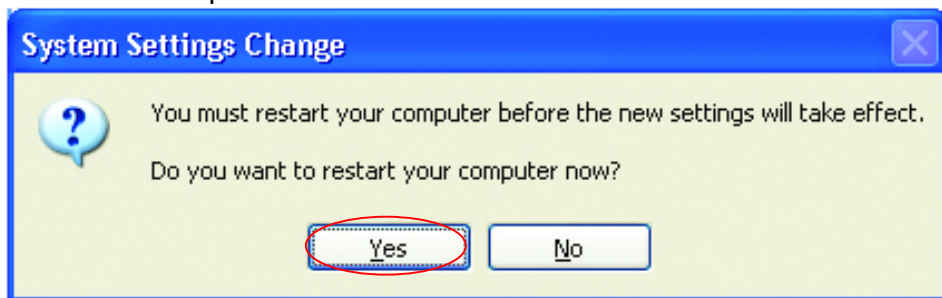


Networking Basics (continued)

After you have read the information on this screen, **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 run the Network Setup disk on all the other computers on your network. After you have run the disk on all your computers, your new wireless network will be ready to use.

Networking Basics *(continued)*

Sharing Printers

To share a printer go to **START>CONTROL PANEL**. Click **Printers and other Hardware**, then click **Printers and Faxes**. Right-click on the printer you want to share, click **Sharing**. At the window, select the **Sharing Tab**. Choose **Share this Printer** and type in the **Share Name** for the printer. The printer will now be available to all the computers on your network.

For help with other tasks in home or small office networking, see **Using the Shared Documents** folder and **Sharing files and folders** in the **Help and Support Center** in Microsoft Windows XP.

Technical Specifications

Chipset

- Intersil Prism 2.5

Standards

- IEEE 802.11b
- Wi-Fi compliant
- PCI power bus management interface specification - 1.0 compliant
- ACPI 1.0 compliant

Local Bus Architecture

- PCI 2.2 compliant

Management Utility

- Diagnostics
- Link Configuration for joining wireless networks

Protocols

- TCP/IP
- IPX/SPX
- NetBEUI
- NDIS5.1
- DHCP

System Requirements

- Desktop with an available PCI 2.2 compliant slot

Supported OS

- Windows XP
- Windows 2000
- Windows Me
- Windows 98

Data Security

- 64/128-bit WEP (Wired Equivalent Privacy) Encryption

Data Rate & Modulation

- 11 Mbps: CCK
- 5.5 Mbps: CCK
- 2 Mbps: DQPSK
- 1 Mbps: DBPSK

Range

- Indoors – per cell, up to 230 feet
- Outdoors – per cell, up to 984 feet

Diagnostic LED

- Power

Media Access Control

- CSMA/CA with ACK

Current Consumption

- 350mA

Operating Voltage

- 5.0V \pm 5%

Transmit Power

- 13dBm @ Nominal Temp Range

Receive Sensitivity

Nominal Temp Range

- 11 Mbps 10-5 BER @-80 dBm, minimum

Network Architecture

- Supports Ad-Hoc Mode (Peer-to-Peer without Access Point) or Infrastructure Mode (Communications to wired networks via Access Points with Roaming)

Antenna

- External OdBi dipole antenna

Frequency Range

- 2.400-2.4835 GHz, Direct Sequence Spread Spectrum (DSSS)

Operating Channels

- 1-11 United States (FCC)
- 1-11 Canada (DOC)
- 1-14 Japan (MKK)
- 1-13 Europe (Except Spain and France) (ETSI)

Physical Dimensions

- L = 4.02 inches
- W = 2.78 inches
- H = 0.79 inches
- Weight = 1.42 lbs.

Temperature

- Operating: 32°F to 131°F
- Storing: -4°F to 140°F

Humidity

- Max. 95%, non-condensing

Emissions

- FCC part 15B, 15C; R&TTE; TELEC/JATE

Warranty

- One Year

Contacting Technical Support

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

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

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

D-Link Technical Support over the Telephone:

(800) 758-5489

24 hours a day, seven days a week.

D-Link Technical Support over the Internet:

<http://support.dlink.com>

Limited Warranty and Registration

D-Link Systems, Inc. ("D-Link") provides this 1-Year warranty for its product only to the person or entity who originally purchased the product from:

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

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

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

- Hardware (excluding power supplies and fans)
- Spare parts and spare kits Ninety (90) days.

D-Link's sole obligation shall be to repair or replace the defective Hardware at no charge to the original owner. 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 of an identical make, model or part; D-Link may in its 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. The Warranty Period shall extend for an additional ninety (90) days after any repaired or replaced Hardware is delivered. 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 delivery of the Software for a period of ninety (90) days ("Warranty Period"), if 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. 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. The Warranty Period shall extend for an additional ninety (90) days after any replacement Software is delivered. 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.

What You Must Do For Warranty Service:

Registration is conducted via a link on our Web Site (<http://www.dlink.com/>). Each product purchased must be individually registered for warranty service within ninety (90) days after it is purchased and/or licensed.

FAILURE TO PROPERLY TO REGISTER MAY AFFECT THE WARRANTY FOR THIS PRODUCT.

Submitting A Claim. Any claim under this limited warranty must be submitted in writing before the end of the Warranty Period to an Authorized D-Link Service Office.

- The customer must submit 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.

- The customer is responsible for all shipping charges to and from D-Link (No CODs allowed). Products sent COD will become the property of D-Link Systems, Inc. Products should be fully insured by the customer and shipped to **D-Link Systems Inc., 53 Discovery Drive, Irvine CA 92618.**

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 that 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; and Any hardware, software, firmware or other products or services provided by anyone other than D-Link.

Disclaimer of Other Warranties: EXCEPT FOR THE 1-YEAR LIMITED WARRANTY SPECIFIED HEREIN, THE PRODUCT IS PROVIDED "AS-IS" WITHOUT ANY WARRANTY OF ANY KIND 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, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, 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.

GOVERNING LAW: This 1-Year 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.

Trademarks

Copyright© 2002 D-Link Corporation. Contents subject to change without prior notice. D-Link is a registered trademark of D-Link Corporation/D-Link Systems, Inc. All other trademarks belong to their respective proprietors.

Copyright Statement

No part of this publication may be reproduced in any form or by any means or used to make any derivative such as translation, transformation, or adaptation without permission from D-Link Corporation/D-Link Systems Inc., as stipulated by the United States Copyright Act of 1976.

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.

Registration

Register your D-Link *Air* DWL-120 online at
<http://www.dlink.com/sales/reg>