D-Link®
Building Networks for People

Manual
Version 1.3

DWL-700AP
Wireless Access Point

Contents

Package Contents

Contents of Package:

- **D-Link Air® DWL-700AP**
  2.4GHz Wireless Access Point
- Power Supply - 5V DC, 2.0A
- Manual on CD
- Quick Installation Guide
- Ethernet Cable

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

Note: Using a power supply with a different voltage rating than the one included with the DWL-700AP will cause damage and void the warranty for this product.

System Requirements:

- Computer with Windows, Macintosh, or Linux-based operating system with an installed Ethernet adapter
- Internet Explorer or Netscape Navigator version 6.0 or above, with JavaScript enabled

Introduction

The versatile D-Link Air DWL-700AP Wireless Access Point is an 802.11b high-performance wireless device that can be used in one of three modes: as an access point, a repeater, or a wireless client. It is an ideal way to extend the reach and number of computers connected to your wireless network.

The DWL-700AP is compatible with existing 802.11b devices such as the D-Link Air and AirPlus family of products including the DWL-650 and DWL-650+ Wireless Cardbus Adapters, the DI-614+ Wireless Router, and the DWL-120 Wireless USB Adapter.

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 enjoy the freedom that wireless networking brings.

The DWL-700AP is compatible with most popular operating systems, including Macintosh, Linux and Windows, and can be integrated into a larger network. This manual is designed to help you connect the Access Point and the D-Link Wireless Adapters into a network in Infrastructure mode. Please take a look at the Getting Started section in this manual to see an example of an Infrastructure network using the DWL-700AP.

The IEEE 802.11b Ethernet standard allows you to connect computers and 802.11b compatible 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.

* Maximum wireless signal rate based on IEEE Standard 802.11b specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead lower actual data throughput rate.

Features and Benefits

- **3 Operational Modes** – Use the DWL-700AP as an access point, a repeater, or a wireless client.

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

- **Provides a level of security with up to 128-bit WEP Encryption** – Supports 64 and 128-bit WEP encryption for a level of security for your data and wireless communication.

- **Built-in DHCP Server** – If enabled, it will automatically assign IP addresses to wireless clients on the local network.

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

LEDs

LED stands for **L**ight-**E**mitting **D**iode. The **DWL-700AP Wireless Access Point** has 3 LEDs as shown below:

Power: solid green light indicates connection to a power source

LAN: blinking green light indicates activity; solid green light indicates connection

WLAN: blinking green light indicates wireless activity; solid green light indicates connection
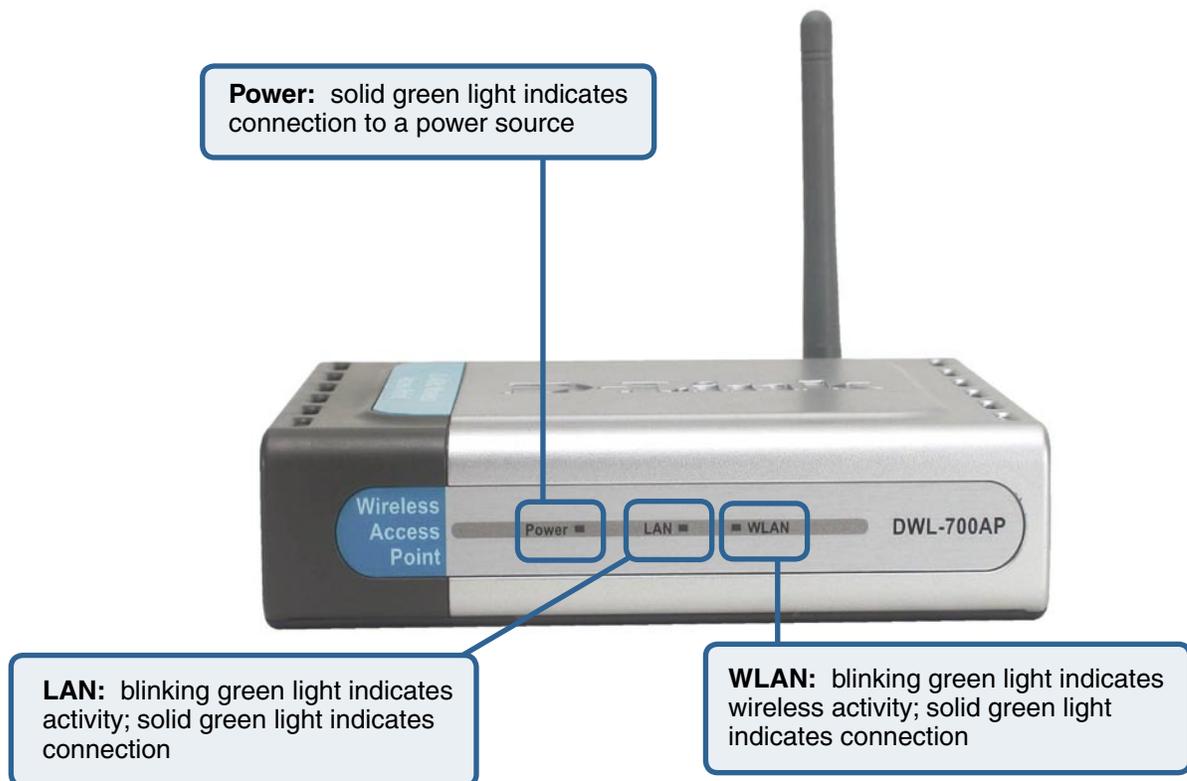
Wireless Basics

D-Link wireless products are based on industry standards to provide easy-to-use and compatible high-speed wireless connectivity within your home, business or public access wireless networks. D-Link wireless products will allow you access to the data you want, when and where you want it. You will be able to enjoy the freedom that wireless networking brings.

A Wireless Local Area Network (WLAN) is a cellular computer network that transmits and receives data with radio signals instead of wires. WLANs are used increasingly in both home and office environments, and public areas such as airports, coffee shops and universities. Innovative ways to utilize WLAN technology are helping people to work and communicate more efficiently. Increased mobility and the absence of cabling and other fixed infrastructure have proven to be beneficial for many users.

Wireless users can use the same applications they use on a wired network. Wireless adapter cards used on laptop and desktop systems support the same protocols as Ethernet adapter cards.

People use WLAN technology for many different purposes:

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

Low Implementation Costs – WLANs are easy to set up, manage, change and relocate. Networks that frequently change can benefit from WLANs ease of implementation. WLANs can operate in locations where installation of wiring may be impractical.

Installation and Network Expansion - Installing a WLAN system can be fast and easy and can eliminate the need to pull cable through walls and ceilings. Wireless technology allows the network to go where wires cannot go - even outside the home or office.

Scalability – WLANs can be configured in a variety of ways to meet the needs of specific applications and installations. Configurations are easily changed and range from Peer-to-Peer networks suitable for a small number of users to larger infrastructure networks to accommodate hundreds or thousands of users, depending on the number of wireless devices deployed.

Inexpensive Solution - Wireless network devices are as competitively priced as conventional Ethernet network devices.

Wireless Basics (continued)

Installation Considerations

The number, thickness and location of walls, ceilings, or other objects that the wireless signals must pass through, may limit the range. Typical ranges vary depending on the types of materials and background RF (radio frequency) noise in your home or business. The key to maximizing wireless range is to follow these basic guidelines:

1   Keep the number of walls and ceilings between the DWL-700AP 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 devices so that the number of walls or ceilings is minimized.

2   Be aware of the direct line between network devices. A wall that is 1.5 feet thick (.5 meters), at a 45-degree angle appears to be almost 3 feet (1 meter) thick. At a 2-degree angle it looks over 42 feet (14 meters) thick! Position devices so that the signal will travel straight through a wall or ceiling (instead of at an angle) for better reception.

3   Building Materials can impede the wireless signal - a solid metal door or aluminum studs may have a negative effect on range. Try to position wireless devices and computers with wireless adapters so that the signal passes through drywall or open doorways and not other materials.

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

Getting Started

Setting up a Wireless Infrastructure Network
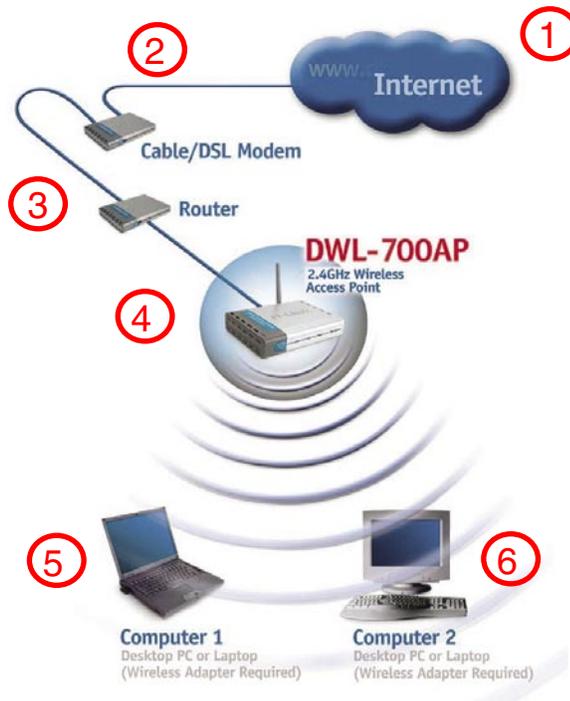
*Please remember that **D-Link Air** wireless devices are pre-configured to connect together, right out of the box, with their default settings.*

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 Connect the router to the **D-Link *Air* DWL-700AP.**
(See the **Quick Installation Guide** included with the DWL-700).

5 If you are connecting a desktop computer in your network, you can install the **D-Link *Air* DWL-520** Wireless PCI Adapter into an available PCI slot on your desktop computer.
(See the **Quick Installation Guide** included with the DWL-520).

6 Install the **D-Link *Air* DWL-650** Wireless Cardbus Adapter into a laptop computer.
(See the **Quick Installation Guide** included with the DWL-650).

Using the Configuration Utility

If you wish to change the default settings or optimize the performance of the DWL-700AP, D-Link has included a configuration utility for this purpose.

Whenever you want to configure your network or the DWL-700AP, you can access the Configuration Utility by opening the web-browser and typing in the IP address of the DWL-700AP. The DWL-700AP's default IP address is shown below:

- Open the web browser

- Type in the **IP address** of the access point

(The IP address shown in the example above is the default setting. Use this IP address when connecting to a network consisting of other D-Link devices set to their default settings. If you have changed the IP address of the DWL-700AP to conform to a network other than one with D-Link devices, then input that IP address in the web browser, instead of the default IP address shown.)

- Type **admin** in the **User name** field

- Leave the **Password** blank

- Click **OK**

Using the Configuration Utility (continued)

After logging in, the screen below will appear. Click on the tabs in the screen to access different segments of the Configuration Utility. If you choose to use the web-based configuration menu, please configure the DWL-700AP from a computer with an ethernet connection to the DWL-700AP.

Home > Wizard
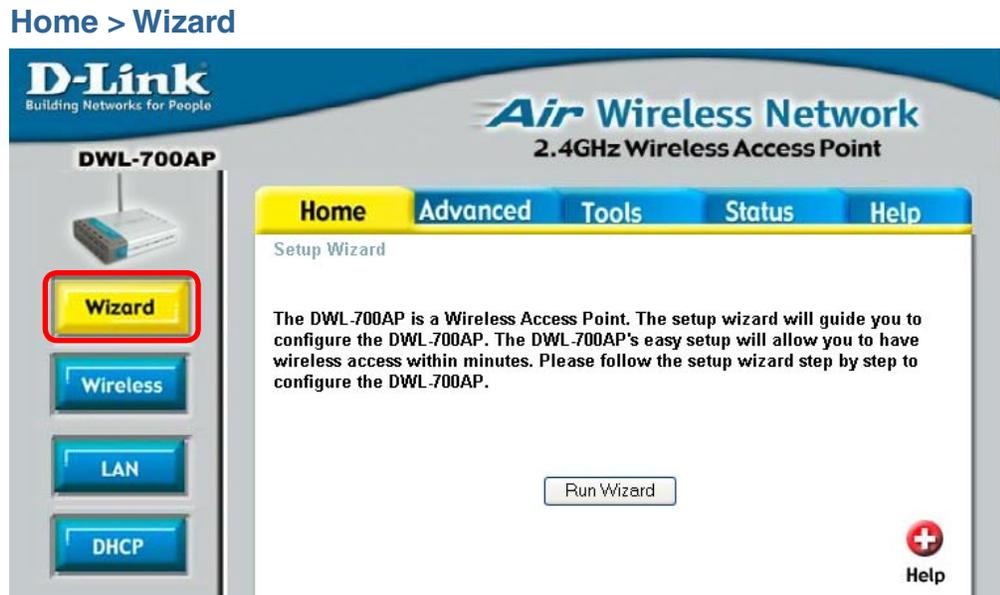
Clicking **Apply** will save changes made to the page.

Apply

Clicking **Cancel** will clear changes made to the page.

Cancel

Clicking **Help** will bring up helpful information regarding the page.

Help

Clicking **Restart** will restart the router..(Necessary for some changes.)

Restart

Using the Configuration Utility (continued)

Home > Wireless

AP Name: You may choose to rename your access point, especially if you have more than one access point on your network.

SSID: The SSID is a unique name that identifies a network. All devices on a network must share the same SSID name in order to communicate on the network. If you choose to change the SSID from the default setting, input your new SSID name in this field. The SSID can be up to 32 characters in length.

Channel: Channel **6** is the default channel. Input a new number if you want to change the default setting. All devices on the network must be set to the same channel to communicate on the network.

WEP Encryption: Select **Enable Encryption** to use **WEP** (**W**ired **E**quivalent **P**rivacy) on the network. All devices on the network, and the access point, must share the same WEP selection – either **Enable** or **Disable**, and they must share the same WEP key. The WEP key is generated from **ASCII** or **Hexadecimal** entries that are either 64-, 128-or 256- bit in length.

When enabling encryption, select the **Key Type** (ASCII or Hexadecimal) and then input the appropriate digits or letters. You can create up to 4 keys. Select the key you wish to use.

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

Using the Configuration Utility (continued)

Home > LAN

Dynamic IP Address: Select this option if you would like to have an IP address automatically assigned to the DWL-700AP by a DHCP server in your network.

DHCP stands for Dynamic Host Configuration Protocol. It is a protocol for assigning dynamic IP addresses "automatically." With a DHCP Server there is no need to manually assign an IP address.

Static IP Address: Select this option if you are manually assigning an IP address.

IP Address: 192.168.0.50 is the default IP address of the access point.

Subnet Mask: 255.255.255.0 is the default subnet mask. All devices on the network must have the same subnet mask to communicate on the network.

Gateway: Enter the IP address of the gateway in your network.

IP Address

If you need to assign static IP addresses to the devices in your network, please remember that the IP address for each computer or device must be in the same IP address range as all the devices in the network. Each device must also have the same subnet mask. For example: Assign the first computer an IP address of 192.168.0.2 and a subnet mask of 255.255.255.0, the second device an IP address of 192.168.0.3 and a subnet mask of 255.255.255.0, and so on. Devices that are assigned the same IP address may not be visible on the network.

Using the Configuration Utility (continued)

Home > DHCP

DHCP Server: Select **Enabled** or **Disabled**. Disabled is the default setting. If you want to use the access point as a DHCP server to automatically assign dynamic IP addresses on the network, you will select Enabled.

Starting IP Address: If you have enabled the DHCP server function, enter the starting point of the IP address range for your network.

Ending IP Address: Enter the ending IP address of your IP address range, if you have enabled the DHCP function of the access point.

Lease Time: Choose the length of time during which the DHCP function of the DWL-700AP automatically regenerates the IP addresses to the devices in your network.

DHCP Client Table: Lists the devices on your network that are receiving dynamic IP addresses from the access point.

Using the Configuration Utility (continued)

Advanced > Mode

Access Point: Select this option to use the DWL-700 AP as an access point in your network.

Wireless Client: Select this option to use the DWL-700AP as a wireless client in your network. A wireless client is a device that connects to the network through a router or an access point.

> **Remote AP MAC:** Input the MAC Address of the remote AP to which the DWL-700AP will connect when it is in wireless client mode.

> **Site Survey:** Click the **Site Survey** button to select a remote AP to which you wish to connect.

Repeater: Select this option to use the DWL-700AP to extend the reach of a remote AP by repeating the signal.

> **Remote AP MAC:** Input the MAC Address of the remote AP that will have its range extended by the DWL-700AP.

> **Site Survey:** Click the **Site Survey** button to select a remote AP that you wish to repeat.

Using the Configuration Utility (continued)

Advanced > Performance

The default Performance settings are shown here.

Beacon Interval: Beacons are packets sent by an access point to synchronize a wireless network. Specify a beacon interval value. Default (100) is recommended.

RTS Threshold: This value should remain at its default setting of 2,437. If you encounter inconsistent data flow, only minor modifications to the value range between 256 and 2,437 are recommended.

Fragmentation: This value should remain at its default setting of 2,347. If you experience a high packet error rate, you may slightly increase your fragmentation threshold within the value range of 256 to 2,346. Setting the fragmentation threshold too low may result in poor performance.

DTIM Interval (Beacon Rate): (Delivery Traffic Indication Message) Enter a value between 1 and 255 (default is 3) for the Delivery Traffic Indication Message. A DTIM is a countdown informing clients of the next window for listening to broadcast and multicast messages.

Basic Rates: Default is 2Mbps. We recommend that you keep the setting at default. If you lose connection at the TX rate, you will regain connection at the basic rate. A lower basic rate will make reconnection easier.

TX Rates: Select the transmission rate for the network. The default rate is 11Mbps.

Preamble: Long Preamble is the default setting. (High traffic networks should use the shorter preamble type.) The preamble defines the length of the CRC block (Cyclic Redundancy Check is a common technique for detecting data transmission errors) used in communication between the access point and the roaming wireless network adapters.

Authentication:
Open System - communicates the key across the network.
Shared Key - devices must have identical WEP settings to communicate.
Auto - automatically adjusts to the Authentication mode of the wireless client.

SSID Broadcast: (Service Set Identifier) Enable or Disable (default) the broadcast of the SSID name across the network. SSID is a name that identifies a wireless network. All devices on a network must use the same SSID to establish communication.
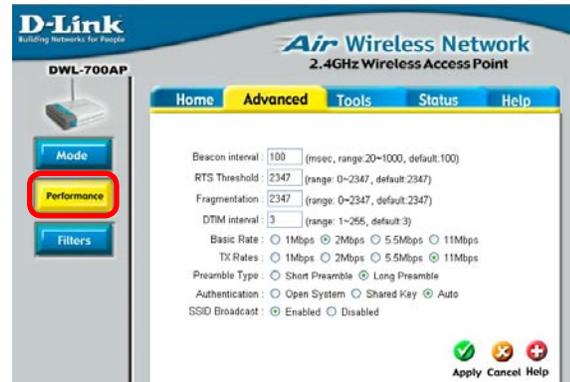
Using the Configuration Utility (continued)

Advanced > Filters

Use **MAC Filters** to allow or deny computers by their MAC Addresses from accessing the DWL-700AP. You can either manually add a MAC Address or select the MAC Address from the list of clients that are currently connected to the broadband router (**Connected PCs**). The default setting is **Disabled MAC Filters**.

MAC Filter List: This list will display the MAC Addresses that are in the selected filter.

Using the Configuration Utility (continued)

Tools > Admin

New Password: Enter the new password.

Confirm Password: Re-enter the password to confirm it.

Tools > System
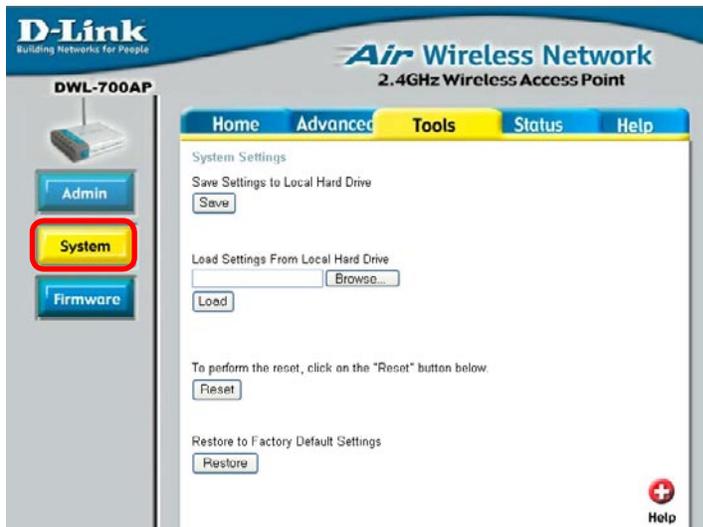
Restore: You may also restore the factory settings by clicking on **Restore**. Make sure to save the unit's settings before clicking on **Restore**.

Save Settings: The current system settings can be saved as a file onto the local hard drive.

Load Settings: The saved file or any other saved setting file can be loaded back on the access point. To reload a system settings file, click on **Browse** to browse the local hard drive and locate the system file to be used. Click **Load** when you have selected the file to be loaded back onto the access point.

Reset: To complete the reset, click **Reset**.

Using the Configuration Utility (continued)

Tools > Firmware
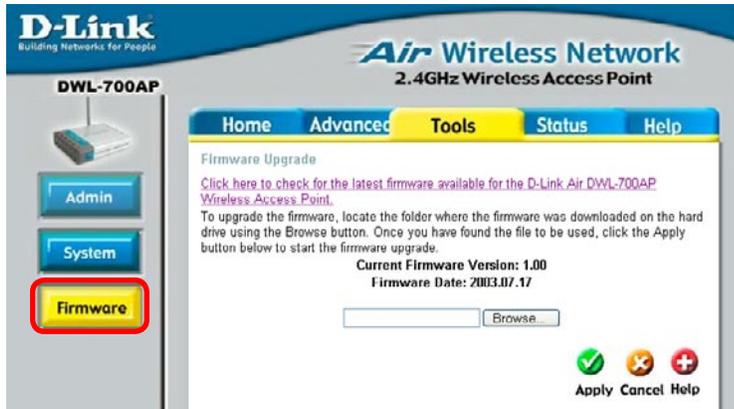
Click on **Click here to check for the latest firmware....** Download the latest firmware to your hard drive. Then click **Browse** on this page to find the firmware upgrade on your hard drive.

Click **Apply** to start the firmware upgrade.

Status > Device Info
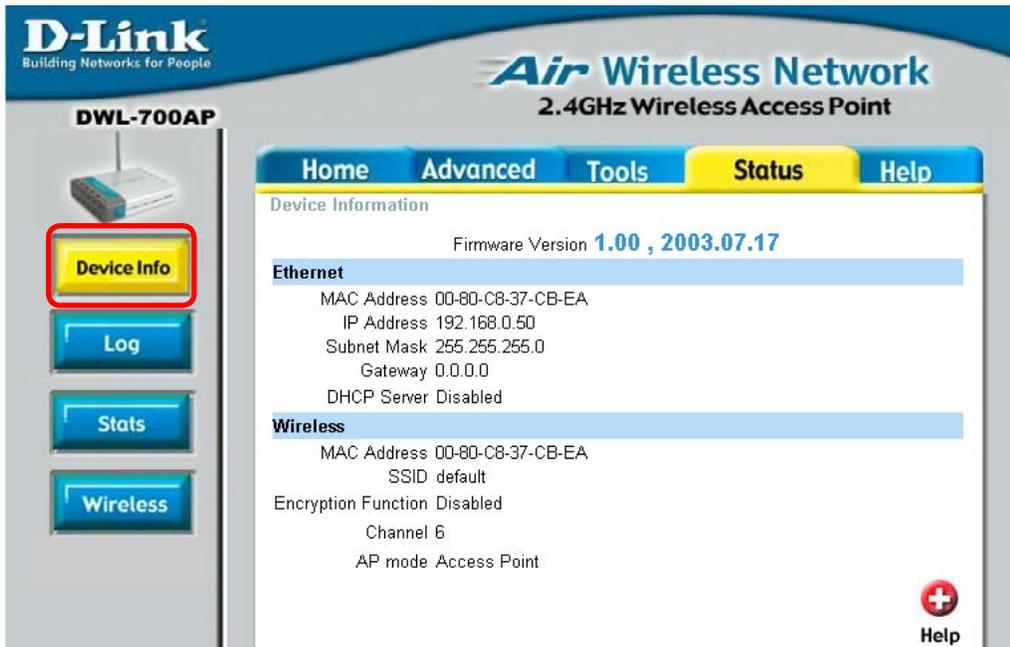
This screen displays the current wireless and Ethernet settings of the DWL-700AP.

Using the Configuration Utility (continued)

Status > Log

View Log
The access point keeps a running log of events and activities occurring on the AP. If the device is rebooted, the logs are automatically cleared.

First Page - The first page of the log.
Last Page - The last page of the log.
Previous - Moves back one log page.
Next - Moves forward one log page.
Clear - Clears the logs completely.

Using the Configuration Utility (continued)

Status> Stats

Traffic Statistics

The access point keeps traffic statistics. You are able to view the statistics of the router on both the Ethernet portion of the network and the wireless portion of the network. The traffic counter will reset if the device is rebooted.

Status > Wireless
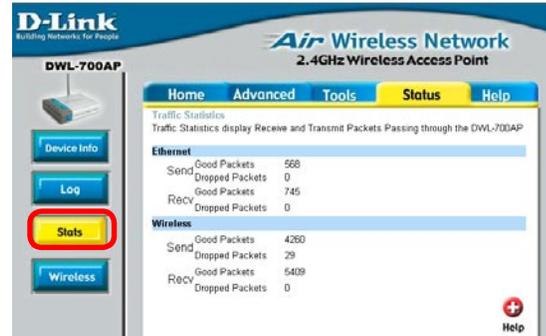
Connected
Wireless PCs LIst

This list displays the MAC Addresses of connected PC's and the length of time that they have been connected.

Help

Menu

Select from this menu for extra help.

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 networkingcomputers 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 (continued)

Please follow all the instructions in this window:
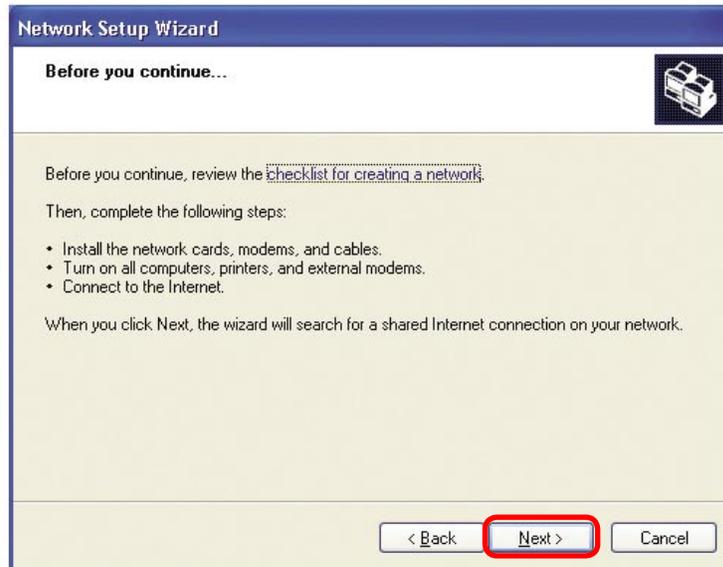
Click **Next**.

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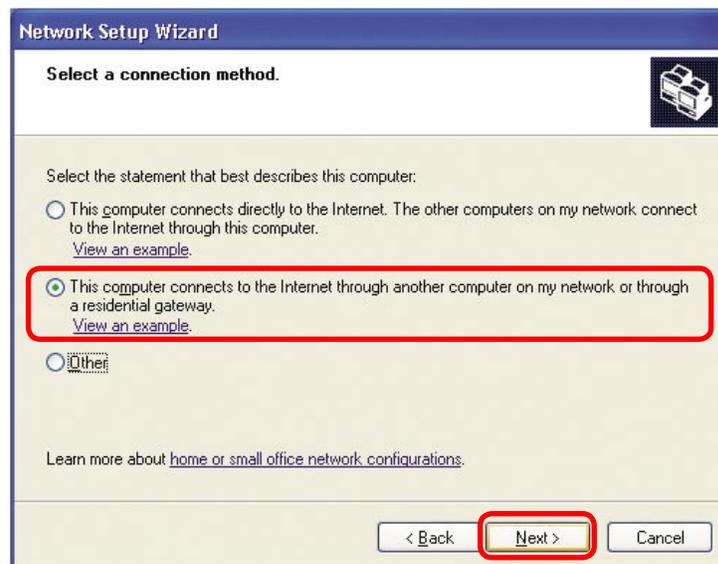
Click **Next**.

Networking Basics (continued)

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

Click **Next**.

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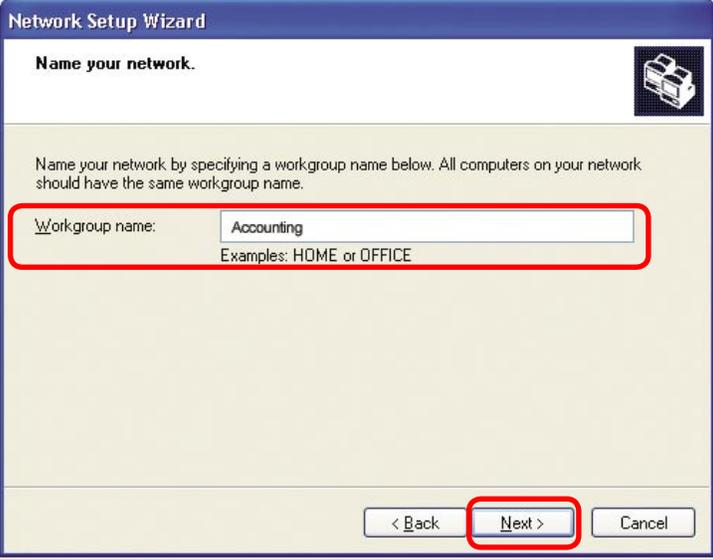
Click **Next**.

Networking Basics (continued)

Please wait while the **Network Setup Wizard** applies the changes.
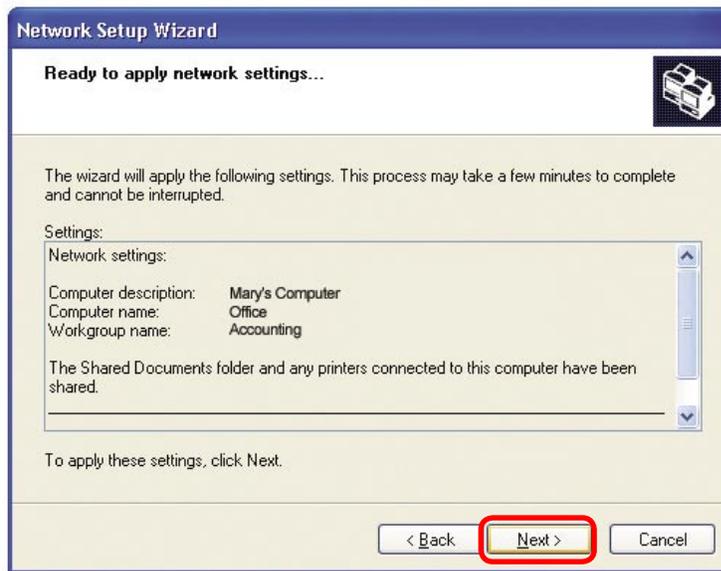
When the changes are complete, click **Next**.

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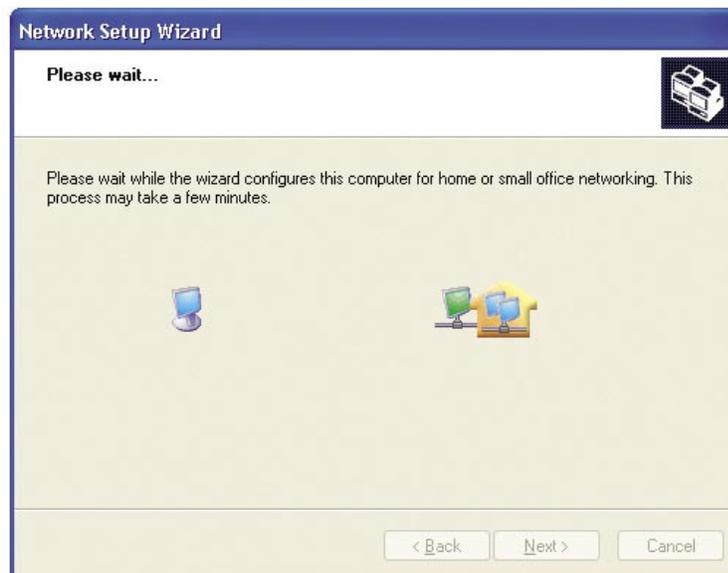
Networking Basics (continued)

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

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

Networking Basics (continued)

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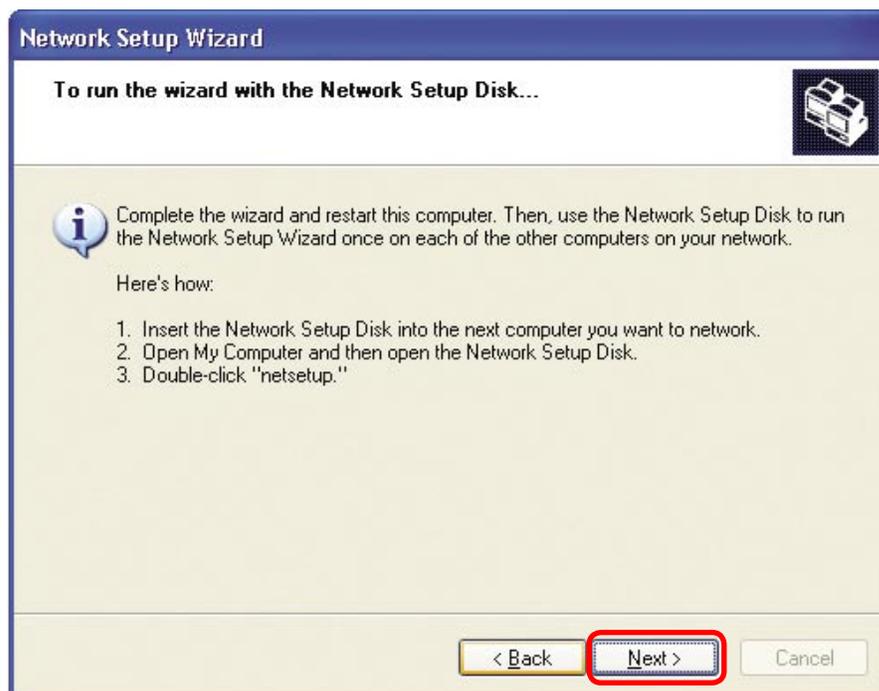
Networking Basics (continued)

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

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

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

Networking Basics (continued)

Naming your Computer

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

- ■ 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**.
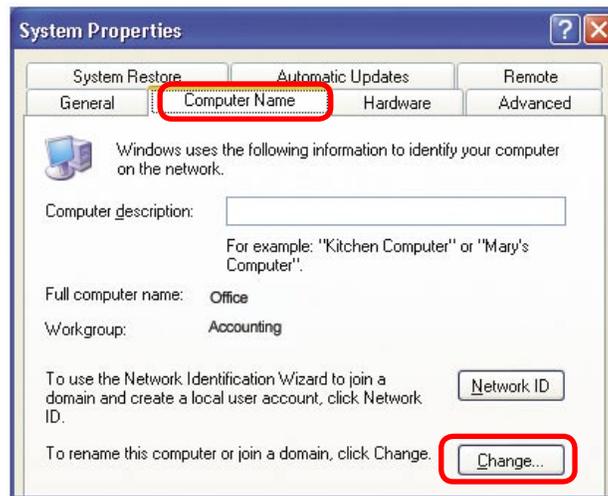
Networking Basics (continued)

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 (continued)

Checking the IP Address in Windows XP

This window will appear.

- Click the **Support tab**.

- Click **Close**.

Assigning a Static IP Address in Windows XP/2000

Note: Some 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**.
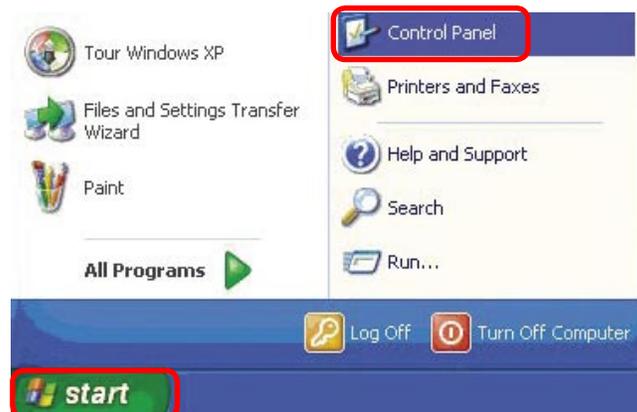
Networking Basics (continued)

Assigning a Static IP Address in Windows XP/2000

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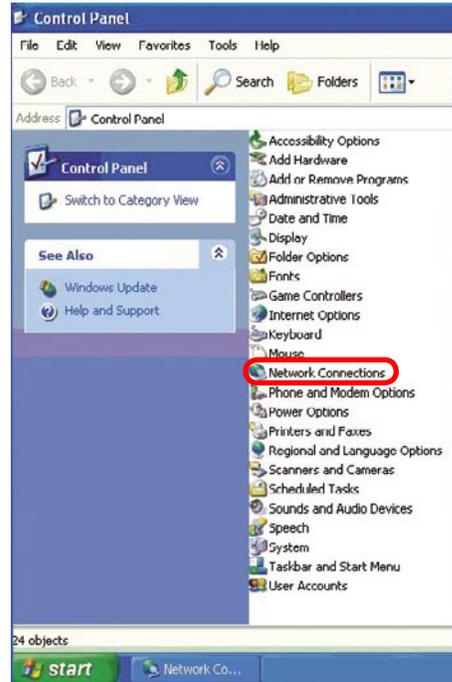
■ Right-click on **Local Area Connections**.

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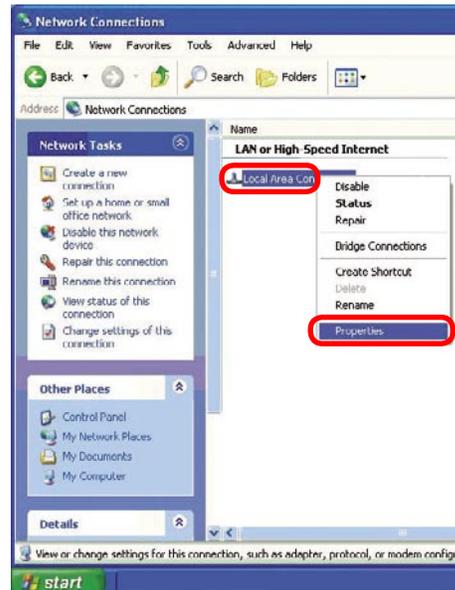
Networking Basics (continued)

Assigning a Static IP Address in <u>Windows XP/2000</u>

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

■ Click **Properties**.
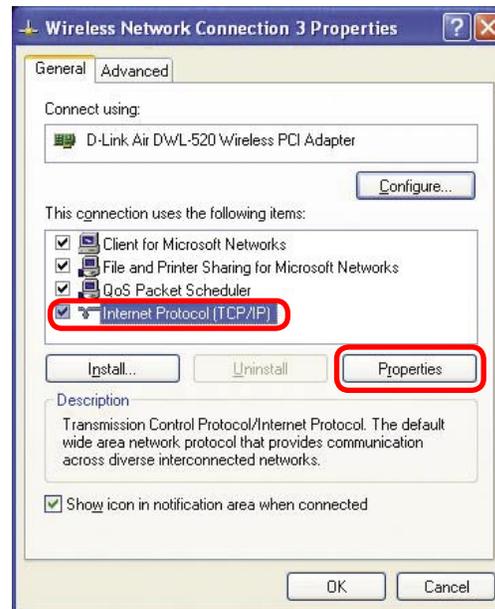
■ In the window below, select **Use the following IP address**. Input your **IP address and subnet mask.** (The IP addresses on your network must be within the same range. For example, if one computer has an IP address of 192.168.0.2, the other computers should have IP addresses that are sequential, like 192.168.0.3 and 192.168.0.4. The subnet mask must be the same for all the computers on the network.)

IP Address:
e.g., 192.168.0.2

Subnet Mask:
255.255.255.0

Default Gateway:
Enter the LAN IP address of the wireless router. (D-Link wireless routers have a LAN IP address of 192.168.0.1)

■ Select **Use the following DNS server address**. Enter the LAN IP address of the wireless router. (D-Link wireless routers have a LAN IP address of 192.168.0.1)

■ Click **OK**.
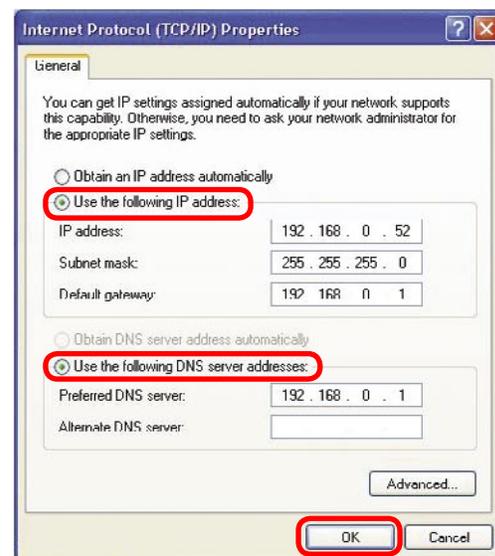
You have completed the assignment of a static IP address. (You do not need to assign a static IP address if you have a DHCP-capable gateway/router.)

Networking Basics (continued)

Checking the Wireless Connection by _Pinging in Windows XP/2000_

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

Checking the Wireless Connection by _Pinging in Windows Me/98_

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

Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the DWL-700AP. We cover various aspects of the network including network adapters. *(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.)*

Note: It is recommended that you use an Ethernet connection to configure the DWL-700AP Access Point.

1. **The computer used to configure the DWL-700AP cannot access the configuration menu.**

   ■ Check that the **Ethernet LED** on the DWL-700AP is **ON**. If the **LED** is not **ON**, check that the cable for the Ethernet connection is securely inserted.

   ■ Check that the Ethernet Adapter is working properly. Please see item 3 (**Check that the drivers for the network adapters are installed properly**) in this **Troubleshooting** section to check that the drivers are loaded properly.

   ■ Check that the **IP address** is in the same range and subnet as the DWL-700AP. Please see **Checking the IP Address in Windows XP** in the **Networking Basics** section of this manual.

Note: The IP address of the DWL-700AP is 192.168.0.50. All the computers on the network must have a unique IP address in the same range, e.g., 192.168.0.x. Any computers that have identical IP addresses will not be visible on the network. They must all have the same subnet mask, e.g., 255.255.255.0

   ■ Do a **Ping test** to make sure that the DWL-700AP is responding. Go to **Start**>**Run**>Type **Command**>Type **ping 192.168.0.50.** A successful ping will show four replies.
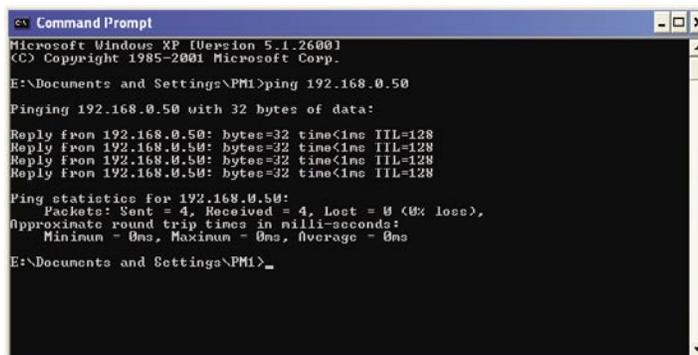
Troubleshooting (continued)

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

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

Note: Screen shots were taken using Windows XP. Your screens may look similar.

■ Check that the **IP address** assigned to the wireless adapter is within the same **IP address range** as the access point and gateway. *Since the DWL-700AP has an IP address of 192.168.0.50, wireless adapters must have an IP address in the same range, e.g., 192.168.0.x. Each device must have a unique IP address; no two devices may have the same IP address. The subnet mask must be the same for all the computers on the network.* To check the **IP address** assigned to the wireless adapter, **double-click** on the **Local Area Connection icon** in the taskbar > select the **Support tab** and the **IP address** will be displayed. (Please refer to **Checking the IP Address** in the **Networking Basics** section of this manual.)

■ If it is necessary to assign a **static IP address** to the wireless adapter, please refer to the appropriate section in **Networking Basics**. If you are entering a **DNS server address** you must also enter the **default gateway address.** *(Remember that if you have a DHCP-capable router, you will not need to assign a static IP address. See **Networking Basics: Assigning a Static IP Address.**)*

Troubleshooting (continued)

3. Check that the drivers for the network adapters are installed properly.

You may be using different network adapters than those illustrated here, but this procedure will remain the same, regardless of the type of network adapters you are using.

■ Go to **Start**.

■ Right-click on **My Computer**.

■ Click **Properties**.

■ Select the **Hardware Tab**.

■ Click **Device Manager**.
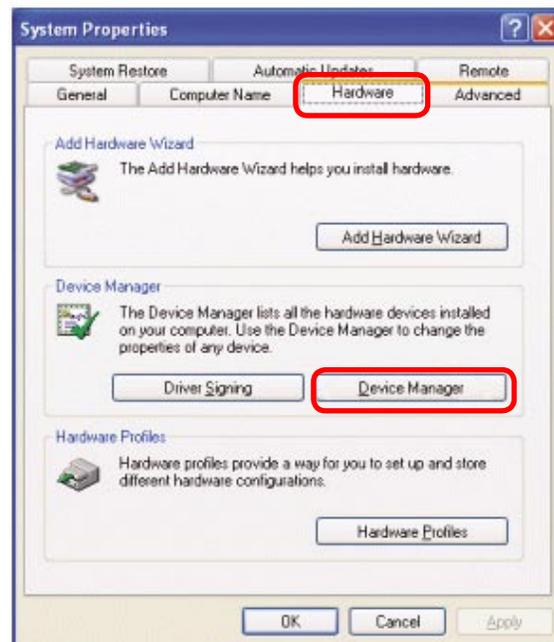
Troubleshooting (continued)

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

■ **Right-click** on **D-Link *Air* DWL-650 Wireless Cardbus Adapter** *(or whatever network adapter you are using).*

■ Select **Properties** to check that the drivers are installed properly.

■ Look under **Device Status** to check that the device is working properly.

■ Click **OK**.
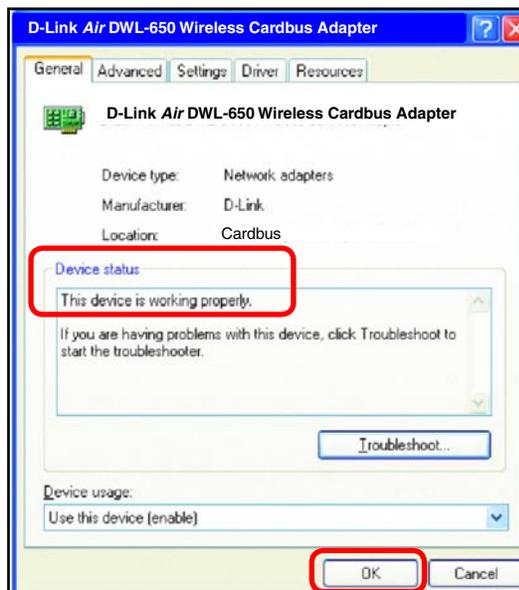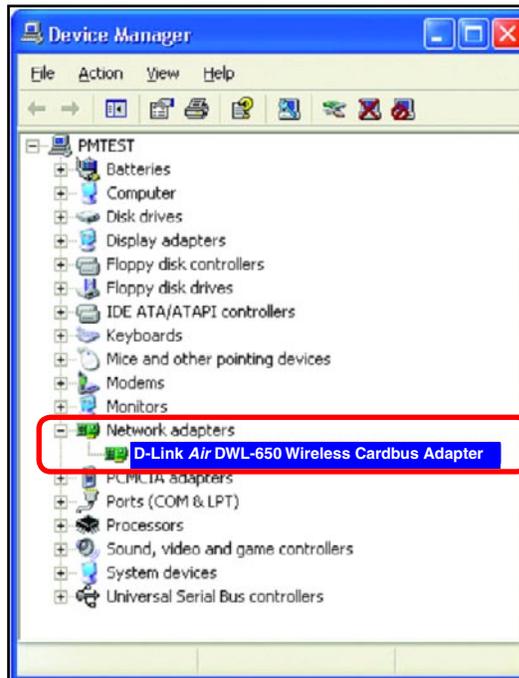
Troubleshooting (continued)

4. Resetting the DWL-700AP to Factory Default Settings

After you have tried other methods for troubleshooting your network, you may choose to reset the DWL-700AP to the factory default settings. Remember that D-Link *Air* products network together, out of the box, at the factory default settings.

To hard-reset the D-Link *Air* DWL-700AP to the factory default settings, please do the following:

- Locate the **reset** button on the back of the DWL-700AP

- Use a paper clip to press the **reset** button

- Hold for about 5 seconds and then release

- After the DWL-700AP reboots (this may take a few minutes) it will be reset to the factory default settings.

Technical Specifications

Standards

- IEEE 802.11
- IEEE 802.11b
- IEEE 802.3
- IEEE 802.3u

Port:

- 10/100 Mbps Fast Ethernet

Data Rates*:

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

Encryption:

- Supports 64 and 128-bit WEP

Media Access Controll:

- CSMA/CA with ACK

Frequency Range:

- 2.4 – 2.462GHz

Operating Range:

- Indoors - up to 328 feet (100 meters)

Modulation Technology:

- DSSS - Direct Sequence Spread Spectrum
- 11-chip Barker sequence

* Maximum wireless signal rate based on IEEE Standard 802.11b specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead lower actual data throughput rate.

Technical Specifications (continued)

Modulation Techniques

- Barker (1Mbps/0db)
- Barker (2Mbps/3db)
- CCK (5.5Mbps/5.5db)
- CCK (11Mbps/8.5db)

Transmitter Output Power:

- 15dBm +/- 2dB

External Antenna Type:

- 2.5dB gain with reverse SMA connector

Over-Driving Levels:

- Tolerates up to +17dBm at the Antenna

Device Management

- Web-Based - Internet Explorer v5 or later; Netscape Navigator v4 or later; or other Java-enabled browsers.

Operating Temperature:

- 32ºF to 131ºF (0ºC to 55ºC)

Humidity:

- 5% - 95%, non-condensing

Safety & Emissions

- FCC
- UL

Physical Dimensions:

- L = 5.5 inches (140mm)
- W = 4.5 inches (114mm)
- H = 1 inches (25.4mm)

LEDs:

- Power (Green)
- Link (Green)
- TX/RX (Green)

Power Input:

- External Power Supply: DC 5V, 2.4A

Weight:

- .44 lbs. (200g)

Warranty:

- 1 Year

Technical Support

Technical Support

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

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

U.S. and Canadian customers can contact D-Link technical support through our website, or by phone.

Tech Support for customers within the United States:

D-Link Technical Support over the Telephone:
(877) 453-5465
24 hours a day, seven days a week.

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

Tech Support for customers within Canada:

D-Link Technical Support over the Telephone:
(800) 361-5265
Monday to Friday 8:30am to 9:00pm EST

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

Warranty
(USA only)

Subject to the terms and conditions set forth herein, D-Link Systems, Inc. ("D-Link") provides this Limited warranty for its product only to the person or entity that originally purchased the product from:

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

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

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

- Hardware (excluding power supplies and fans) One (1) Year
- Power Supplies and Fans One (1) Year
- Spare parts and spare kits Ninety (90) days

D-Link's sole obligation shall be to repair or replace the defective Hardware during the Warranty Period at no charge to the original owner or to refund at D-Link's sole discretion. Such repair or replacement will be rendered by D-Link at an Authorized D-Link Service Office. The replacement Hardware need not be new or have an identical make, model or part. D-Link may in its sole discretion replace the defective Hardware (or any part thereof) with any reconditioned product that D-Link reasonably determines is substantially equivalent (or superior) in all material respects to the defective Hardware. Repaired or replacement Hardware will be warranted for the remainder of the original Warranty Period from the date of original retail purchase. If a material defect is incapable of correction, or if D-Link determines in its sole discretion that it is not practical to repair or replace the defective Hardware, the price paid by the original purchaser for the defective Hardware will be refunded by D-Link upon return to D-Link of the defective Hardware. All Hardware (or part thereof) that is replaced by D-Link, or for which the purchase price is refunded, shall become the property of D-Link upon replacement or refund.

Limited Software Warranty: D-Link warrants that the software portion of the product ("Software") will substantially conform to D-Link's then current functional specifications for the Software, as set forth in the applicable documentation, from the date of original retail purchase of the Software for a period of ninety (90) days ("Warranty Period"), provided that the Software is properly installed on approved hardware and operated as contemplated in its documentation. D-Link further warrants that, during the Warranty Period, the magnetic media on which D-Link delivers the Software will be free of physical defects. D-Link's sole obligation shall be to replace the non-conforming Software (or defective media) with software that substantially conforms to D-Link's functional specifications for the Software or to refund at D-Link's sole discretion. Except as otherwise agreed by D-Link in writing, the replacement Software is provided only to the original licensee, and is subject to the terms and conditions of the license granted by D-Link for the Software. Software will be warranted for the remainder of the original Warranty Period from the date or original retail purchase. If a material non-conformance is incapable of correction, or if D-Link determines in its sole discretion that it is not practical to replace the non-conforming Software, the price paid by the original licensee for the non-conforming Software will be refunded by D-Link; provided that the non-conforming Software (and all copies thereof) is first returned to D-Link. The license granted respecting any Software for which a refund is given automatically terminates.

Non-Applicability of Warranty: The Limited Warranty provided hereunder for hardware and software of D-Link's products will not be applied to and does not cover any refurbished product and any product purchased through the inventory clearance or liquidation sale or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product and in that case, the product is being sold "As-Is" without any warranty whatsoever including, without limitation, the Limited Warranty as described herein, notwithstanding anything stated herein to the contrary.

Warranty (Continued)

Submitting A Claim: The customer shall return the product to the original purchase point based on its return policy. In case the return policy period has expired and the product is within warranty, the customer shall submit a claim to D-Link as outlined below:

- The customer must submit with the product as part of the claim a written description of the Hardware defect or Software nonconformance in sufficient detail to allow D-Link to confirm the same.

- The original product owner must obtain a Return Material Authorization ("RMA") number from the Authorized D-Link Service Office and, if requested, provide written proof of purchase of the product (such as a copy of the dated purchase invoice for the product) before the warranty service is provided.

- After an RMA number is issued, the defective product must be packaged securely in the original or other suitable shipping package to ensure that it will not be damaged in transit, and the RMA number must be prominently marked on the outside of the package. Do not include any manuals or accessories in the shipping package. D-Link will only replace the defective portion of the Product and will not ship back any accessories.

- The customer is responsible for all in-bound shipping charges to D-Link. No Cash on Delivery ("COD") is allowed. Products sent COD will either be rejected by D-Link or become the property of D-Link. Products shall be fully insured by the customer. D-Link will not be held responsible for any packages that are lost in transit to D-Link. The repaired or replaced packages will be shipped to the customer via UPS Ground or any common carrier selected by D-Link, with shipping charges prepaid. Expedited shipping is available if shipping charges are prepaid by the customer and upon request.

- Return Merchandise Ship-To Address
  USA: 17595 Mt. Herrmann St. Fountain Valley, CA 92708

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.

Warranty (Continued)

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

Governing Law: This Limited Warranty shall be governed by the laws of the State of California. Some states do not allow exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the foregoing limitations and exclusions may not apply. This limited warranty provides specific legal rights and the product owner may also have other rights which vary from state to state.

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Copyright Statement: No part of this publication or documentation accompanying this Product 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. Contents are subject to change without prior notice. Copyright© 2002 by D-Link Corporation/D-Link Systems, Inc. All rights reserved.

CE Mark Warning: This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

FCC Statement: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.
• Increase the separation between the equipment and receiver.
• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
• Consult the dealer or an experienced radio/TV technician for help.

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

Warranty (Continued)

FCC Caution:
The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment; such modifications could void the user's authority to operate the equipment.

(1) The devices are restricted to indoor operations within the 5.15 to 5.25GHz range. (2) For this device to operate in the 5.15 to 5.25GHz range, the devices must use integral antennas.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE:
FCC Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. The antenna(s) used for this equipment must be installed to provide a separation distance of at least eight inches (20 cm) from all persons.

This equipment must not be operated in conjunction with any other antenna.

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

Product registration is entirely voluntary and failure to complete or return this form will not diminish your warranty rights.

Version 1.3
06/02/05