D-Link® *Air*Plus DWL-650+

2.4 GHz Wireless Cardbus Adapter

Manual

Rev. 062502

D-Link®
Building Networks for People

Contents

1. Package Contents 3
2. Introduction 4
3. Wireless Basics 6
4. Getting Started 9
5. Installing the DWL-650+ 12
6. Using the Configuration Utility 15
7. Troubleshooting 22
8. Networking Basics 26
9. Technical Specifications 58
10. Contacting Technical Support 60
11. Limited Warranty and Registration 61

1. Package Contents

Contents of Package:

- **D-Link *Air*Plus DWL-650+** 2.4GHz Wireless Cardbus Adapter
- Manual, QIG, and Drivers on CD
- Printed Quick Installation Guide

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

System Requirements:

- A laptop computer with an available 32-bit Cardbus PC Card slot
- Windows XP, Windows 2000, Windows Me, or Windows 98
- Cardbus Controller, properly installed and working
- At least 32 MB of memory and a 300 MHz processor
- An 802.11b Access Point (e.g., DWL-1000AP for **Infrastructure Mode**) or another 802.11b wireless adapter (e.g., DWL-520 for **Ad-Hoc mode**.)

2. Introduction

The D-Link *Air*Plus DWL-650+ Wireless Cardbus Adapter is an enhanced 802.11b high-performance, wireless adapter that supports high-speed wireless networking at home, at work or in public places.

Unlike most 802.11b network cards, the DWL-650+ provides speeds of up to 22 Mbps (compared to the standard 11 Mbps) when used with other D-Link *Air*Plus products such as the DWL-520+ Wireless PCI Adapter.

The DWL-650+ is also compatible with existing 802.11b devices such as the D-Link *Air* family of products including the DWL-520 Wireless PCI Adapter, the DI-714 Wireless Router/Access Point and the DWL-120 Wireless USB Adapter.

It is an ideal way to connect one laptop computer to a Wireless Local Area Network (WLAN.) After completing the steps outlined in the ***Quick Installation Guide*** (included in the 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!

The DWL-650+ includes software drivers for the most popular Microsoft Windows operating systems (Windows XP, Windows 2000, Windows Me, Windows 98) and can be integrated into a larger network, running, in either Ad Hoc mode (without an Access Point) or Infrastructure mode (with an Access Point.) *Please take a look at our* ***Getting Started*** *section in this manual to see examples of typical network setups using the DWL-650+ in both Infrastructure and Ad-Hoc modes.*

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 get acquainted with wireless technology.

Product Features

- Provides high-speed wireless connection up to 22Mbps
- Operates in the 2.4GHz frequency range
- Maximum reliability, throughput and connectivity with automatic data rate switching
- Supports Wired Equivalent Privacy (WEP) data encryption at 64/128/256-bit encryption
- Supports infrastructure networks via an Access Point and peer-to-peer communication in ad-hoc mode
- Built-in dual diversity antenna for reduced interference in a multi-path environment
- 32-bit Cardbus Performance
- User-friendly configuration and diagnostic utilities

LEDs

LED stands for **L**ight-**E**mitting **D**iode. The DWL-650+ has two LEDs:

1. **Power** - **Green** LED lights **on** steady to indicate a proper connection to a power source.
2. **Link** - **Green** LED flashes to indicate **activity** on the network and lights **on** steady to indicate that a **link** to the network is established.

3. Wireless Basics

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

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

People use wireless LAN technology for many different purposes.

Mobility - Productivity increases when people have access to data in any location within the operating range of the WLAN. 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 install cable through walls and ceilings.

Wireless Basics

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

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

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

*D-Link Air*Plus *Wireless Family of LAN products include:*

- 2.4GHz Wireless Cardbus Adapters used with laptop computers (DWL-650+)
- 2.4GHz Wireless PCI cards used with desktop computers (DWL-520+)

The DWL-650+ is also 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 Router/Access Point/Print Servers (DI-713P)
- Wireless Access Points (DWL-1000AP, DWL-900AP)

Standards - Based Technology

The IEEE standard-based technology assures that the D-Link *Air*Plus Products are interoperable with existing compatible 2.4GHz wireless technology. This means you will be able to transfer large files quickly or even watch a movie in MPEG format over your network without noticeable delays. The technology works by using multiple frequencies in the 2.4GHz range at speeds up to 22Mbps. D-Link *Air*Plus products will automatically sense the best possible connection speed to ensure the greatest speed and range possible with the technology.

Wireless Basics

Installation Considerations

Designed to go up to 1,312 feet (400 meters) outdoors and up to 328 feet (100 meters) indoors, the D-Link *Air*Plus DWL-650+ lets you access your network with your laptop computer from virtually anywhere. Keep in mind, however, that the number, thickness and location of walls, ceilings or other objects that the wireless signal must pass thru may limit range. Typical ranges vary depending on the types of materials and any background RF (radio frequency) noise in your home or business. The key to maximizing range is to follow these basic guidelines:

1. Keep the number of walls and ceilings between the wireless Access Point and your receiving device (i.e., the DWL-650+) to a minimum - Each wall or ceiling can reduce your D-Link *Air*Plus Wireless product's range from 3-90 feet (1-30 meters.) Position your Access Points, Residential Gateways, and computers so that the number of walls or ceilings is minimized.

2. Be aware of the direct line between Access Points, Residential Gateways (routers), and computers. A wall that is 1.5 feet thick (.5 meters), at a 45-degree angle appears to be almost 3 feet (1 meter) thick. At a 2-degree angle it looks over 42 feet (14 meters) thick! Try to make sure that the Access Points and Adapters are positioned so that the signal will travel straight through a wall or ceiling for better reception.

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

4. Make sure that the device's antenna is positioned for best reception by using the software signal strength tools included with your product.

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

Wireless Basics

For the average home, signal range should not be an issue. If you experience low or no signal strength in areas of your home that you wish to access, consider positioning the Access Point in a location directly between the computers with wireless adapters. Additional Access Points can be connected to provide better coverage in rooms where the signal does not appear as strong as desired.

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

4. Getting Started

Right out of the box, with its default settings, the DWL-650+ will automatically connect with other D-Link *Air* or *Air*Plus products.

For the price of a single IP Address from your Broadband Internet Service provider you can share the Internet with all the computers on your local network, without sacrificing speed or security, using D-Link *Air*Plus networking products.

There are basically two modes of networking:

Infrastructure – using an Access Point, such as the DWL-1000AP
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-650+ cardbus 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. The **Infrastructure Network** example shown on the following page contains the following D-Link network devices:

A wireless DHCP Router/Access Point/Print Server -	**D-Link *Air* DI-713P**
A laptop computer with a wireless network adapter -	**D-Link *Air*Plus DWL-650+**
A desktop computer with an Ethernet adapter -	**D-Link DFE-530TX+**
A Cable modem -	**D-Link DCM-200**

DHCP *stands for Dynamic Host Configuration Protocol. It is a protocol for assigning IP addresses "automatically." With a DHCP-capable gateway/router, there is no need to manually assign an IP address.*

Getting Started

Setting Up an Infrastructure Network

Fig. 4.1

*Please remember that **D-Link AirPlus** wireless devices are pre-configured to connect together, right out of the box, with the default settings.*

1. You will need a broadband Internet access (Cable/DSL) subscription.

2. Consult with your Cable/DSL provider for proper installation of the modem.

3. Connect the modem to a wireless Broadband router (such as the **D-Link DI-713P**.) *See the **Quick Installation Guide** included with the router.*

4. If an Ethernet port is available on the router, connect a computer that is equipped with an Ethernet Network adapter (such as the **DFE-530TX+**) to the router.

5. Install the drivers for the wireless network adapter (such as the **D-Link *Air*Plus DWL-650+**) into the laptop computer. *See the **Quick Installation Guide** included with the DWL-650+.*

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

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

***Using the Configuration Utility-** learn the settings you must use on each computer in your network for successful communication.*

***Troubleshooting –** learn how to check for the proper installation of the network adapters' drivers and other tips for troubleshooting the network.*

Getting Started

Setting up a Wireless Ad Hoc Network

Fig. 4.2

1. Install a network adapter into one computer. In the example above, the **D-Link *Air*Plus DWL-120** USB Wireless Network adapter is installed. You can also install the **DWL-520** Wireless PCI Adapter in the desktop computer. *See the **Quick Installation Guide** included with the product for installation instructions*.

2. Install the **DWL-650+** 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.

5. Installing the DWL-650+

1 Installing the DWL-650+ Drivers & Utility

NOTE: Do not insert the DWL-650+ Cardbus into the Cardbus slot at this point. You will be instructed in Section 2 to install the DWL-650+ Cardbus adapter later in this Quick Installation Guide.

Windows XP, 2000, Me, or 98 Installation:

The following screen shots are taken from Windows XP. Windows 2000, Me, and 98 will have a similar screenshots for installing the drivers.

- Turn on the laptop computer.
- Insert the D-Link *Air*Plus DWL-650+ Driver CD into the CD-ROM Drive.
- Click on the **Install Driver/PC Utility** bullet point on the installation screen.

Installing the DWL-650+
Drivers and Utility

If the AutoRun function on your laptop computer does not automatically start, proceed to the steps below. If it does, proceed to Section 2.

- Go to **Start** > **Run** > type **D:\Setup.exe**
- Click **OK**

NOTE: The letter "D" represents the letter of the CD-ROM drive. Your CD-ROM drive may be a different drive letter.

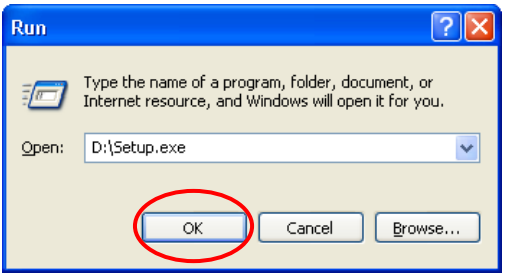

Fig. 5.1.2 Windows XP setup screen. The Windows 2000, Me, and 98 screen will look similar to Fig 5.1.2.

2 Installing the Drivers and Utility *(continued…)*

- Click **Next**

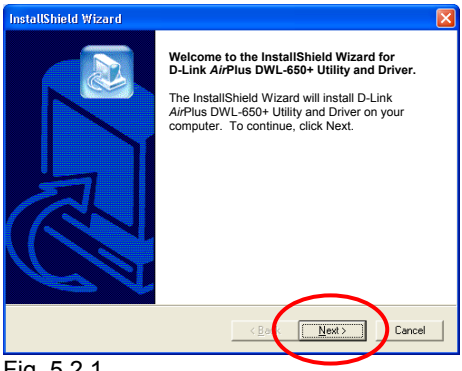

Fig. 5.2.1

- Click **Next** to install the Utility program in the default folder.

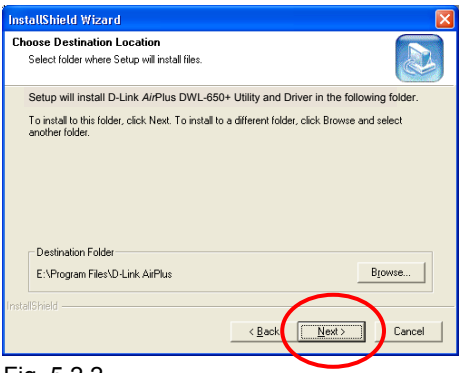

Fig. 5.2.2

Installing the DWL-650+
Drivers and Utility

- Select **No, I will restart my computer later.**

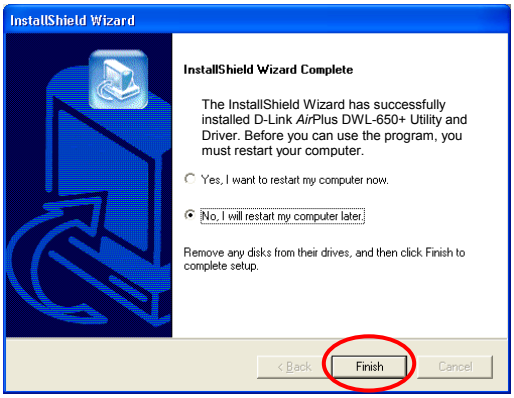

Fig. 5.2.3

- Click **Finish**
- Shut down your laptop computer.
- Insert the DWL-650+ into the Cardbus slot.
- Restart your laptop computer
- Click **Next** at the **Welcome** screen *(Fig. 5.2.4)*

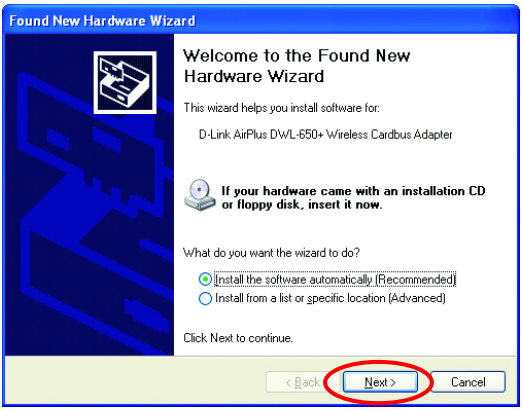

Fig. 5.2.4

For Windows XP, Fig. 5.2.5 may appear after the laptop computer restarts. Click **Continue Anyway** to finalize the installation. (This device has been successfully tested to work on Windows XP, as well as Windows 2000, Windows Me and Windows 98. Microsoft certification is pending.)

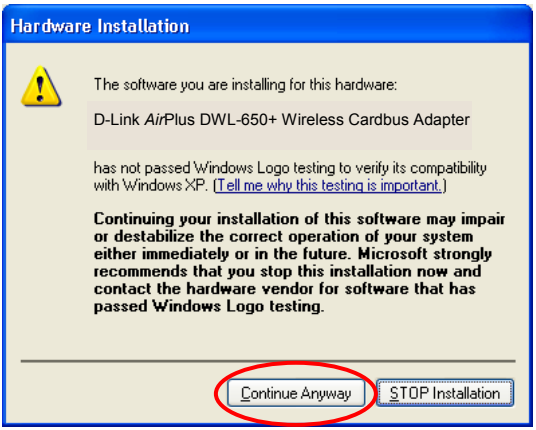

Fig. 5.2.5

Installing the DWL-650+

For Windows 2000, Fig. 5.2.6 may appear after the laptop computer restarts. Select **Yes** to finalize the installation.

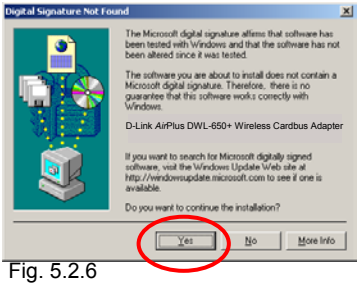

Fig. 5.2.6

Click **Finish** to complete the installation.

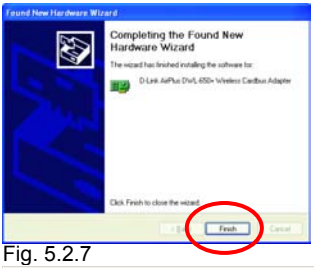

Fig. 5.2.7

For Windows Me and 98, after the laptop computer restarts, it will ask you to reboot the computer once more to finalize the driver installation. Select **Yes** to finalize the installation.

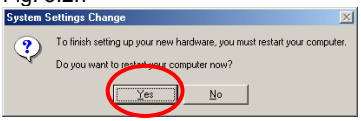

Fig. 5.2.8

YOU HAVE COMPLETED THE INSTALLATION OF THE DRIVERS. SEE *NETWORKING BASICS* IN THIS MANUAL FOR INFORMATION ON SETTING UP YOUR NETWORK.

6. Using the Configuration Utility

If you want to alter the default settings or optimize the performance of the DWL-650, D-Link has included a configuration utility to do so.

> *Note: Out of the box, with its default settings, the DWL-650+ will associate with D-Link Air / Air*Plus *wireless routers and access points. (e.g. DI-713P. DI-714. DWL-900AP. DWL-1000AP.)*

After the computer restarts, the configuration utility will automatically start and the utility icon will appear in the bottom right hand corner of the screen (systray).

Fig. 6.1

- Double-click on the **Configuration Utility icon** (Fig. 6.1) shown on the right.

Note: *If the utility icon does not appear, double-click on the* ***shortcut icon*** *(Fig. 6.2) that has been created on your desktop workspace.*

After double-clicking on the icon (Fig. 6.1), the D-Link Air*Plus DWL-650+ Utility window will appear.*

Fig. 6.2

Configuration Utility
Link Info

After clicking on the Configuration Utility icon, the **Link Info** screen will display the following:

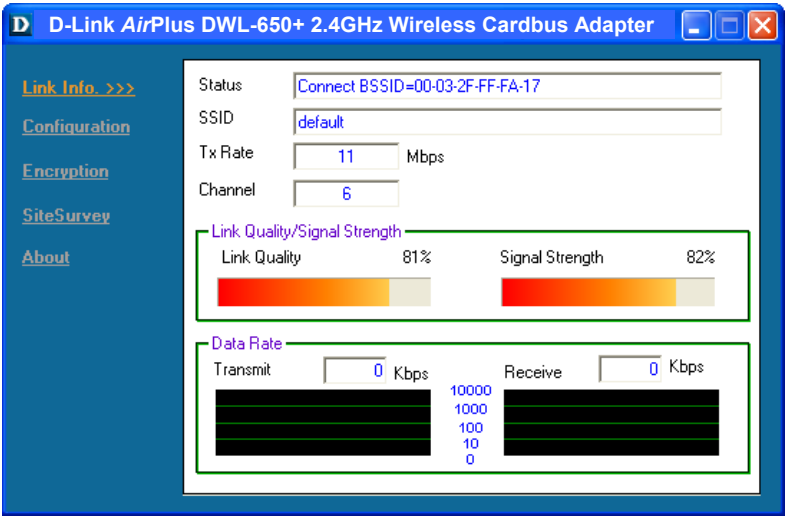

Fig. 6.3 This screen shot will be the same for all Windows operating systems

Status: Displays the MAC Address of the Access Point that is associated with the DWL-650+.

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

TxRate: The factory setting is set to 11 Mbps; however, TxRate settings are automatically determined by the DWL-650+ depending on the distance from the access point.

Channel: Displays the channel information. By default, the channel is set to 6 and selection is automatically determined by the DWL-650+.

Link Quality / Signal Strength: Displays the Link Quality for the DWL-650+ wireless connection to the access point. The Signal Strength represents the wireless signal between the access point and the DWL-650+. The percentage coincides with the graphical bar.

Data Rate: Displays the statistics of data transmitted and received.

Configuration Utility

Configuration

This Configuration screen displays the default settings for the DWL-650+.

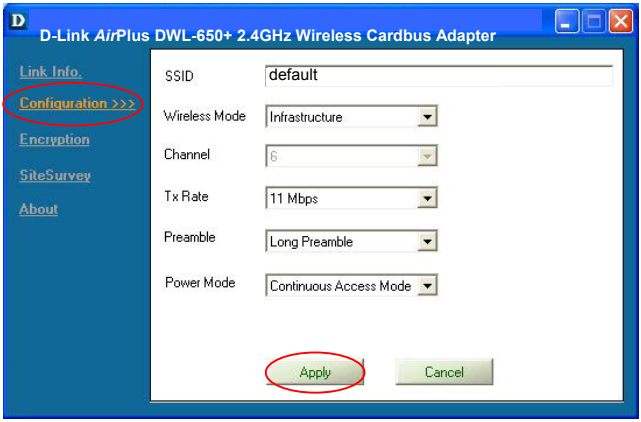

Fig. 6.4

To communicate on the network all devices must have the same settings for the following properties:

SSID - (Service Set Identifier) is a name that identifies a wireless network. Access Points and wireless clients attempting to connect to a specific WLAN (Wireless Local Area Network) must use the same SSID. The default setting is **default**.

Wireless Mode - Click on the pull-down menu; select from the following options:

Infrastructure - connecting the WLAN using an Access Point such as the DWL-1000AP. (The **default** setting.)

Ad-Hoc – wireless mode used when connecting directly to a computer equipped with a wireless adapter such as the D-Link *Air*Plus DWL-520 Wireless PCI adapter in a peer-to-peer environment.

Channel – The **default** channel setting is channel 6. However, the DWL-650+ will automatically select the channel to match the channel setting for the selected Access Point. In Ad Hoc mode, the channel must be manually set to the same channel for each wireless adapter.

TX Rate - Select the transmission rate on the network. 11Mbps is the **default** setting.

Preamble - Select **Long** or **Short Preamble.** The Preamble defines the length of the CRC block (Cyclic Redundancy Check is a common technique for detecting data transmission errors) for communication between the Access Point and the roaming wireless Network adapters. **Long Preamble** is the **default** setting. *Note: High network traffic areas should use the shorter preamble type.*

Power Mode – Select from three modes:

Continuous Access Mode-this **default** setting consumes the most power
Maximum Power Save-this setting consumes the least power
Power Save- this setting consumes a moderate amount of power

*If any changes are made to the configuration of the wireless adapter, click **Apply** to save the changes.*

Configuration Utility
Encryption

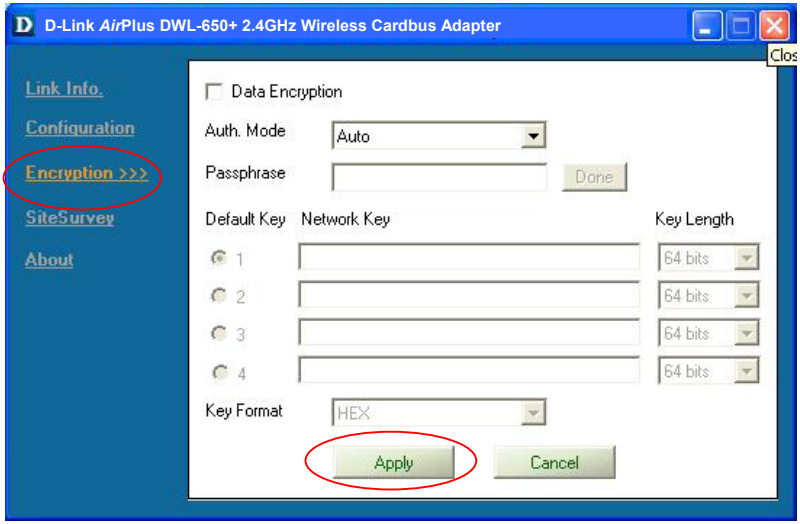

Fig. 6.5

Please note that all devices must share the same Encryption settings to communicate on the network.

Data Encryption – enable Encryption by clicking on the box. The DWL-650+ has Encryption disabled as the default setting.

Authorization mode – choose one of the following modes:

Open Authentication – communicates the key across the network

Shared Authentication – allows communication only with other devices with identical WEP settings

Auto – will automatically adjust to the Authentication mode of the wireless client

Network Key – enter a key in either ASCII (e.g., a word) or hexadecimal format

Key Format - ASCII or Hexadecimal

> ***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*

Key type - select the key length, either 64, 128 or 256 bits

Key Index – You can create up to 4 different security keys

Click **Apply** to save the changes.

Configuration Utility
Site Survey

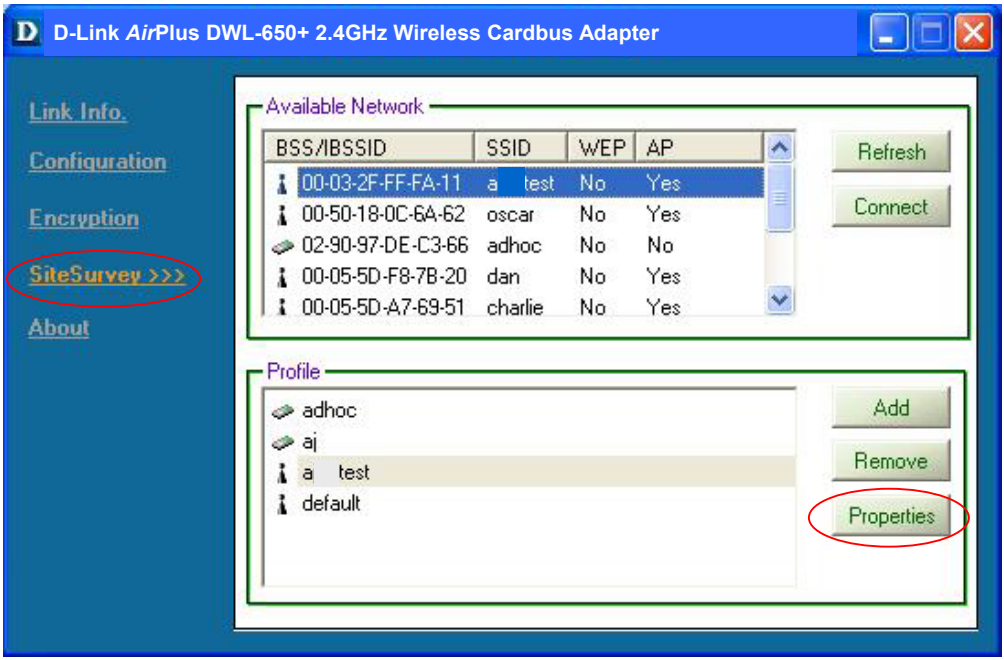

Fig. 6.6

Available Networks

The top section of the window displays the **Available Networks.** Scroll up and down the list and highlight the network to which you wish to connect. Click on the **Connect** button.

Profiles

In the lower half of the screen, you can manage the profiles that you have created for the wireless network at home, at the office and in public places. Scroll up and down and highlight the profile that you wish to configure. You can **ADD** or **REMOVE** a profile, or configure the **Properties** of the profile in order to connect with an available network.

Properties

Click on **Properties** and the screen on the next page will appear.

Configuration Utility

Properties

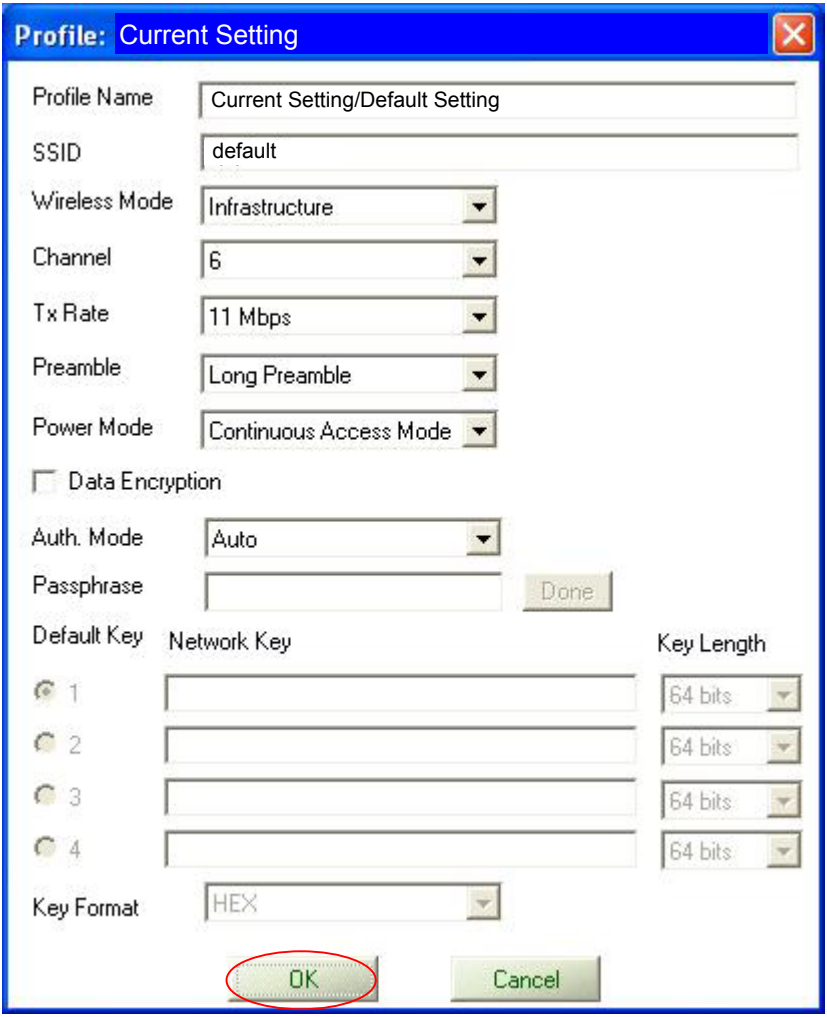

Fig. 6.7

In this window you can configure all the properties of a profile in order to connect with a network of your choice.

After you have entered your changes in this window, click **OK** to save the changes.

Configuration Utility
About

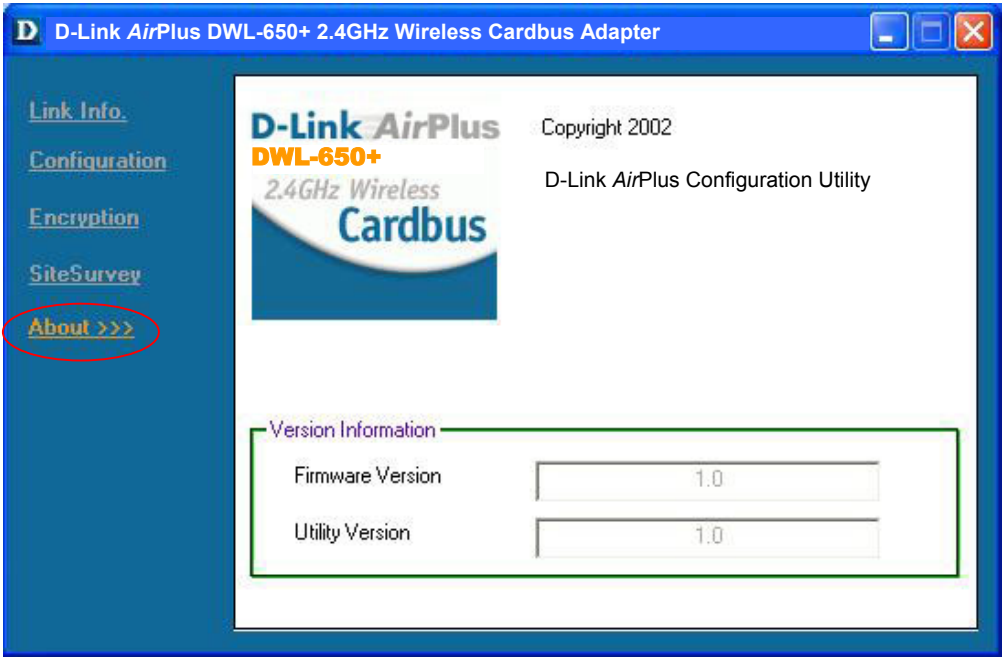

Fig. 6.8

The **ABOUT** screen gives you information about the F**irmware** and **Utility Versions** of the DWL-650+.

7. Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the DWL-650+ Wireless Adapter. 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. Checking the Installation of the Drivers for the Wireless Adapter

- Go to **Start**
- Right-click on **My Computer**
- Click **Properties**

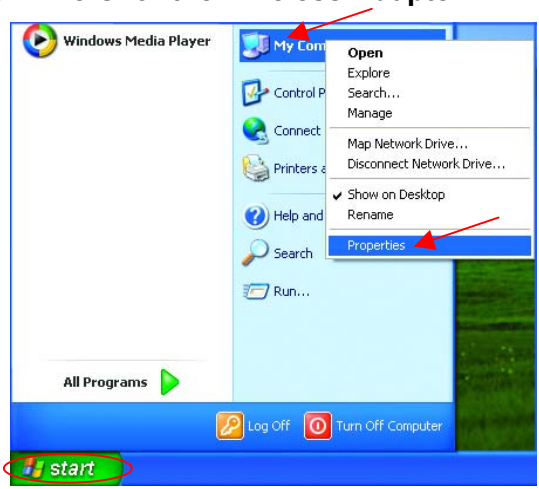

Fig. 7.1

- Select the **Hardware Tab**
- Click **Device Manager**

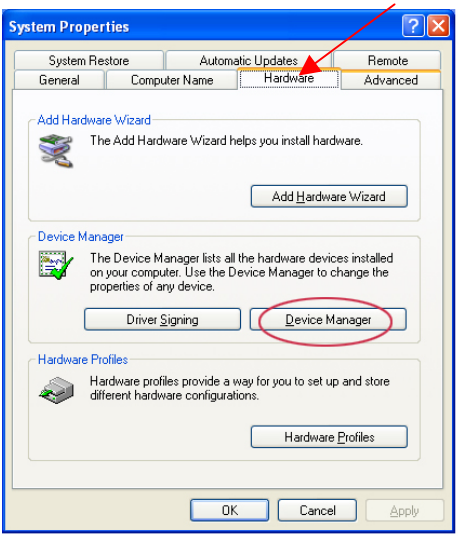

Fig. 7.2

Troubleshooting

- Double-click on **Network Adapters**
- Right-click on **D-Link *Air*Plus DWL-650+ Wireless Adapter**
- Select **Properties** to check that the drivers are installed properly.

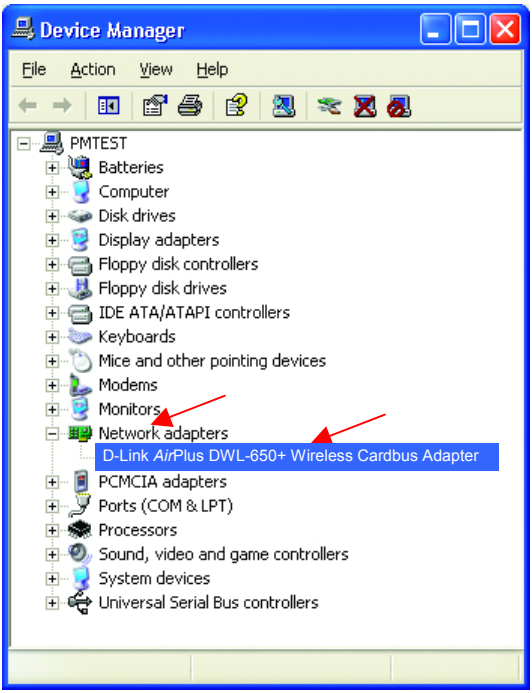

Fig. 7.3

- Look under **Device Status** to check that the device is working properly.
- Click **OK**

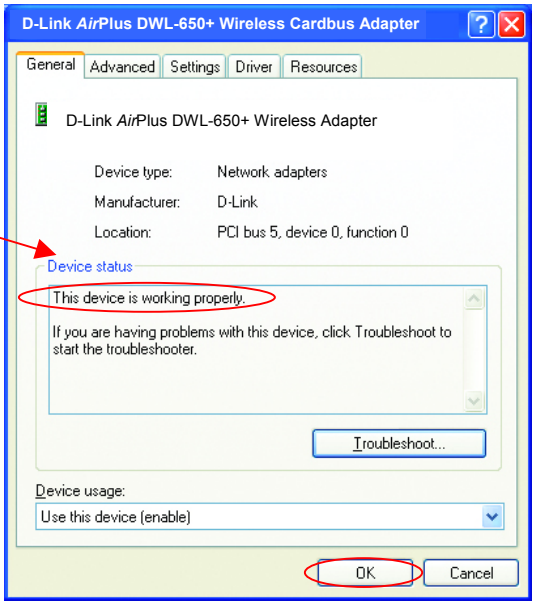

Fig. 7.4

Troubleshooting

2. I cannot connect to the access point or the wireless router.

- Make sure that the SSID on the DWL-650+ Cardbus adapter is exactly the same as the SSID on the Access Point or wireless router.

3. The DWL-650+ Power and Link lights are not on.

- Check to see if the DWL-650+ Cardbus adapter is firmly inserted into a PC Cardbus slot.

4. I forgot my Encryption key.

- Reset the Access Point to its factory default settings and restore the DWL-650+ Wireless Cardbus Adapter to the factory default settings. (The default settings are listed in Ch.6: **Using the Configuration Utility** in this manual.)

5. The computer does not recognize the DWL-650+ Wireless Adapter.

- Make sure that the DWL-650+ Wireless Adapter is properly seated in the computer's Cardbus slot.
- If Windows does not detect the hardware upon insertion of the adapter, make sure to completely remove drivers that were previously loaded. To remove the drivers, do the following:

  A. Under **Tools**> select **Folder Options**…> select **View** > under **Hidden files and folders** > select **Show hidden files and folders**

  B. Uncheck **Hide extension for known file types** > click on **Apply**

  C. Search for the files **TIACXLN.INF** and **TIACXLN.SYS**. Remove these files from the **INF** and **SYSTEM32** (DRIVERS) folders in the Windows directory. Note: Windows XP and Windows 2000 will rename **.inf** files that have not received WHQL certification into **oem.inf** files (e.g., **oem1.inf.)**

6. The computer with the DWL-650+ installed is unable to connect to the wireless network.

- Check that the LED indicators for the broadband modem are indicating normal activity. If not, there may be a problem with the broadband connection.

Troubleshooting

- Check that the LED indicators on the wireless router are functioning properly. If not, check that the AC power and Ethernet cables are firmly connected.
- Check that the IP Address, subnet mask, gateway, and DNS settings are correctly entered for the network
- In **Infrastructure** mode, make sure the same **Service Set Identifier (SSID)** is specified on the settings for the wireless clients and access points. The **SSID** factory default setting for the D-Link *AirPlus* products is **default.** (Double-click on the WLAN icon in the taskbar. The **Link Info** screen will display the SSID setting.)
- In **Ad-Hoc** mode, both wireless clients will need to have the same **SSID**. Please note that it might be necessary to set up one client to establish a **BSS (Basic Service Set)** and wait briefly before setting up other clients. This prevents several clients from trying to establish a **BSS** at the same time, which can result in multiple singular **BSSs** being established, rather than a single **BSS** with multiple clients associated to it.
- Check that the **Network Connection** for the wireless client is configured properly. Select **AP (Infrastructure)** when connecting to an access point and select **Ad-Hoc mode** when connecting without an access point. Double-click on the **WLAN icon** in the taskbar > click on **Configuration** to change the settings for the wireless adapter.
- If **Security** is enabled, make sure that the correct encryption keys are entered on both the DWL-650+ and the access point. Double-click on the **WLAN** icon in the taskbar > click **Encryption**. Check to see that the key selected is set to the same key as other devices on the network.

8. 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 98.

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

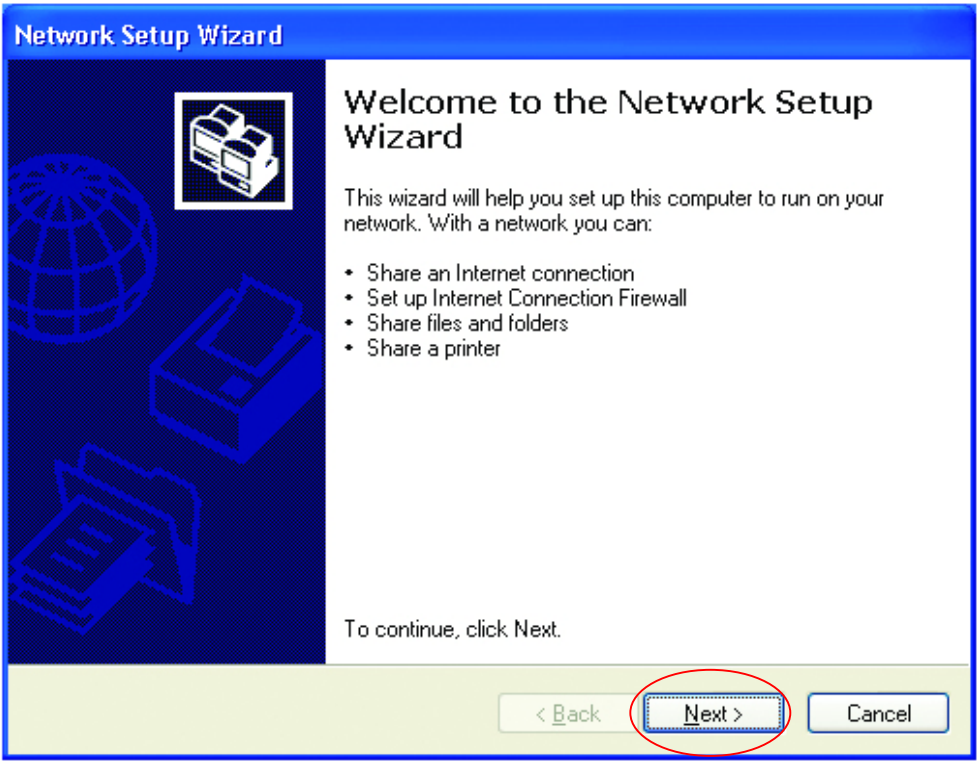

Fig. 8.1

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

Networking Basics

Using the Network Setup Wizard in Windows XP

Please follow all the instructions in this window:

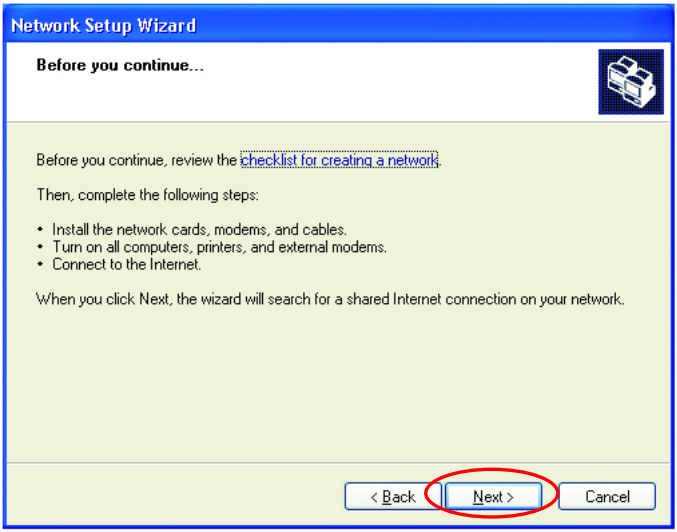

Fig. 8.2

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.

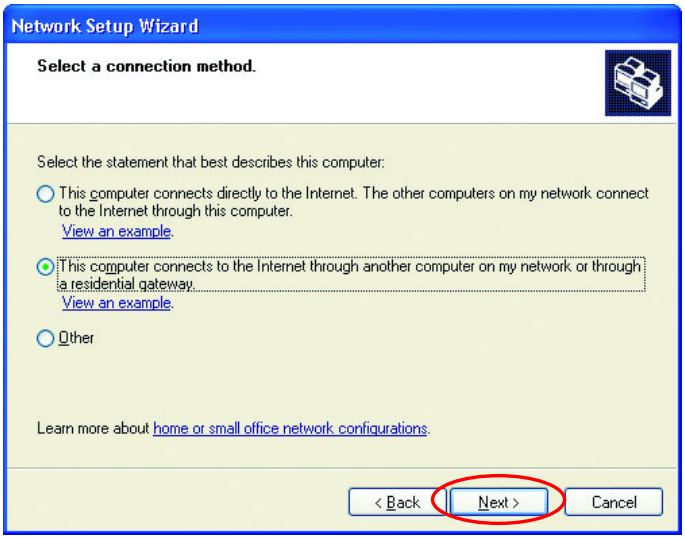

Fig. 8.3

Click **Next**

Enter a **Computer description** and a **Computer name.**

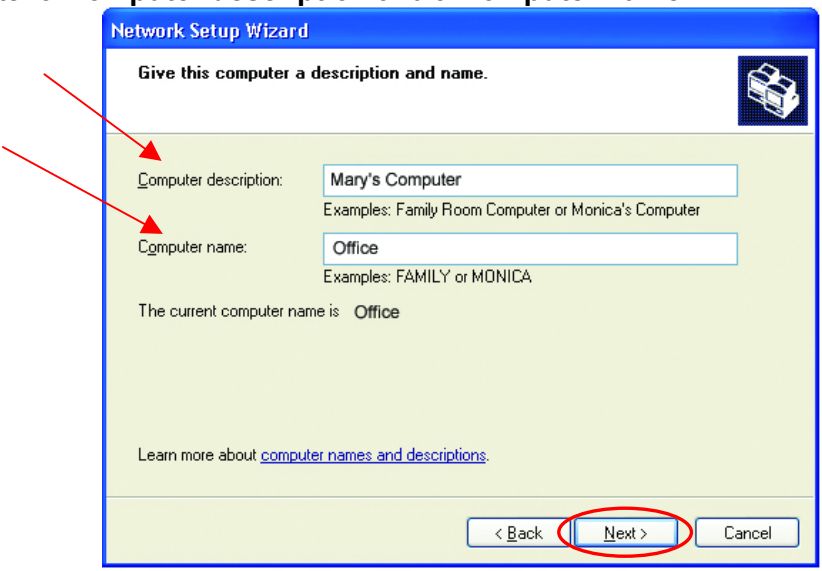

Fig. 8.4

Click **Next**

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

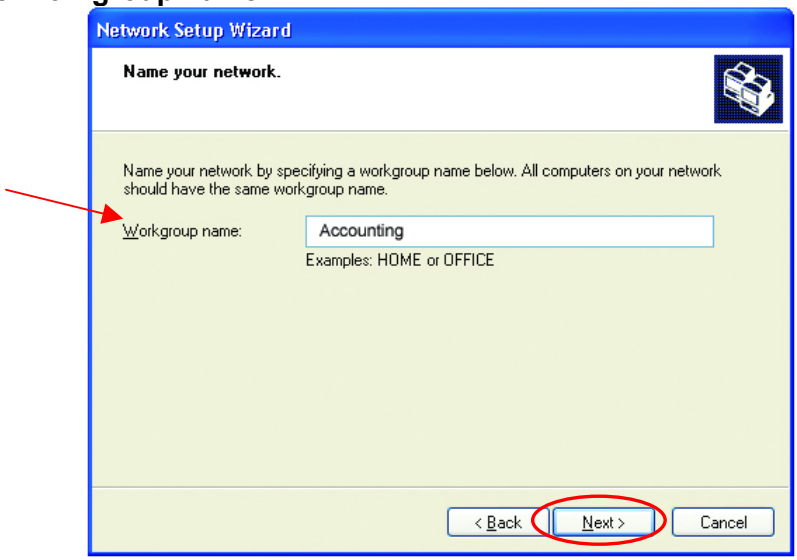

Fig. 8.5

Click **Next**

Please wait while the wizard applies the changes.

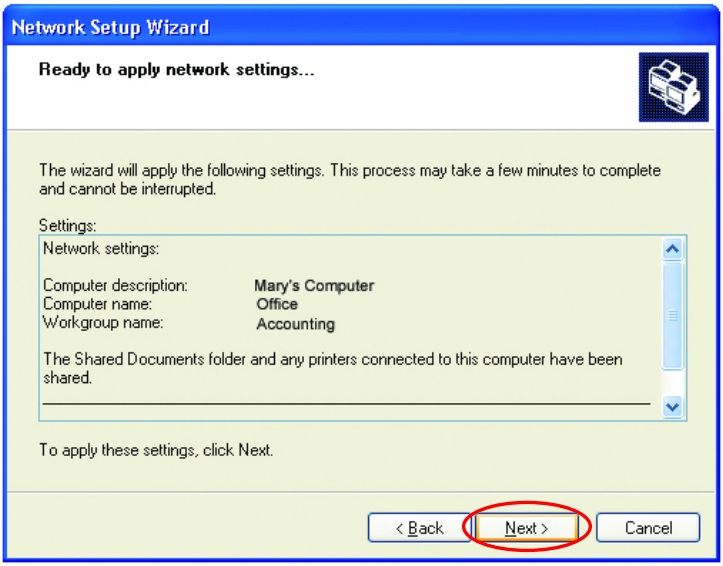

Fig. 8.6

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

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

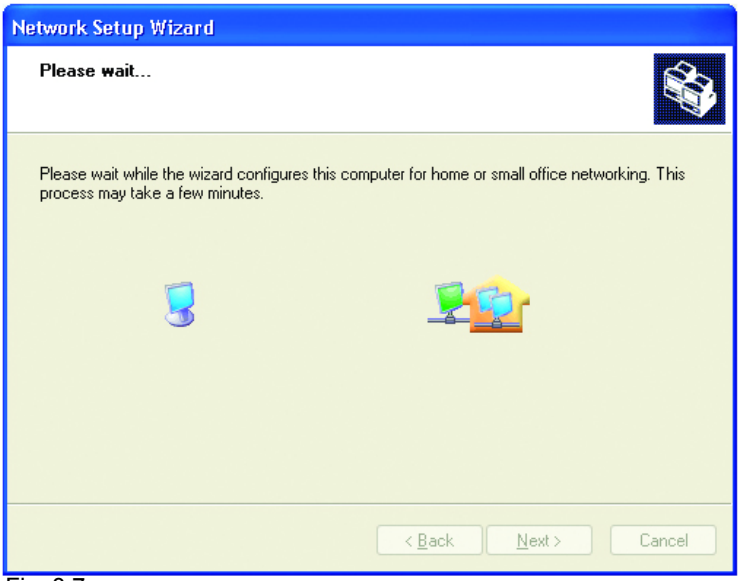

Fig. 8.7

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

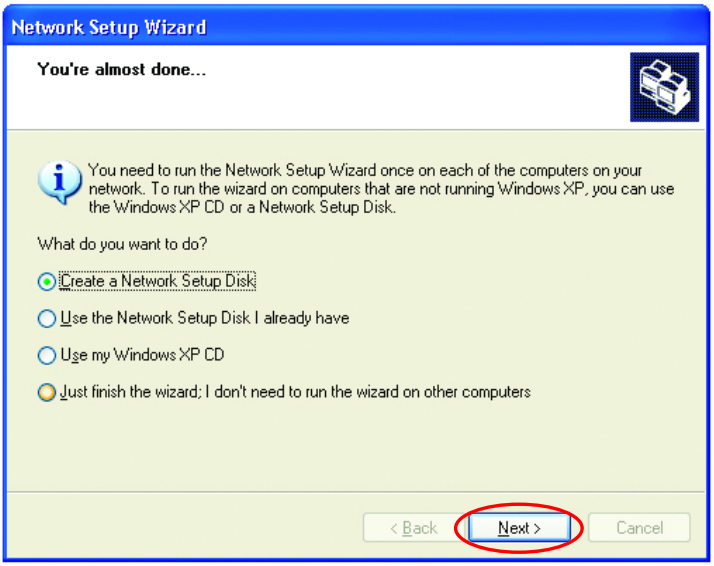

Fig. 8.8

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

Fig. 8.9

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

Please wait while the wizard copies the files.

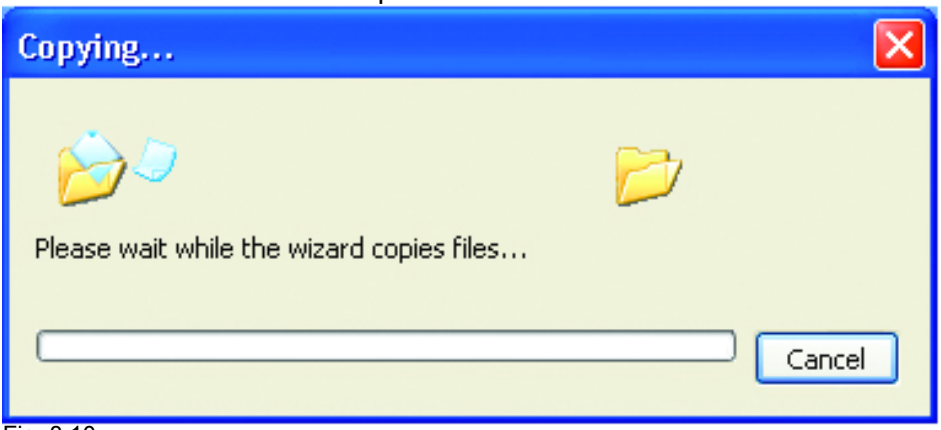

Fig. 8.10

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**

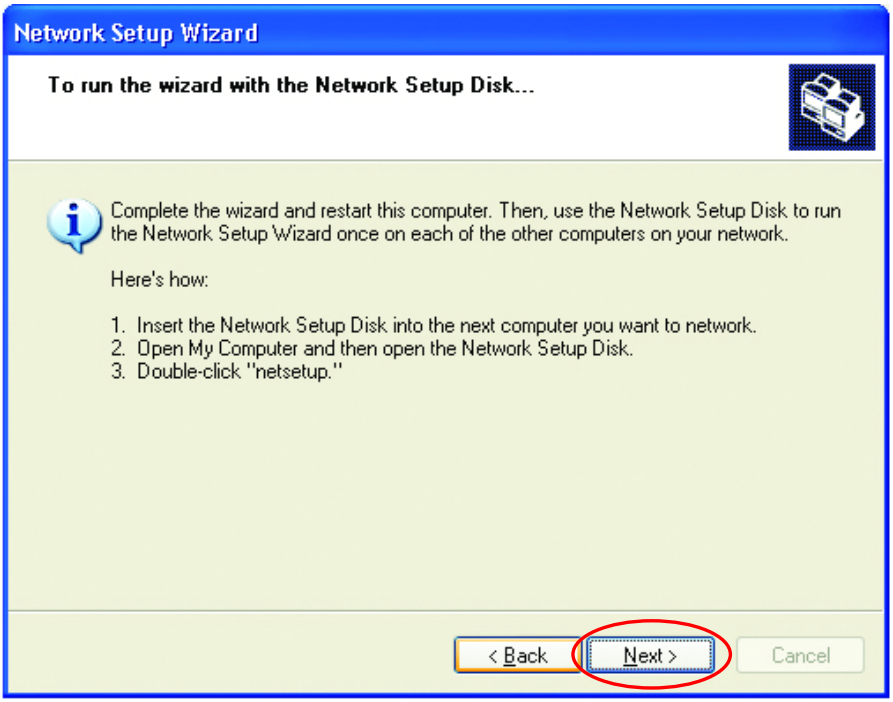

Fig. 8.11

Networking Basics

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

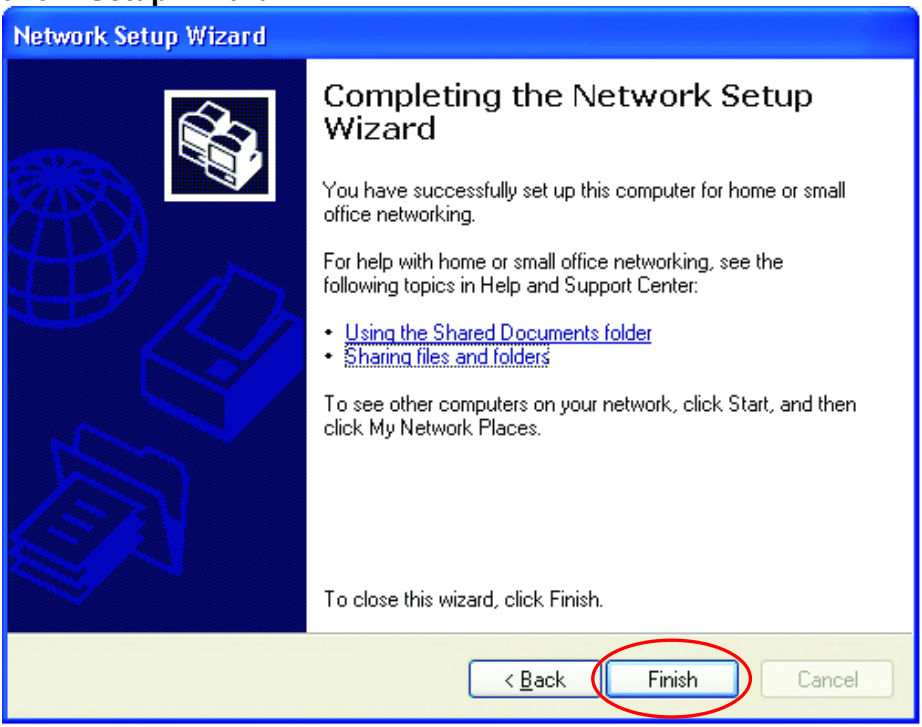

Fig. 8.12

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

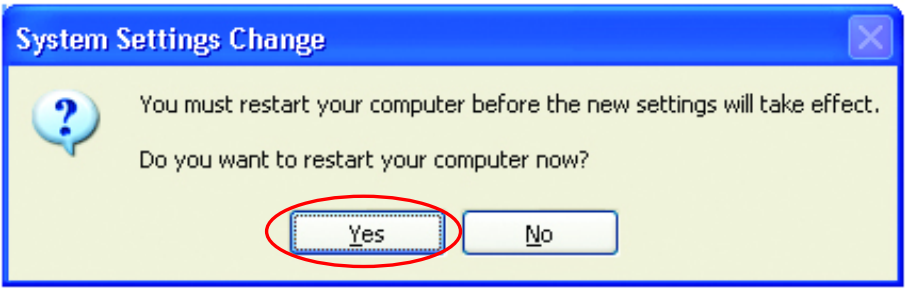

Fig. 8.13

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**

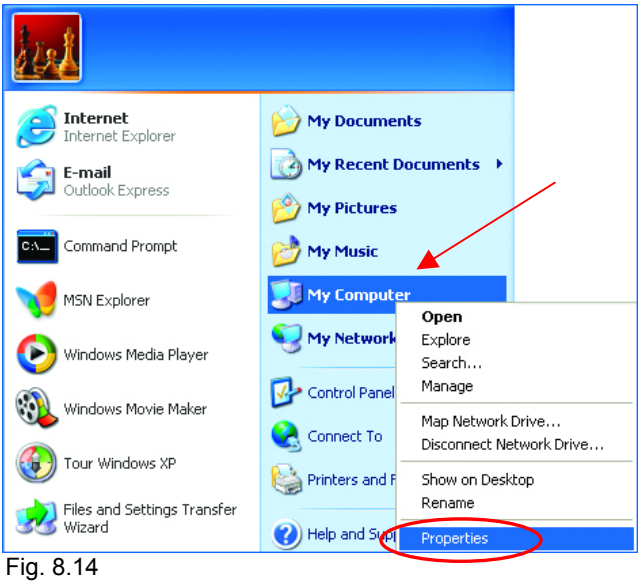

Fig. 8.14

- 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 or join a domain,

- Click **Change**

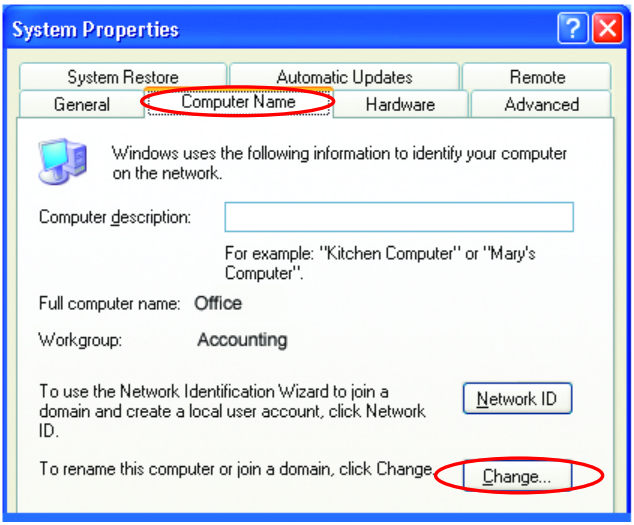

Fig. 8.15

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**

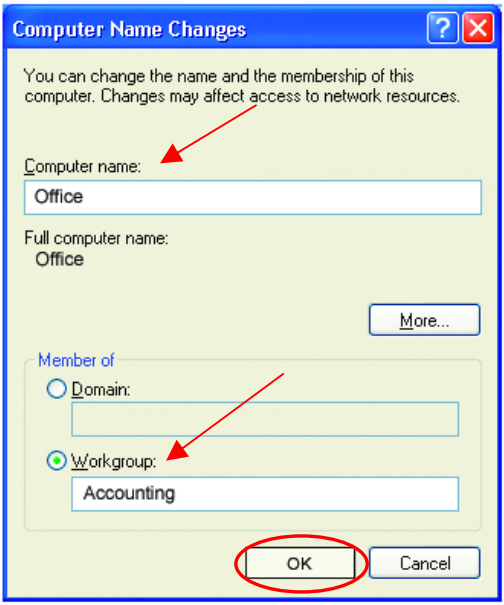

Fig. 8.16

Checking the IP Address in Windows XP/2000

Go to Start > All Programs > Accessories > Command Prompt

Fig. 8.17

Checking the IP Address in Windows XP/2000

Type **Command**

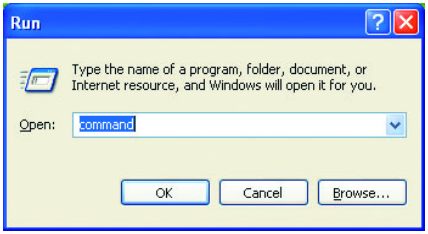

Fig. 8.18

Type **ipconfig /all** at the prompt. All the configuration settings are displayed as shown below.

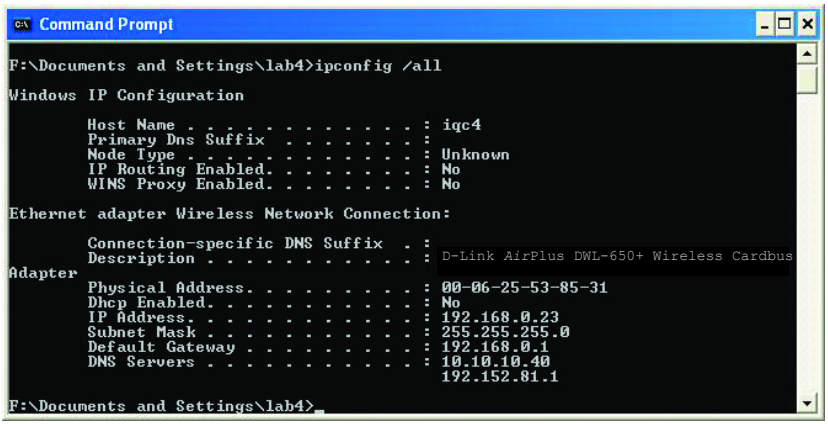

Fig. 8.19

Type **ipconfig /renew** at the prompt to get a new IP Address, shown below.

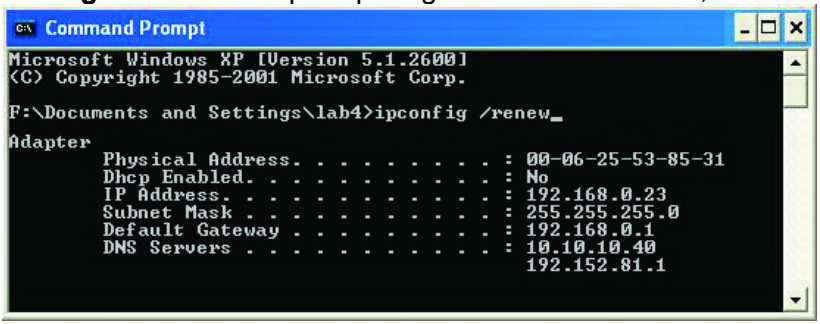

Fig. 8.20

(**Windows 98/ME users:** go to **Start** > **Run**. Type **Command**. Type **winipcfg** at the prompt. Click **Release and Renew** to obtain a new IP Address.)

Networking Basics

Assigning a Static IP Address

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**

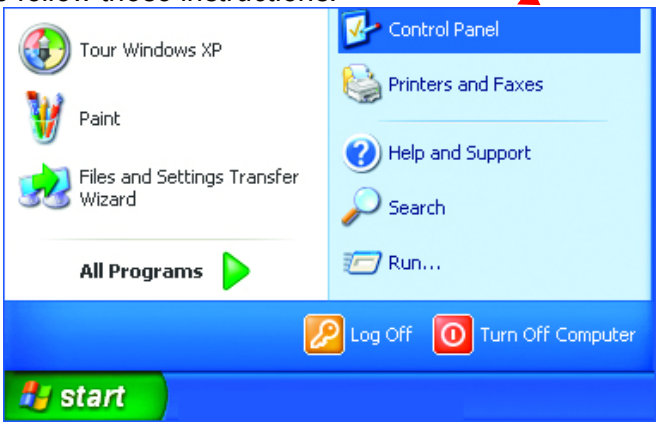

Fig. 8.21

- Double-click on **Network Connections**

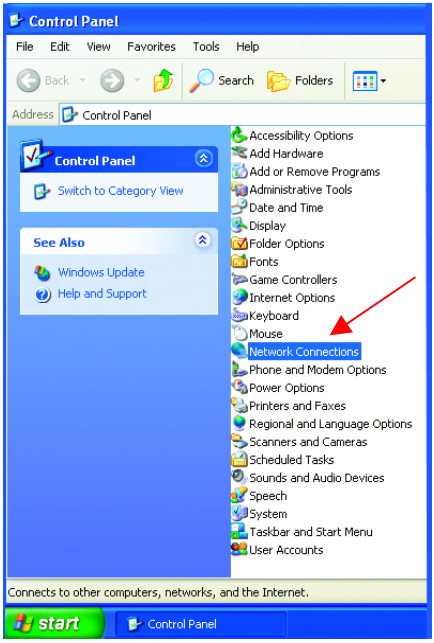

Fig. 8.22

Assigning a Static IP Address

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

- Click **Properties**

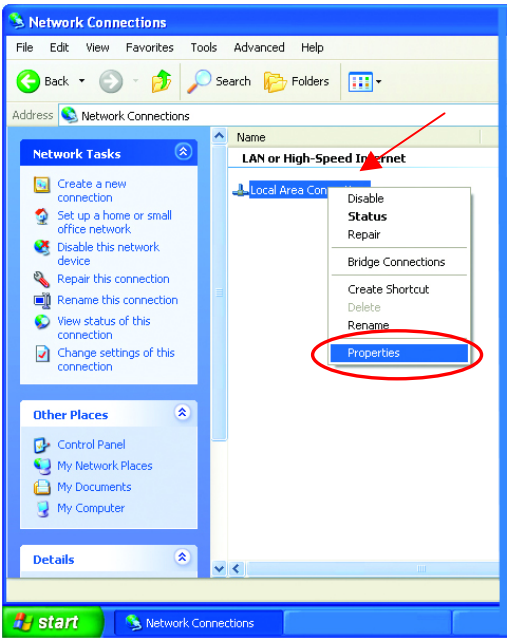

Fig. 8.23

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

- Click **Properties**

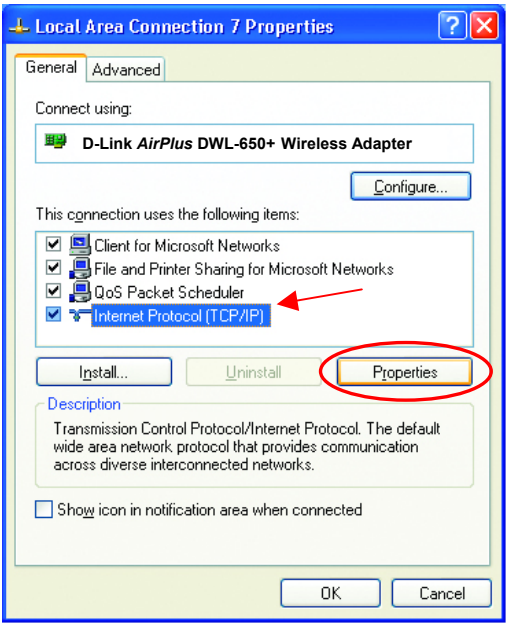

Fig. 8.24

Assigning a Static IP Address

- **Select Use the following IP address** in the **Internet Protocol (TCP/IP) Properties** window,
- **Input** your **IP address and subnet mask.** (The IP Addresses on your network must be within the same range. For example, if one computer has an IP Address of 192.168.0.2, the other computers should have IP Addresses that are between 192.168.0.3 and 192.168.0.254. No two computes can have the same IP Address. The subnet mask must be the same for all the computers on the network.)
- Input your **DNS server address only if you plan to use the Internet. (Note: If you are entering a DNS server address, you must also enter the IP Address of the Default Gateway.)**

The DNS server information will be provided by your ISP (Internet Service Provider.)

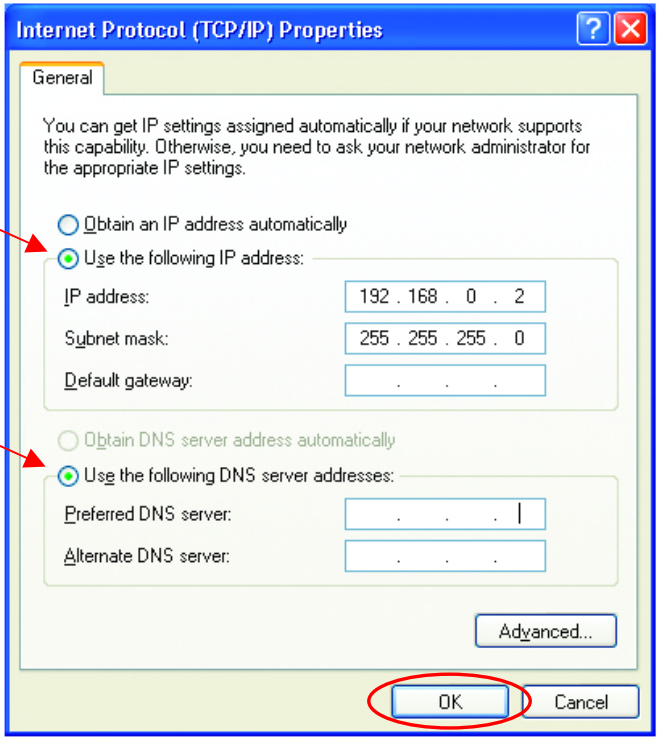

Fig. 8.25

- 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

Connecting to a Wireless Network in Windows XP

To be able to connect to a wireless network, make sure the proper network settings are configured for DWL-650+.

Go to **Start** > right-click on **My Network Places** >
select **Properties** > double-click on the **Wireless Network Connection** associated with the DWL-650+ > select **Properties** > select **Internet Protocol (TCP/IP)** > click **Properties**

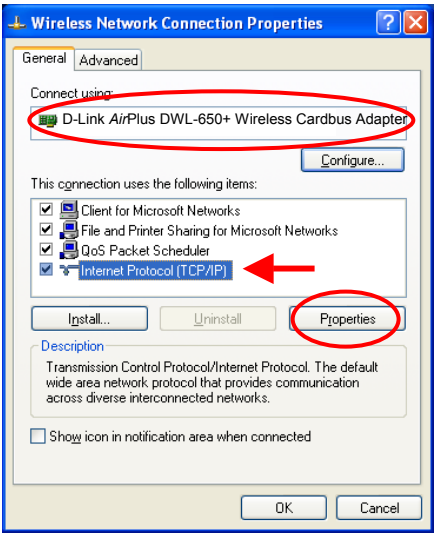

Fig. 8.26

Connecting to a Wireless Network with a Wireless Router or an Access Point using a DHCP server in Windows XP.

Select **Obtain an IP address automatically** - if the Wireless Router or Access Point has DHCP server enabled

Select **Obtain DNS server address automatically.**

Click **OK**

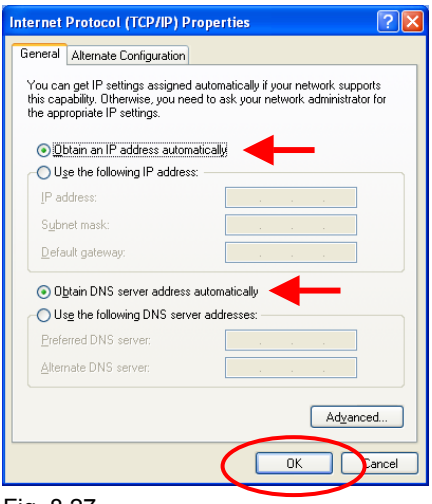

Fig. 8.27

Connecting to a Wireless Network with a Wireless Router or an Access Point using a static IP address in Windows XP.

Select **Use the following IP address** - if the Wireless Router or Access Point **does not** have a DHCP server enabled.

Input a static IP address within the same range as the Wireless Router or Access Point.

IP address: 192.168.0.51
Subnet mask: 255.255.255.0
Default Gateway: Enter the LAN IP address of the Wireless Router

Select **Use the following DNS server address**. Enter the LAN IP address of the Wireless Router.
Click **OK**

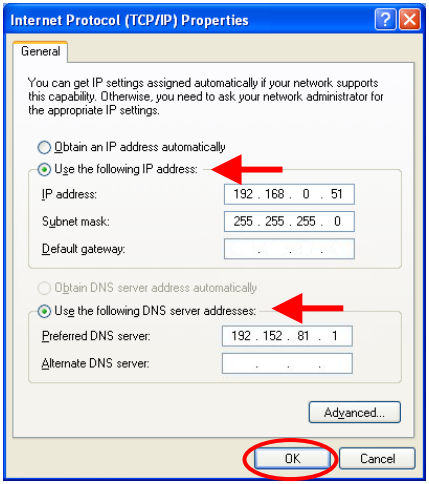

Fig. 8.28

Connecting to a Wireless Network in Windows 2000

Go to **Start** > **Settings** > **Network and Dial-up Connections** > Double click on the **Local Area Connection** associated with the DWL-650+ > select **Properties** > select **Internet Protocol (TCP/IP)** > click **Properties**

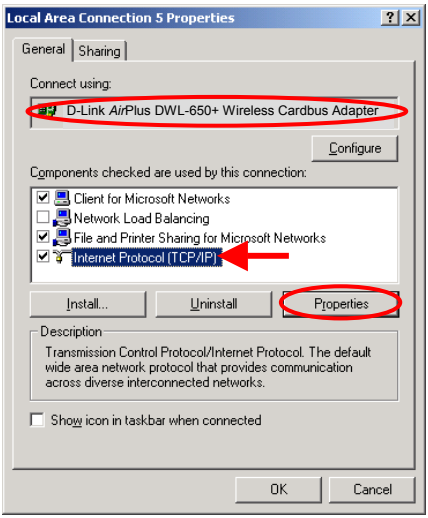

Fig. 8.29

Connecting to a Wireless Network with a Wireless Router or an Access Point using a DHCP server in Windows 2000.

Select **Obtain an IP address automatically.**

Select **Obtain DNS server address automatically.**

Click **OK**

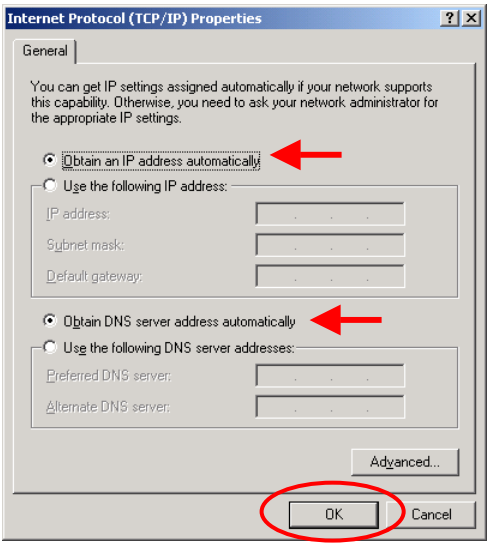

Fig. 8.30

Connecting to a Wireless Network with a Wireless Router or an Access Point using a static IP address in Windows 2000.

Select **Use the following IP address**

Input a static IP Address within the same IP Address range as the wireless router or the access point.

IP address: 192.168.0.51
Subnet mask: 255.255.255.0
Default Gateway: Enter the LAN IP address of the Wireless Router

Select **Use the following DNS server address.** Leave this section blank.
Click **OK**

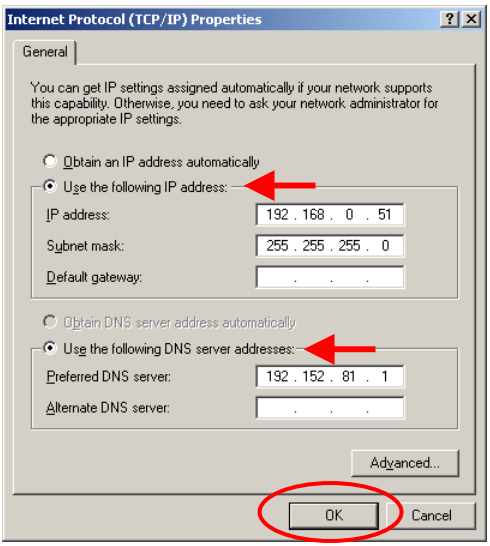

Fig 8.31