

D-LINK *Air* DWL-120

2.4GHz Wireless USB Adapter

Manual

(10/15/2002)

D-Link
Building Networks for People

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Package Contents



Contents of Package:

- **D-Link Air DWL-120**
2.4 GHz Wireless USB Adapter
- Manual, Warranty and Drivers on CD
- Quick Installation Guide

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

System Requirements:

- A computer with an available USB port
- Windows XP, Windows 2000, Windows Me, or Windows 98SE
- At least 32 MB of memory and a 300 MHz processor
- An 802.11b Access Point or Router (e.g., DWL-900AP for **Infrastructure Mode**) or another 802.11b wireless adapter (e.g., DWL-650 for **Ad-Hoc mode**.)

Introduction

The D-Link *Air* DWL-120 2.4GHz Wireless USB Adapter is an ideal way to extend the reach and number of computers connected to your wireless network. After completing the steps outlined in the Quick Installation 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 98SE 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.

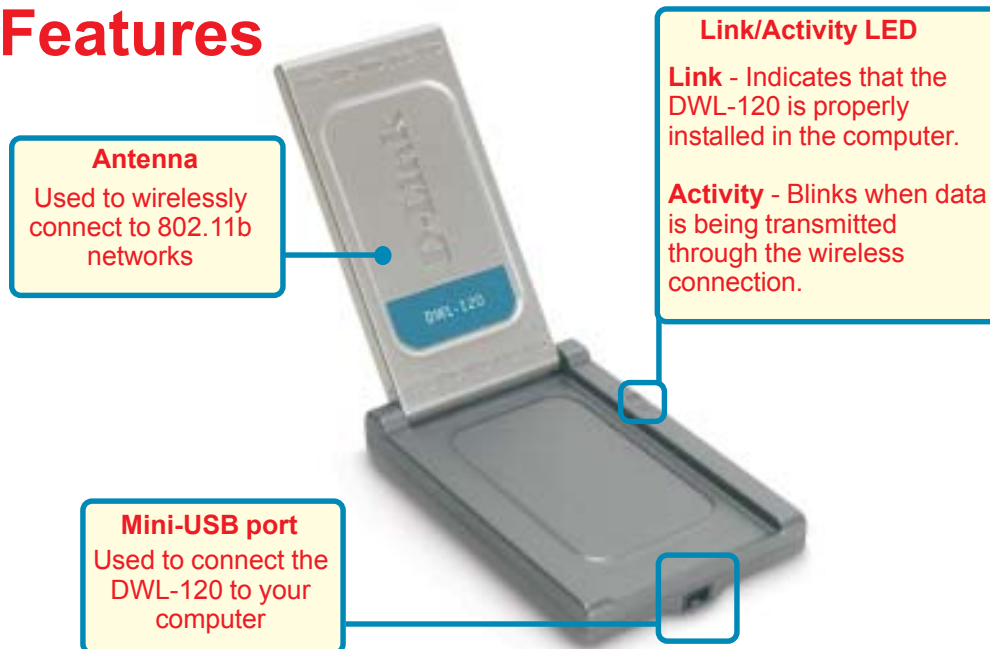
This manual provides a quick introduction to wireless technology and its application as it relates to networking. Take a moment to read through this manual and familiarize yourself with wireless technology. You should also give yourself some time to become familiar with your new wireless network.

Features and Benefits

- Provides high-speed wireless connection at up to 11Mbps
- Operates in the 2.4 to 2.4835 GHz Direct Sequence Spread Spectrum
- Supports wireless data encryption with 64-bit WEP and 128-bit WEP for more secure networking
- Supports infrastructure networks via an Access Point and peer-to-peer communication in ad-hoc mode
- User-friendly configuration and diagnostic utilities
- Cost-effective wireless solution
- IEEE 802.11b and Wi-Fi Certified
- Connects at up to 328 feet indoors*
- WHQL Certification for Windows XP
- Easy installation
- One year warranty

* *Environmental factors may adversely affect range*

Features



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. Strictly adhering to the IEEE standard, the D-Link wireless family of products will allow you to securely access the data you want, when and where you want it. You will be able to enjoy the freedom that wireless networking delivers.

A wireless local area network (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, 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.

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 Router is a device used to provide this link.

Wireless Basics (*continued*)

People use wireless LAN technology for many different purposes:

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

Low Implementation Costs – WLANs (Wireless Local Area Networks) 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.

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.

Network Expansion - Wireless technology allows the network to go where wires cannot.

Scalability – Wireless Local Area Networks (WLANs) can be configured in a variety of topologies to meet the needs of specific applications or existing infrastructures. 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-120 is compatible with the D-Link Air 802.11b family of products which include:

- ◆ 2.4GHz Wireless Cardbus Adapters used with laptop computers (DWL-650)
- ◆ 2.4GHz Wireless PCI cards used with desktop computers (DWL-520)
- ◆ Wireless Access Points (DWL-900AP)

Standards-Based Technology

Based on the IEEE **802.11b** standard, the DWL-120 is interoperable with existing compatible 2.4GHz wireless technology with data transfer speeds of up to 11Mbps.

Wireless Basics (continued)

Installation Considerations

The D-Link *Air* DWL-120 lets you access your network, using a wireless connection, from virtually anywhere. 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 antenna of the DWL-120 in an upright position.
2. Keep the number of walls and ceilings between the DWL-120 and other network devices to a minimum - each wall or ceiling can reduce your D-Link *Air* Wireless product's range from 3-90 feet (1-30 meters.) Position your receiving devices so that the number of walls or ceilings is minimized.
3. 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! Try to make sure that devices are positioned so that the signal will travel straight through a wall or ceiling for better reception.
4. Building Materials make a difference - 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.
5. Keep your product away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that generate RF noise.

Getting Started

With its default settings, the DWL-120 will connect with other D-Link *Air* products, right out of the box.

There are basically two modes of networking:

Infrastructure – using an Access Point, such as the DWL-900AP+.

Ad-Hoc – directly connecting to another computer, for peer-to-peer communication, using wireless network adapters on each computer, such as two or more DWL-120 wireless network USB adapters.

On the following pages we will show you an example of an **Infrastructure Network** and an **Ad-Hoc Network**.

An **Infrastructure** network contains an Access Point or 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 Router - **D-Link AirPro DI-764**

A laptop computer with a wireless adapter -
D-Link AirPlus DWL-650+

A desktop computer with another **D-Link Air DWL-120**

A Cable modem - **D-Link DCM-200**

Getting Started

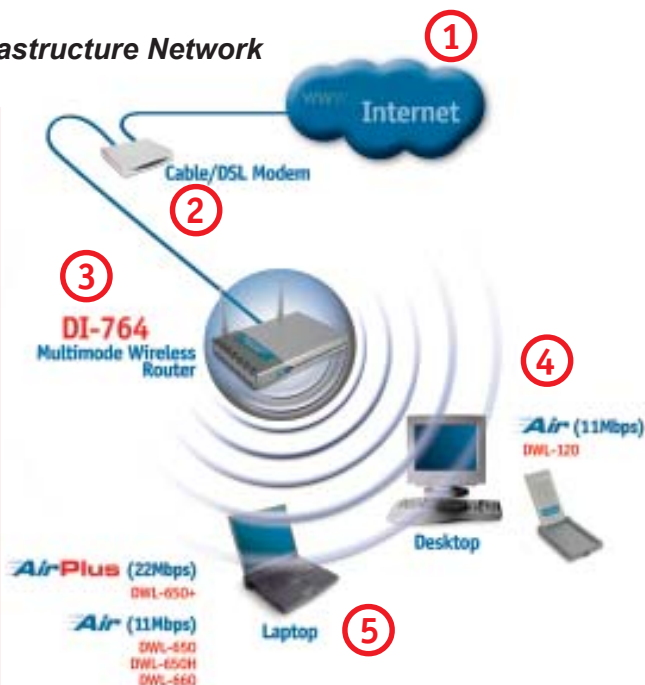
Setting up a Wireless Infrastructure Network

Please refer to the following sections of this manual for additional information about setting up a network:

Networking Basics - learn how to check and assign your IP Address; share printers and files.

Using the Configuration Menu - learn the settings for the DWL-120, using the web-based interface.

Troubleshooting - learn how to check for common installation issues and other tips for troubleshooting.



Please remember that **D-Link Air** 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 your broadband router (see the *Quick Installation Guide* included with your router.)
- 4** Install the D-Link Air DWL-120 wireless USB adapter into an available USB port on your desktop computer. (See the *Quick Installation Guide* included with the DWL-120.)
- 5** If you are connecting a laptop computer to your network, install the drivers for the wireless cardbus adapter (e.g., **DWL-650+** or the **DWL-650**) into a laptop computer. (See the *Quick Installation Guide* included with the DWL-A650, DWL-650+, or DWL-650.)

Getting Started

Setting up a Wireless Ad Hoc Network



- 1** Install the **D-Link Air DWL-120** Wireless USB adapter into the desktop computer. See the **Quick Installation Guide** included with the product for installation instructions.
- 2** Install a wireless network adapter into the laptop computer. In the example above the **DWL-650+ or DWL-650** may be installed into a laptop computer. See the **Quick Installation Guide** included with the product.
- 3** Set the wireless configuration for the adapters to Ad-Hoc mode, set the adapters to the same channel, and assign an IP Address to each computer on the Ad-Hoc network. (See Box below)

IP Address

When assigning IP Addresses to the computers on the network, please remember that the **IP Address for each computer must be in the same IP Address range as all the computers in the network**, and the subnet mask must be exactly the same for all the computers in the network.


For example: If the first computer is assigned an IP Address of 192.168.0.2 with a Subnet Mask of 255.255.255.0, then the second computer can be assigned an IP Address of 192.168.0.3 with a Subnet Mask of 255.255.255.0, etc.

IMPORTANT: If computers or other devices are assigned the same IP Address, one or more of the devices may not be visible on the network.

Using the Configuration Utility

With its default settings, the DWL-120 will connect with other D-Link *Air* products, right out of the box.

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. **Double-click** on the icon shown above. The screen below will be displayed with the following default settings:

Associated SSID:

The Service Set Identifier is the name assigned to the wireless network. The factory SSID setting is set to default.

MAC Address:

Displays the MAC Address of the Access Point that is associated with the DWL-120.

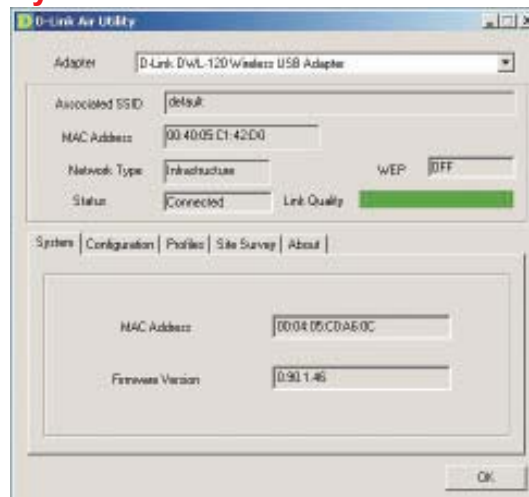
Network Type:

The default setting is Infrastructure. Ad-Hoc mode is used for peer-to-peer networking.

Status:

Displays the current connection state of the DWL-120.

System



WEP:

(Wired Equivalent Privacy)
Displays encryption status.

Link Quality:

Displays the wireless signal strength for the DWL-120 wireless connection to the access point.

Using the Configuration Utility

Configuration



Network Type:

Infrastructure is the factory default setting. Ad-Hoc mode is used for peer to peer networking. See the *Getting Started* section in this manual for examples of these network types.

SSID:

The Service Set Identifier is the name assigned to the wireless network. The factory SSID setting is set to **default**. Make changes here to match the SSID on existing Wireless Router or Access Point.

Tx Rate:

You can adjust the transmission rate to get the best signal possible depending on your usage and your environment.

Default Setting:

Reverts the DWL-120 back to its factory default settings

WEP Setting:

Will allow you to configure the Encryption for your DWL-120. By default WEP is **disabled**.

Advanced Setting:

To configure advanced settings for Power, RTS and Fragmentation Threshold.

Using the Configuration Utility

Configuration>WEP Setting



If you enable **WEP encryption** make sure to match the WEP encryption on the router or access point.

WEP stands for Wired Equivalent Privacy. It is a security protocol for Wireless Local Area Networks

Hexadecimal format consists of numbers 0-9 and letters a-f.

WEP type:

Select **128 bit** WEP or **64 bit** WEP encryption

Default Key ID:

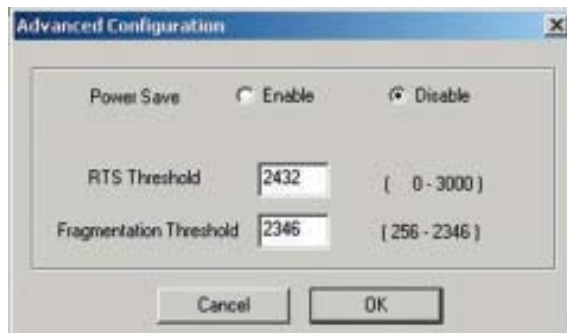
1 is the default key, or you may select a key from 1-4

Input WEP keys:

Input up to 4 WEP keys in hexadecimal format

Click **OK** if you have made any changes

Configuration>Advanced Setting



Power Save:

Select Enable or Disable; **Disable** is the default setting

RTS Threshold:

Request to Send threshold measures the value in bytes. Any packet size exceeding 2432 will trigger the DWL-120 to use RTS/CTS mechanism for transmission.

Fragmentation Threshold:

The fragmentation threshold, which is specified in bytes, determines whether packets will be fragmented. Packets exceeding the 2346 byte setting will be fragmented before transmission.

Click **OK** if you have made any changes

Using the Configuration Utility

Profiles



New:

Click **New** to create a new profile; a pop-up window will appear allowing you to configure the new profile. (See the example on the next page.)

Remove:

Highlight the profile you wish to remove; click **Remove**

Edit:

Highlight the profile you wish to edit; click **Edit**; a pop-up window will appear allowing you to edit the profile. (See the example on the next page.)

Duplicate:

Highlight the profile you wish to duplicate; click **Duplicate**

Configuration >Save:

Click **Save** to save the new profile

Configuration >Apply:

Click **Apply** to use a selected profile for your network configuration

File >Import:

Click on **Import** to select an existing profile on your hard drive

File >Export:

Click on **Export** to save a selected profile to your hard drive

Click OK if you have made any changes

Using the Configuration Utility

Network Type:

Select Infrastructure or Ad-Hoc

SSID:

All devices on the network must share the same SSID to be able to communicate

TxRate:

Choose the data rate speed

WEP:

Choose Enable or Disable. Disable is the default setting. If you enable WEP, you must Enable WEP on all devices on the network, in order to communicate.

Advanced Setting:

Click to access Advanced configuration

Edit/Create new profile

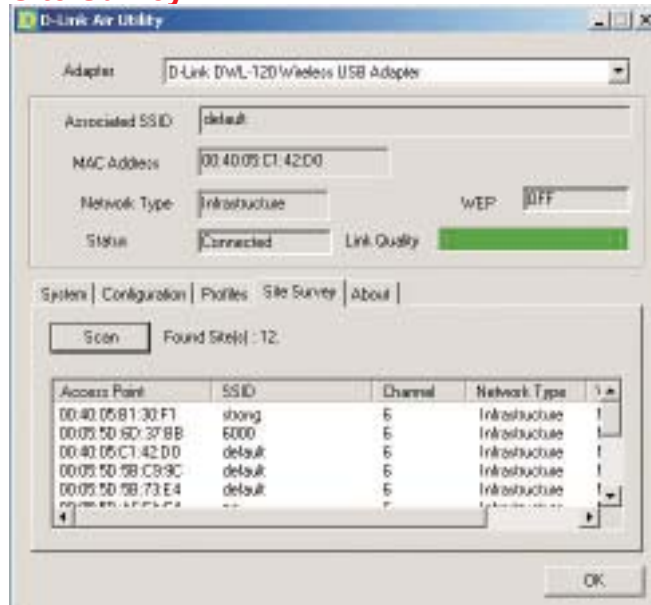


WEP Setting:

Click to configure the WEP setting

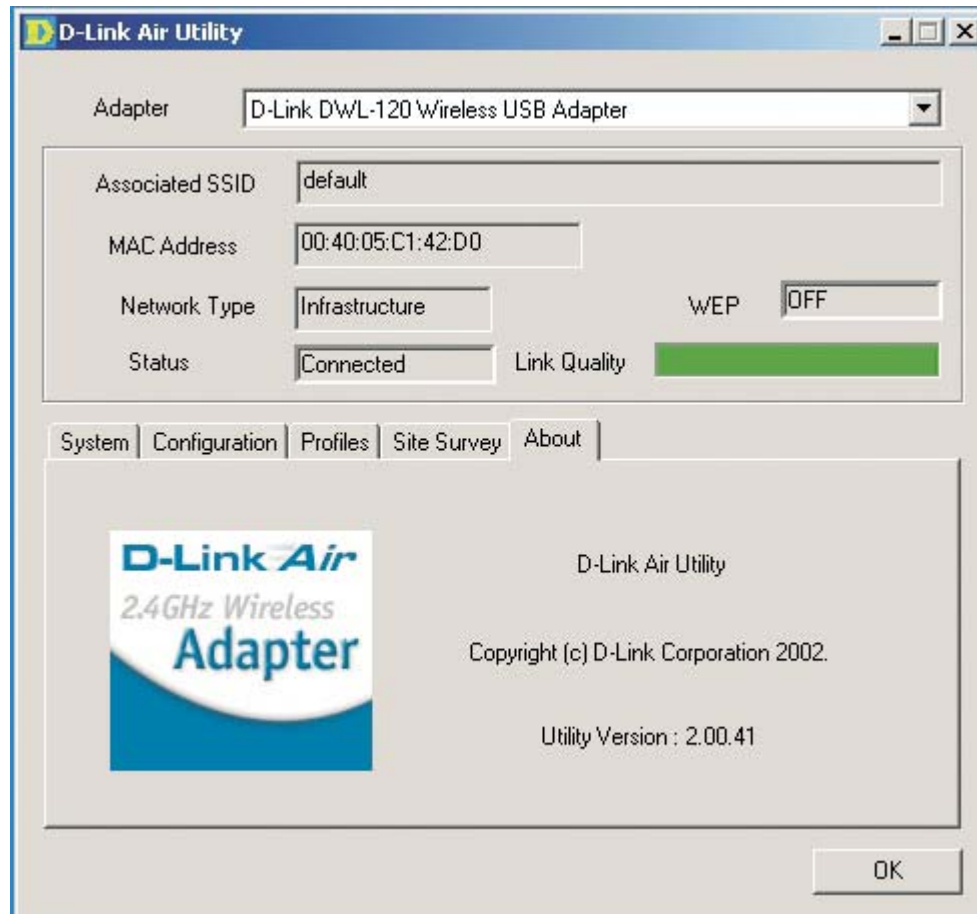
Click **OK** if you have made any changes

Site Survey



View all the devices in the network from the **Site Survey** tab.

Using the Configuration Utility



The **About** tab displays the utility (firmware) version.

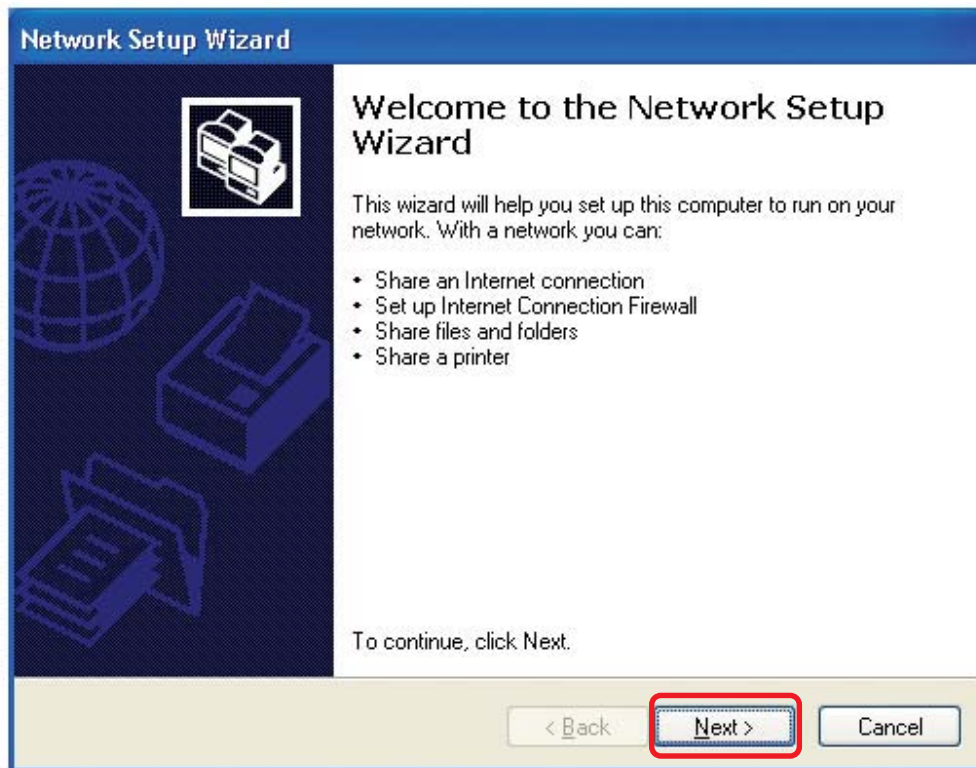
Networking Basics

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 or 98SE.

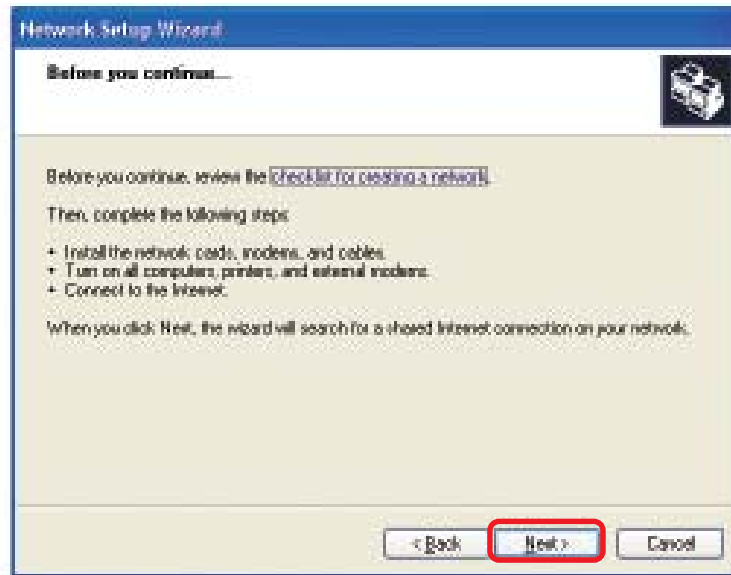
Go to **Start>Control Panel>Network Connections**
Select **Set up a home or small office network**



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

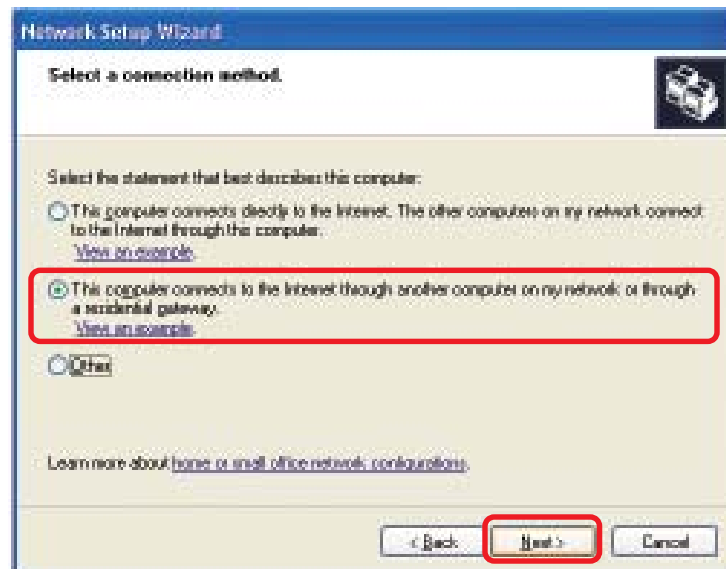
Networking Basics

Please follow all the instructions in this window:



Click **Next**

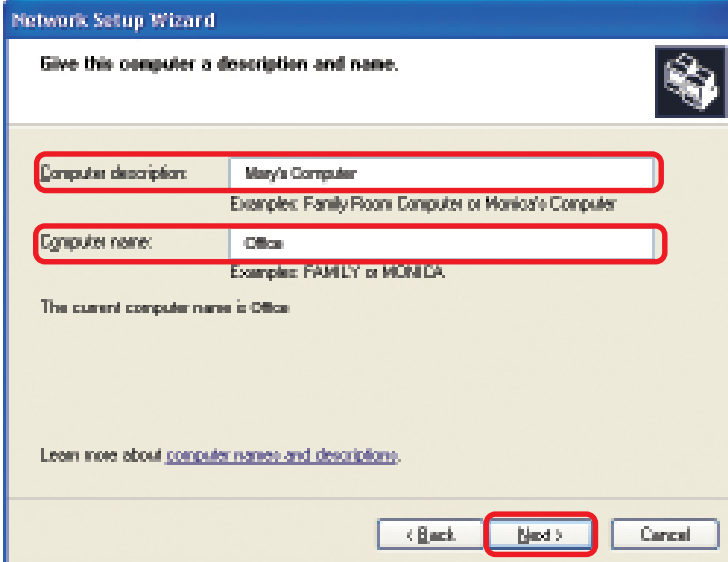
In the following window, select the best description of your computer. If your computer connects to the internet through a gateway/router, select the second option as shown.



Click **Next**

Networking Basics

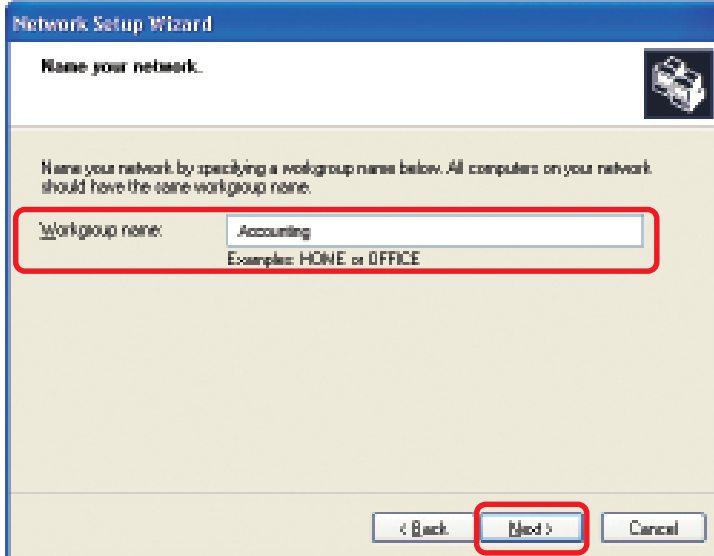
Enter a **Computer description** and a **Computer name** (optional.)



The screenshot shows the 'Network Setup Wizard' window with the title 'Give this computer a description and name.' The window contains two text input fields, both highlighted with red rectangles. The first field is labeled 'Computer description:' and contains the text 'Mary's Computer'. Below it, there is a smaller text label 'Examples: Family Room Computer or Monica's Computer'. The second field is labeled 'Computer name:' and contains the text 'Office'. Below it, there is a smaller text label 'Examples: FAMILY or MONICA'. 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.

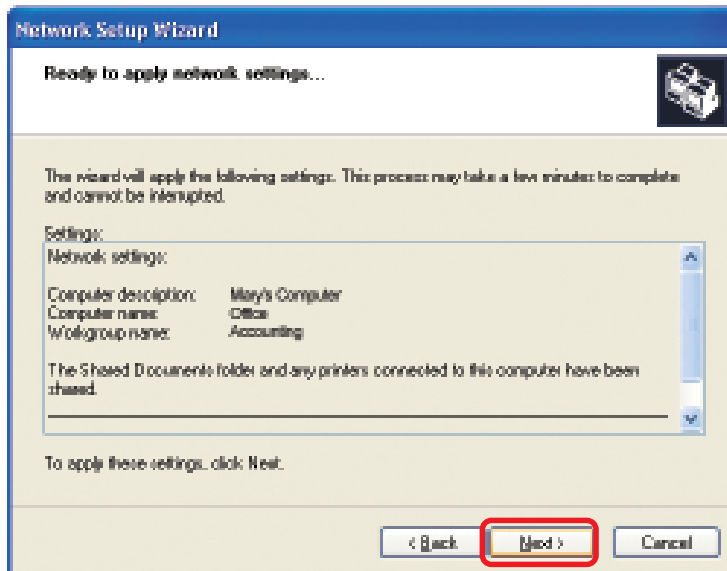


The screenshot shows the 'Network Setup Wizard' window with the title 'Name your network.' The window contains one text input field, highlighted with a red rectangle, labeled 'Workgroup name:' and containing the text '.Accounting'. Below it, there is a smaller text label 'Examples: HOME or OFFICE'. At the bottom of the window, there are three buttons: '< Back', 'Next >', and 'Cancel'. The 'Next >' button is highlighted with a red rectangle.

Click **Next**

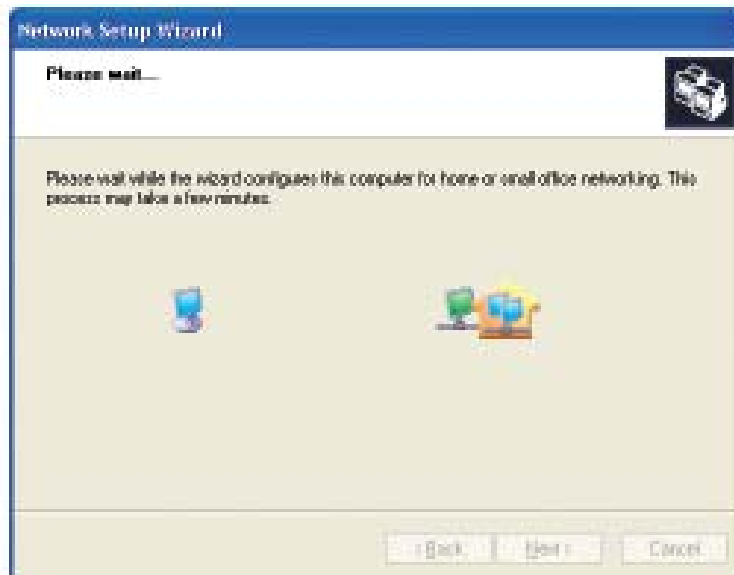
Networking Basics

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



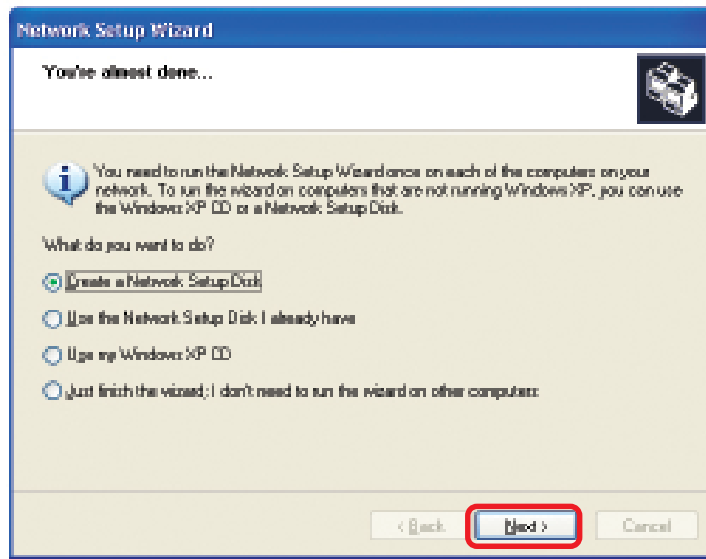
When the changes are complete, click **Next**.

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

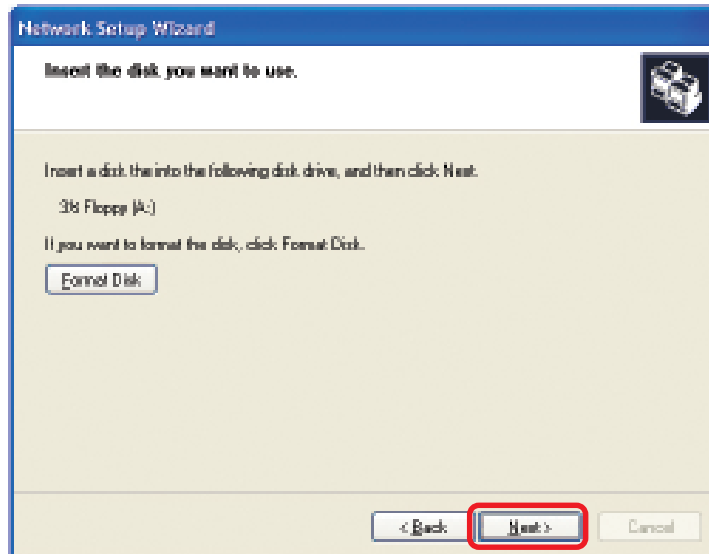


Networking Basics

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**.



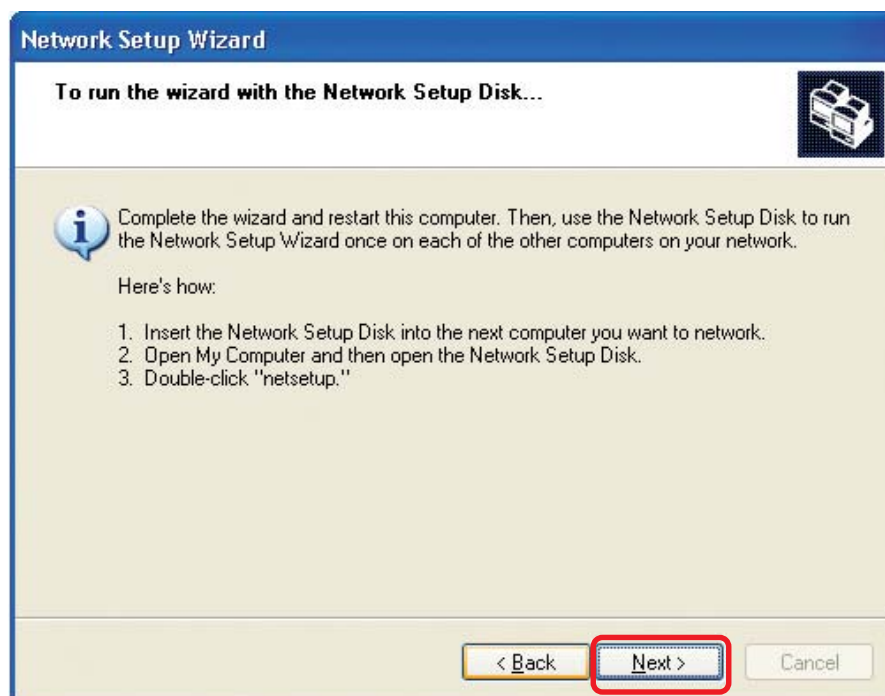
Insert a disk into the Floppy Disk Drive, in this case drive **A**.



Networking Basics

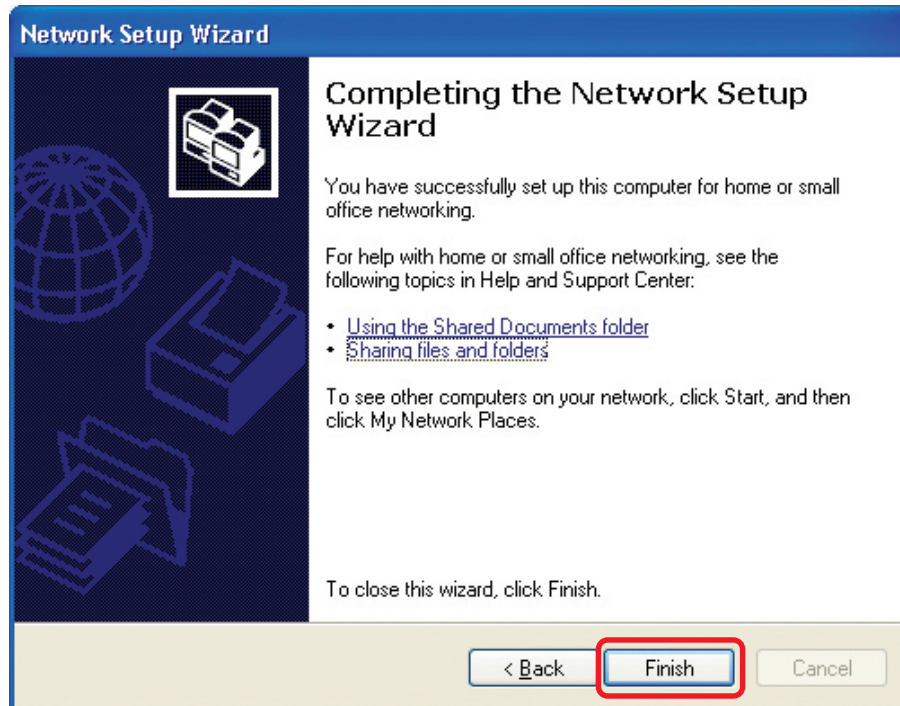


Please read the information under **Here's how** in the screen below. After you complete the **Network Setup Wizard** you will use the **Network Setup Disk** to run the **Network Setup Wizard** once on each of the computers on your network. To continue click **Next**.



Networking Basics

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

Naming your Computer

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

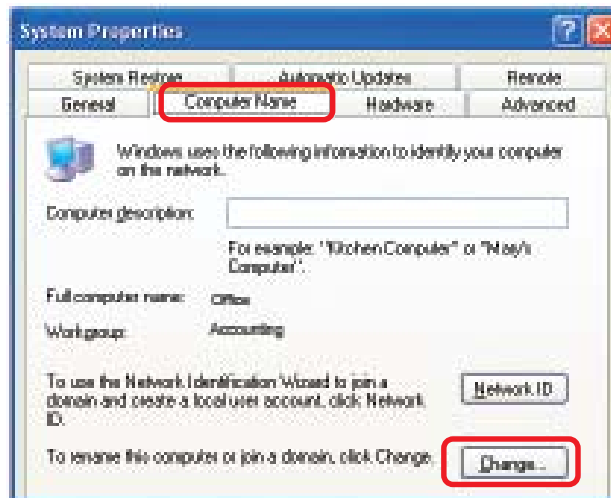
- Click **Start** (in the lower left corner of the screen)
- **Right-click** on **My Computer**
- Select **Properties** and click



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

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

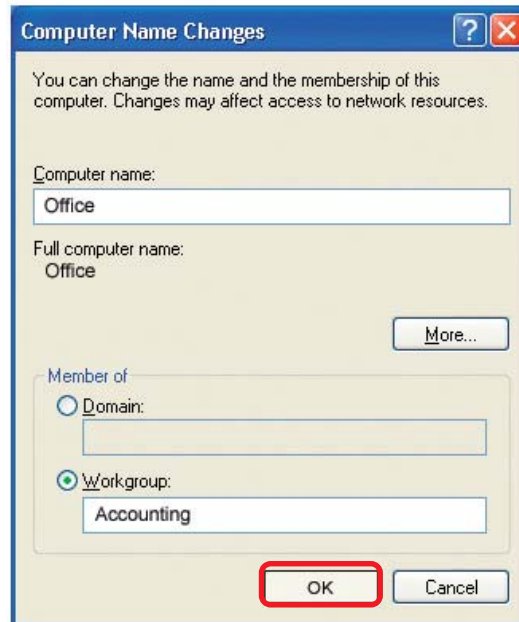
- To rename the computer and join a domain, Click **Change**.



Networking Basics

Naming your Computer

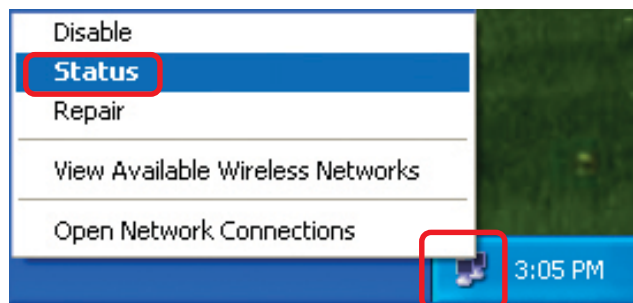
- In this window, enter the **Computer name**
- Select **Workgroup** and enter the name of the **Workgroup**
- All computers on your network must have the same **Workgroup** name.
- Click **OK**



Checking the IP Address in Windows XP

The wireless 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**



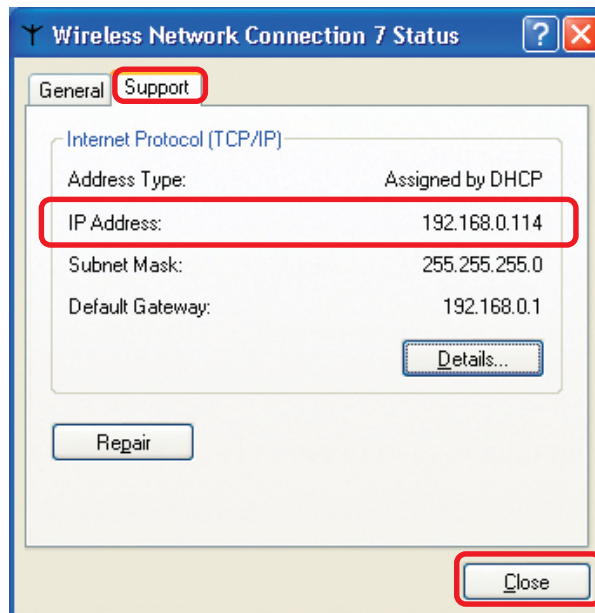
Networking Basics

Checking the IP Address in Windows XP

This window will appear.

- Click the **Support** tab

- Click **Close**



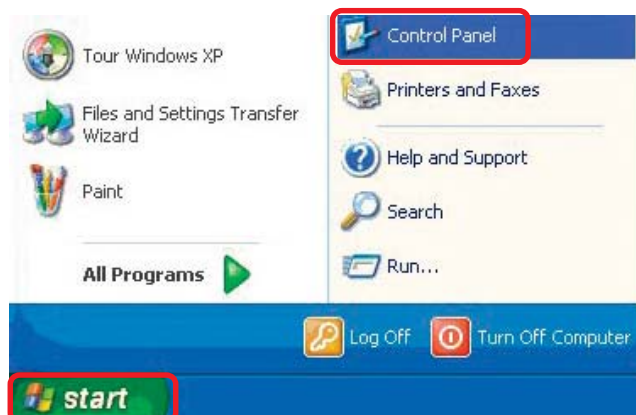
Assigning a Static IP Address in Windows XP/2000

Note: Residential Gateways/Broadband 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 Gateway/Router you will not need to assign Static IP Addresses.

If you are not using a DHCP capable Gateway/Router, or you need to assign a Static IP Address, please follow these instructions:

- Go to **Start**

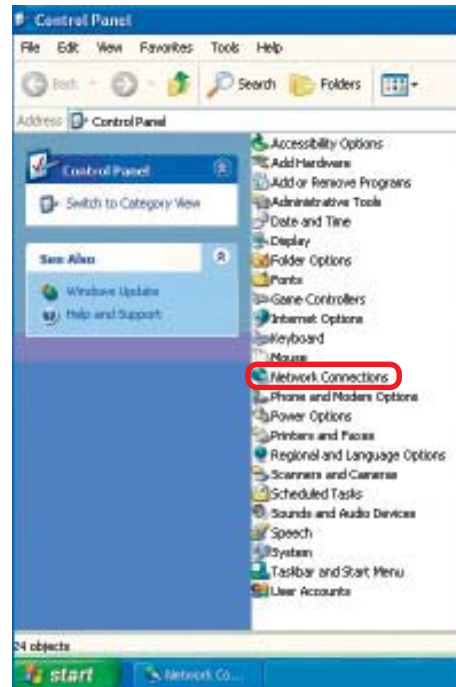
- Double-click on **Control Panel**



Networking Basics

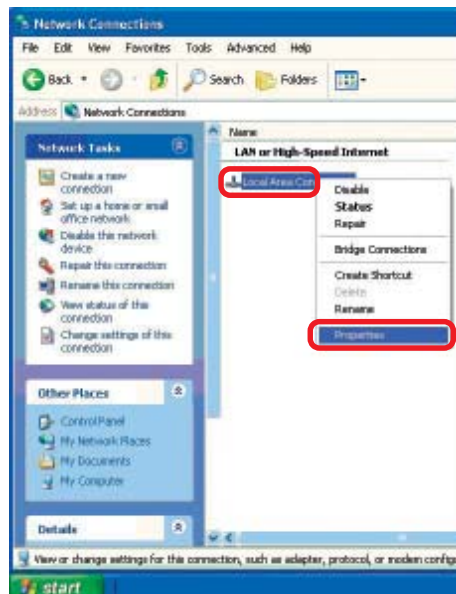
Assigning a Static IP Address in Windows XP/2000

- Double-click on **Network Connections**



- Right-click on **Local Area Connections**

- Double-click on **Properties**



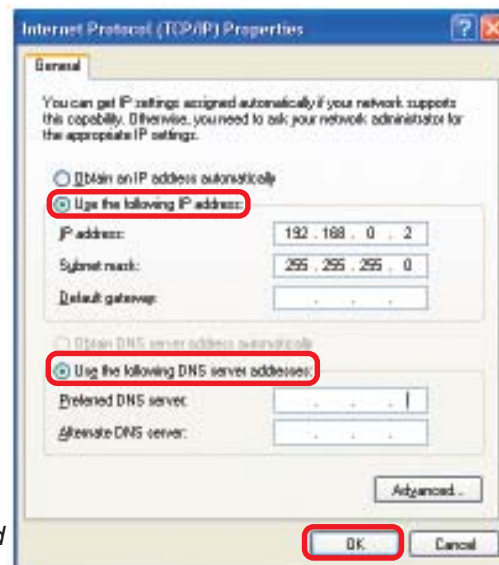
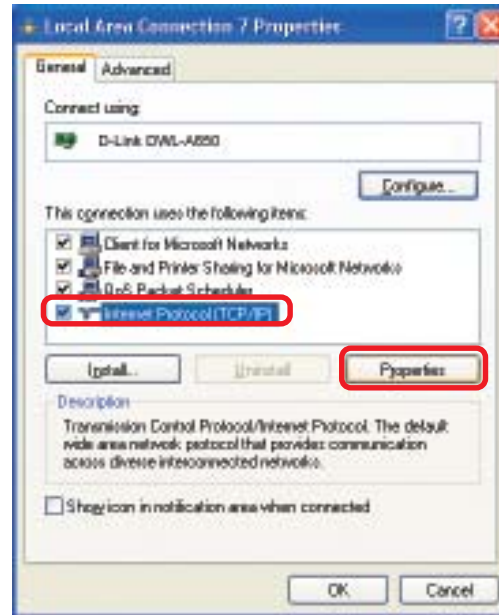
Networking Basics

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.)

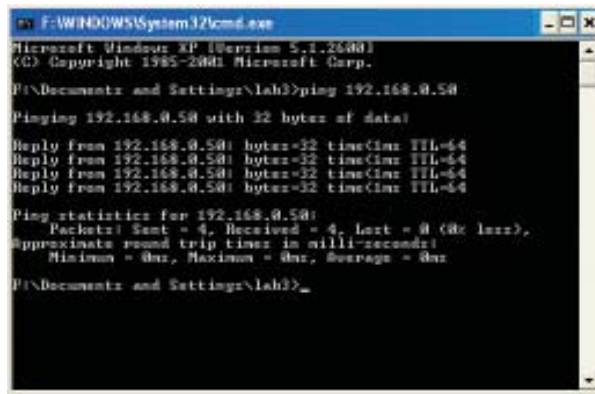
- Click **OK**



Networking Basics

Checking the Wireless Connection by Pinging in Windows XP and 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\lah3>ping 192.168.0.50

Pinging 192.168.0.50 with 32 bytes of data:

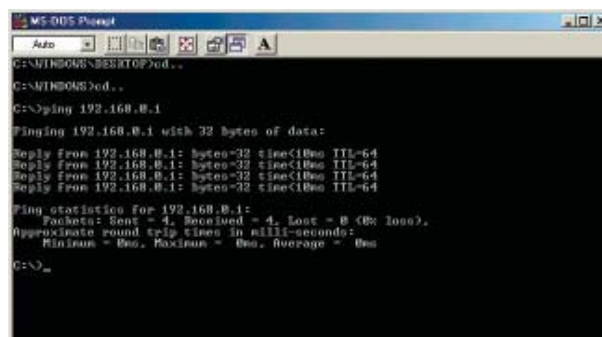
Reply from 192.168.0.50: bytes=32 time<1ms TTL=64
Reply from 192.168.0.50: bytes=32 time<1ms TTL=64
Reply from 192.168.0.50: bytes=32 time<1ms TTL=64
Reply from 192.168.0.50: bytes=32 time<1ms TTL=64

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\lah3>_
```

Checking the Wireless Connection by Pinging in Windows Me and 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

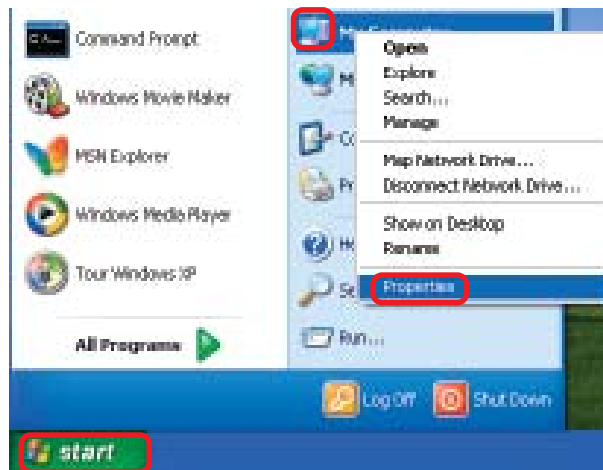
C:\>_
```


Troubleshooting

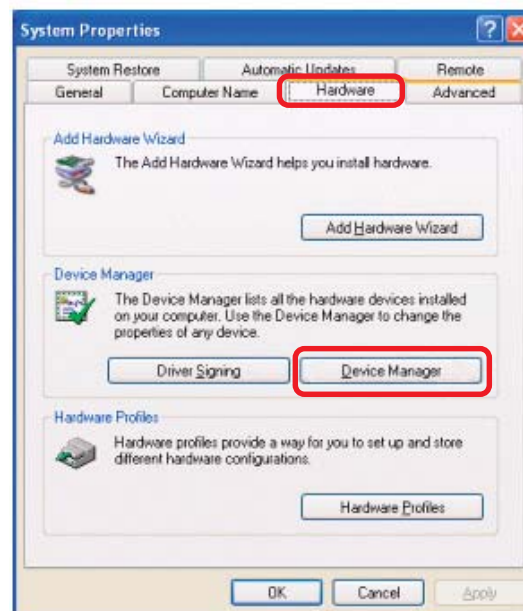
This chapter provides solutions to problems that can occur during the installation and operation of the DWL-120. Read the following descriptions if you are having problems. (The examples below are illustrated in Windows XP. If you have another operating system, these solutions will still apply although the appearance on your computer screen may differ.)

1. Check that the drivers for the DWL-120 are installed properly.

- Go to Start > My Computer > Properties



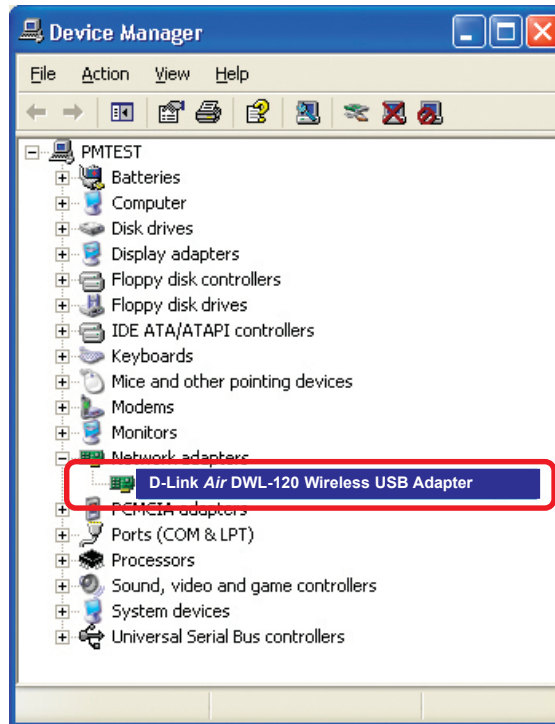
- Select the Hardware Tab



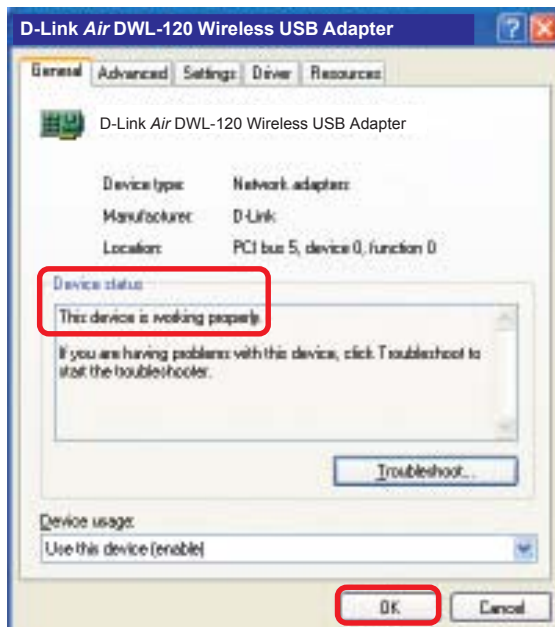
- Click Device Manager

Troubleshooting

- Double-click on **Network Adapters**
- Right-click on **D-Link Air DWL-120 Wireless USB Adapter**
- 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

2. 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.

3. Why does my wireless connection keep dropping?

- Antenna Orientation- Try different antenna orientations for the DWL-120. 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.

4. Why can't I get a wireless connection?

If you have enabled Encryption on the DWL-120, you must also enable encryption on all wireless devices in the network in order to establish a wireless connection.

- The Encryption settings are: 64 or 128 bit. Make sure that the encryption bit level is the same on the Router and the DWL-120.
- Make sure that the SSID on the Router (if you have one in your network) and the DWL-120 are exactly the same. If they are not, wireless connection will not be established. The default SSID is **default**.

Technical Specifications

Standard

- IEEE 802.11b
- WIFI Certified
- WHQL Certified

Diagnostic LED

- Power
- Link Status

Temperature

- Operating: 0°C to 55°C (32°F to 131°F)
- Storing: -20°C to 75°C (-4°F to 167°F)

Humidity:

- 95%, non-condensing

Antenna Type:

- Integrated

Modulation Technique:

- DSSS

Physical Dimensions:

- L = 3.3 inches
- W = 2.1 inches
- H = 0.2 inches

Data Rates:

- 1,2,5.5,11 Mbps (with Automatic Fallback)

Interface:

- USB 1.1

Available Channels:

- Eleven channels for North America

Media Access Protocol:

- CSMA/CA with ACK

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:

(877) 453-5465

24 hours a day, seven days a week.

D-Link Technical Support over the Internet:

<http://support.dlink.com>

When contacting technical support, please provide the following information:

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

Warranty and Registration

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 of 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 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: 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. 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 shipping charges to D-Link. No Charge on Delivery (“COD”) is allowed. Products sent COD will either be rejected by D-Link or become the property of D-Link. Products should be fully insured by the customer and shipped to **D-Link Systems, Inc., 53 Discovery Drive, Irvine, CA 92618**. 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 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.

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

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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 the 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

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