



Manual

Version 1.0

DWL-AG700AP

Wireless AG Access Point

Table of Contents

Table of Contents	2
Package Contents	3
Introduction	4
Connections	5
LEDs	6
Features and Benefits	7
Wireless Basics	8
Installation Considerations	9
Getting Started	10
Using the Configuration Menu	11
Networking Basics	30
Troubleshooting	46
Technical Specifications	52
Contacting Technical Support	55
Warranty	56
Registration	59

Package Contents



- **D-Link AirPlus® AG DWL-AG700AP** Wireless AG Access Point
- Power Supply - 5V DC 2.0A
- Manual on CD
- Quick Installation Guide
- Ethernet Cable

Note: Using a power supply with a different voltage than the one included with the **DWL-AG700AP** will cause damage and void the warranty for this product.

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

Minimum System Requirements

- Computers with Windows XP/2000, Macintosh, or Linux-based operating systems with an installed Ethernet Adapter
- Internet Explorer version 6.0 or Netscape Navigator version 7.0 and above

Introduction

With a maximum wireless signal rate of up to 54Mbps*, the DWL-AG700AP is a wireless access point that enables dualband networks, conveniently delivering connectivity in both the 802.11a and 802.11g bands.

With the DWL-AG700AP, bandwidth-intensive applications like graphics or multimedia will benefit significantly because large files are able to move across the network quickly.

The D-Link *AirPlus* AG DWL-AG700AP provides maximum security with the option of WPA or WEP. Additional security is provided with the optional use of filters for managing network access.

With dualband capabilities, maximum wireless signal rates up to 54Mbps, enhanced security features including WPA and optional filter management, the DWL-AG700AP is a versatile choice for your diverse network needs.

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

Connections



Pressing the **Reset Button** restores the router to its original factory default settings.

Receptor for the **Power Adapter**.

The **Auto/MDIX LAN** port automatically senses the cable type when connecting to Ethernet-enabled computers.

LEDs



Power LED

A solid light indicates a proper connection to the power supply.

WLAN LED

A solid light indicates that the wireless segment (802.11a and/or 802.11b/g) is ready. This LED blinks during data transmission.

LOCAL NETWORK LED

A solid light indicates a connection (10M and/or 100M) to an Ethernet port. The LEDs blink during data transmission.

Features and Benefits

- **Compatible with IEEE802.11a and IEEE802.11g standards** to provide a wireless data rate of up to 54Mbps.*
- **Backward compatible with the 802.11b standard** to provide a wireless data rate of up to 11Mbps with 802.11b devices - that means you can migrate your system to the 802.11g standard on your own schedule without sacrificing connectivity.
- **Better security with WPA-PSK** - The DWL-AG700AP can securely connect to wireless clients on the network using WPA-PSK providing a much higher level of security for your data and communications than has previously been available.
- **Supports WEP encryption.**
- **Optional filter management feature** - Access to your network can be controlled by the MAC addresses of the devices, using the optional filter tool included in your convenient Web-based management utility.

*Maximum wireless signal rate based on IEEE Standard 802.11a/g specifications. Actual data throughput will vary.

Wireless Basics

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

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

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

People use WLAN technology for many different purposes:

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

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

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

Inexpensive Solution - Wireless network devices are as competitively priced as conventional Ethernet network devices. The DWL-AG700AP saves money by providing multi-functionality, configurable in one of four different modes.

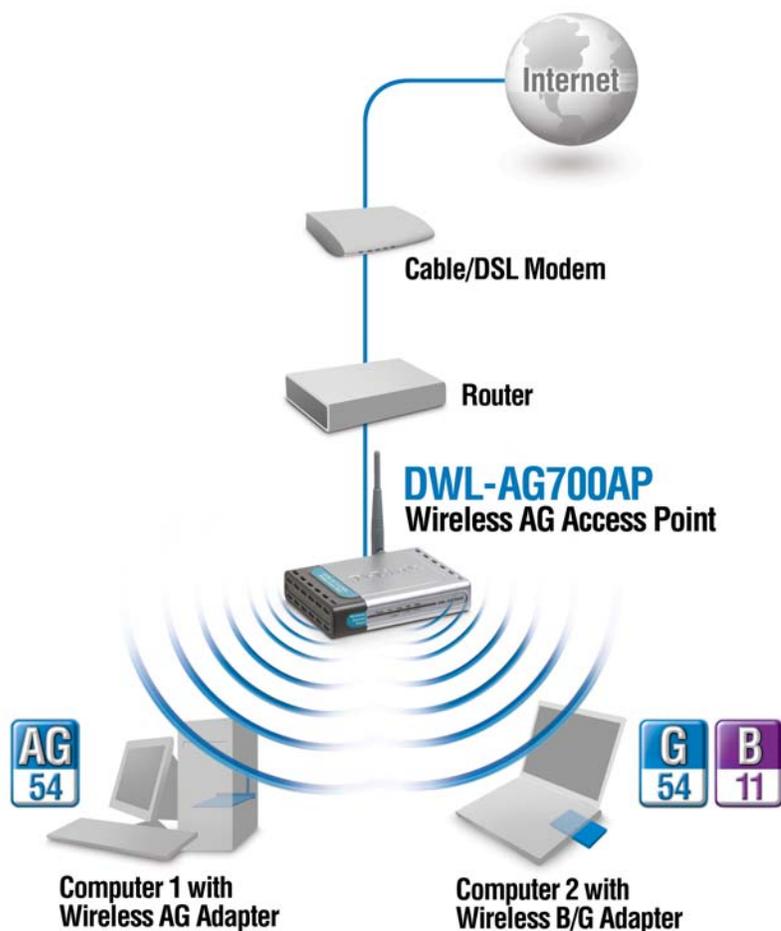
Scalability - WLANs can be configured in a variety of ways to meet the needs of specific applications and installations. Configurations are easily changed and range from Peer-to-Peer networks suitable for a small number of users to larger Infrastructure networks to accommodate hundreds or thousands of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

Installation Considerations

The D-Link DWL-AG700AP lets you access your network, using a wireless connection, from virtually anywhere within its operating range. Keep in mind, however, that the number, thickness and location of walls, ceilings, or other objects that the wireless signals must pass through, may limit the range. Typical ranges vary depending on the types of materials and background RF (radio frequency) noise in your home or business. The key to maximizing wireless range is to follow these basic guidelines:

- 1** Keep the number of walls and ceilings between the DWL-AG700AP and other network devices to a minimum - each wall or ceiling can reduce your DWL-AG700AP'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



- 1** You will need broadband Internet access.
- 2** Consult with your Cable or DSL provider for proper installation of the modem.
- 3** Connect the Cable or DSL modem to a Router.
(See the printed Quick Installation Guide included with your router.)
- 4** Connect the Router to the DWL-AG700AP.
(See the printed Quick Installation Guide included with the DWL-AG700AP.)
- 5** Install a wireless AG adapter into computer 1.
(See the printed Quick Installation Guide included with the wireless AG adapter.)
- 6** Install a wireless AG adapter into computer 2.
(See the printed Quick Installation Guide included with the wireless AG adapter.)

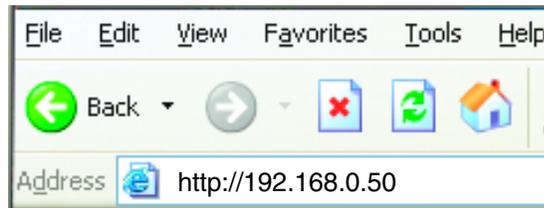
Using the Configuration Menu

To configure the DWL-AG700AP, use a computer which is connected to the DWL-AG700AP with an Ethernet cable.

First, disable the **Access the Internet using a proxy server** function. To disable this function, go to **Control Panel > Internet Options > Connections > LAN Settings** and uncheck the enable box.

Start your Web browser program (Internet Explorer, Netscape Navigator) .

Type the IP address of the DWL-AG700AP in the address field (<http://192.168.0.50>) and press **Enter**. Make sure that the IP addresses of the DWL-AG700AP and your computer are in the same subnet.



After the connection is established, you will see the user identification window as shown.

Note: If you have changed the default IP address assigned to the DWL-AG700AP, make sure to enter the correct IP address.

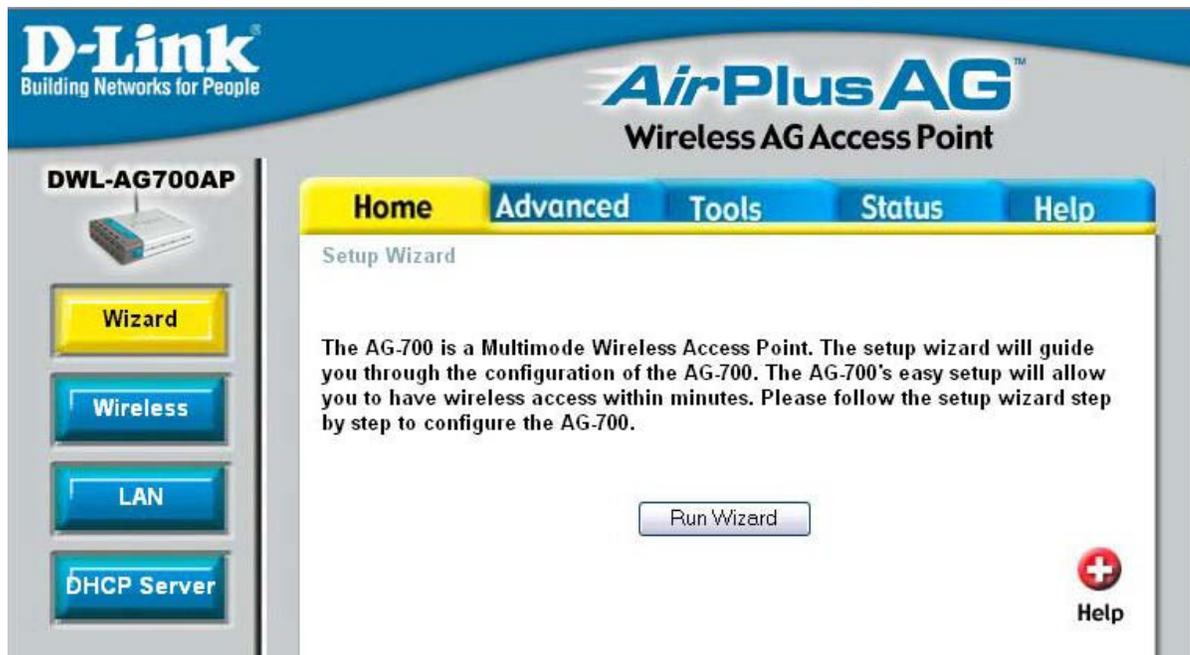
- Type **admin** in the **User Name** field
- Leave the **Password** field blank
- Click **OK**



Note: If you have changed the password, make sure to enter the correct password.

Home > Wizard

The Home>Wizard screen will appear. Please refer to the *Quick Installation Guide* for more information regarding the Setup Wizard.



These buttons appear on most of the configuration screens in this section. Please click on the appropriate button at the bottom of each screen after you have made a configuration change.



Apply

Clicking **Apply** will save changes made to the page



Cancel

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



Help

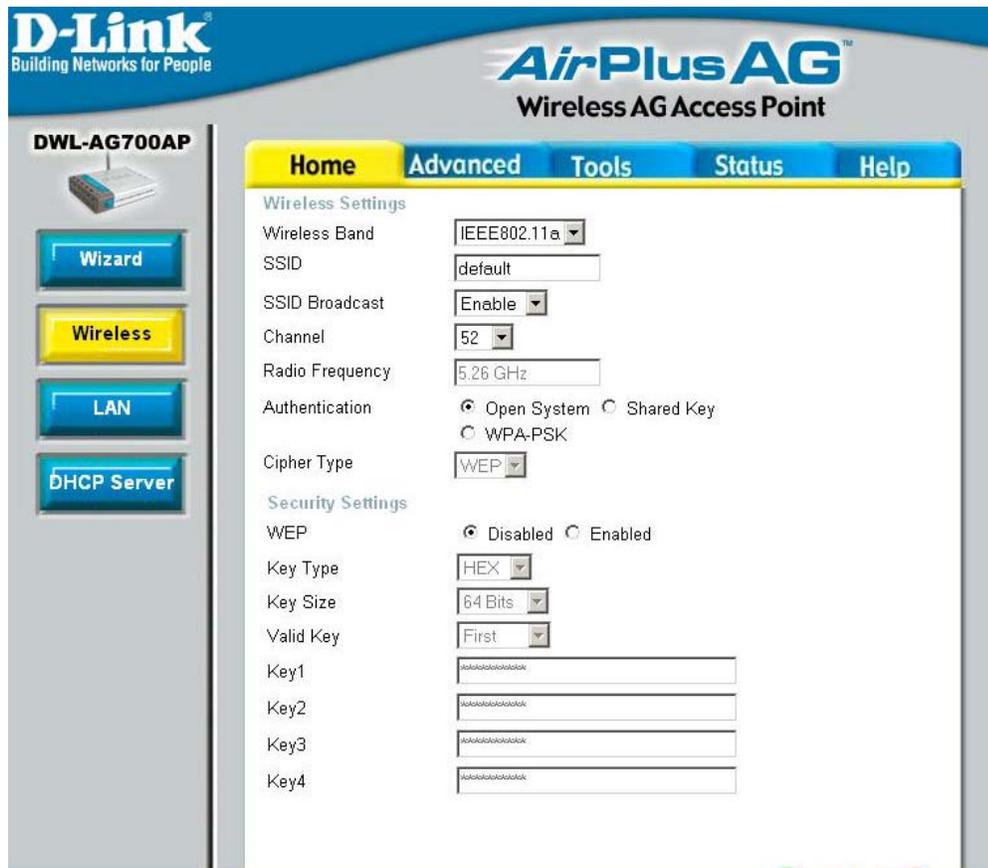
Clicking **Help** will bring up helpful information regarding the page



Restart

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

Home > Wireless



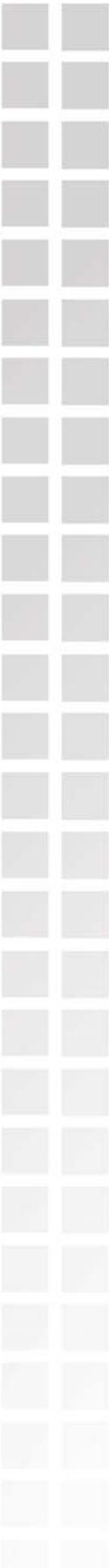
Wireless Band: IEEE802.11a is selected here. The other option is IEEE802.11g. Choose the wireless band from the pulldown menu.

SSID: Service Set Identifier (SSID) is the name designated for a specific wireless local area network (WLAN). The SSID's factory default setting is **default**. The SSID can be easily changed to connect to an existing wireless network or to establish a new wireless network.

SSID Broadcast: Enable or Disable SSID broadcast. Enabling this feature broadcasts the SSID across the network.

Channel: **52** is the default channel for the 802.11a wireless band. **6** is the default channel for the 802.11g wireless band. All devices on the network must share the same channel. (Note: The wireless adapters will automatically scan and match the wireless setting.)

Radio Frequency: The radio frequency will vary depending on the wireless channel that is chosen. The frequency in channel 52 is 5.26GHz.



Home > Wireless - continued

- Authentication:** **Open System** - Communicates the key across the network.
Shared Key - limits communication to only those devices that share the same WEP settings.
WPA-PSK - increases the security level without a RADIUS server. When you select WPA-PSK, you will need to enter a **Passphrase** and select a Cipher (EAP) type.
- Cipher Type:** When you select WPA-PSK, choose a Cipher (EAP) type: AES, Auto or TKIP.
- WEP Type:** Select Enabled or Disabled.
- Key Type:** Select HEX or ASCII. **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 Size:** Select 64-, 128-, 152-bit key size.
- Valid Key:** Select one key from the four keys that have been input.
- Keys 1-4:** Input up to four encryption keys here.
- Apply:** Click Apply to save the settings.

Home > LAN



LAN is short for Local Area Network. This is considered your internal network. These are the IP settings of the LAN interface for the DWL-AG700AP. These settings may be referred to as private settings. You may change the LAN IP address if needed. The LAN IP address is private to your internal network and cannot be seen on the Internet.

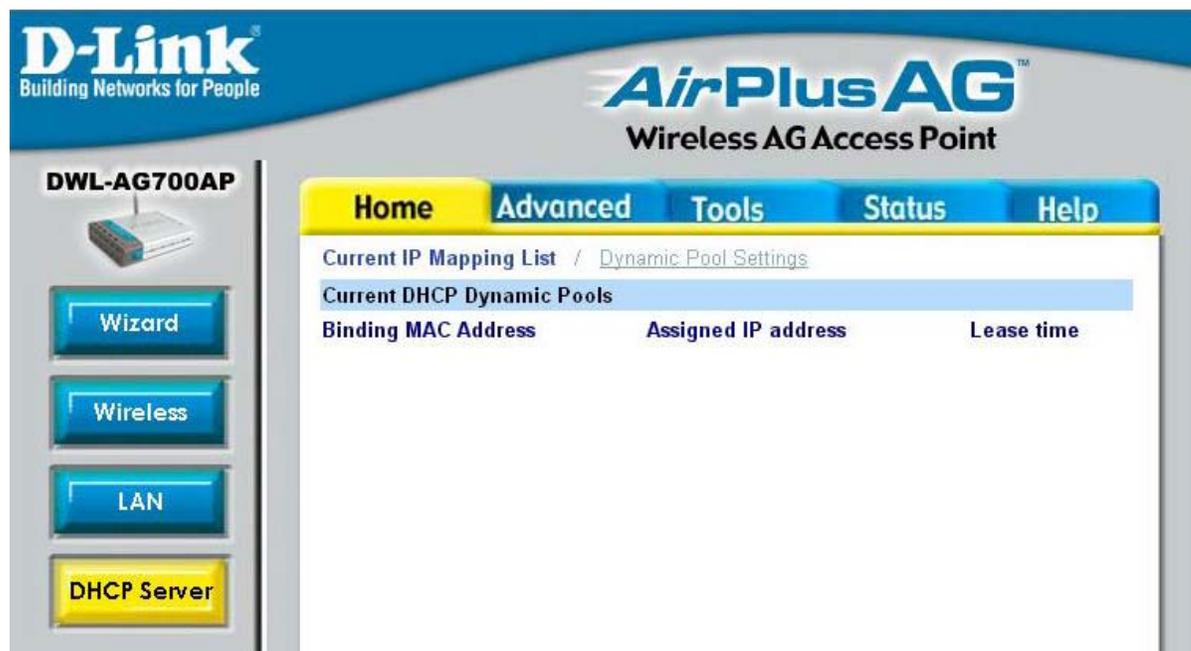
Get IP From: Static (Manual) is chosen here. Choose this option if you do not have a DHCP server in your network, or if you wish to assign a static IP address to the DWL-AG700AP.

IP Address: The default IP address is 192.168.0.50. Assign a static IP address that is within the IP address range of your network.

Subnet Mask: Enter the subnet mask. All devices in the network must share the same subnet mask..

Default Gateway: Enter the IP address of the gateway in your network. If there isn't a gateway in your network, please enter an IP address within the range of your network.

Home > DHCP Server > Current IP Mapping



This screen displays information about the current DHCP dynamic and static IP address pools. This information is available when you enable the DHCP function of the DWL-AG700AP and assign dynamic and static IP address pools.

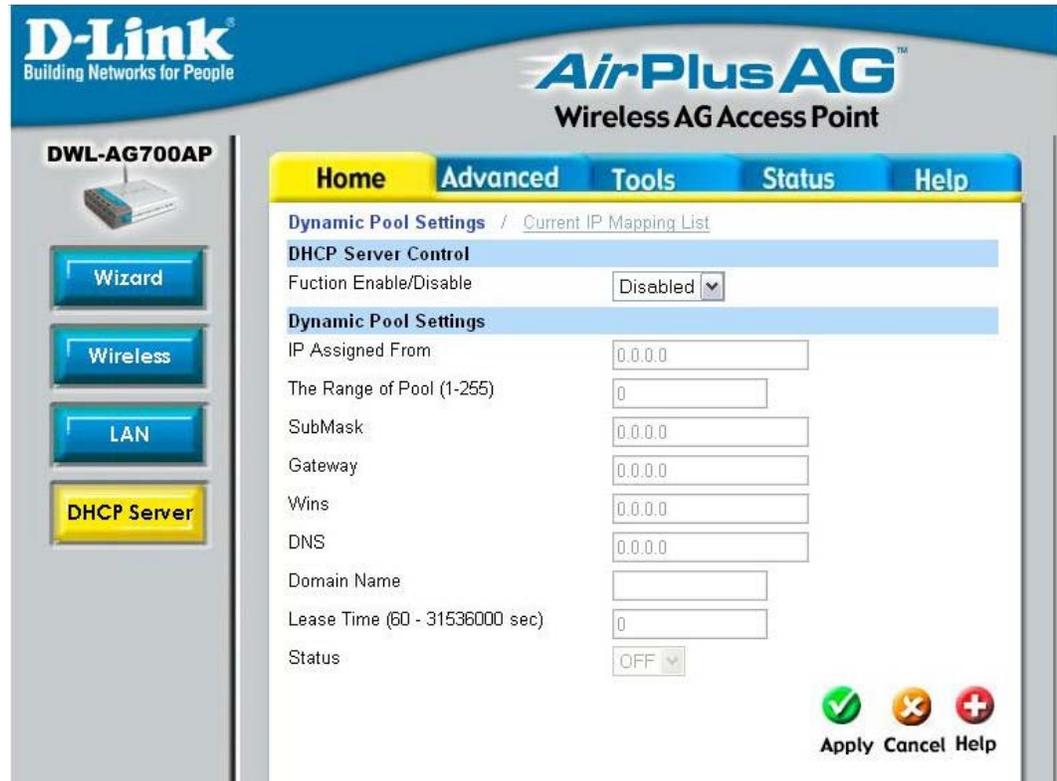
Current DHCP Dynamic Pools- These are IP address pools to which the DHCP server function has assigned dynamic IP addresses.

Binding MAC address- The MAC address of a device on the network that is within the DHCP dynamic IP address pool.

Assigned IP address- The current corresponding DHCP-assigned dynamic IP address of the device.

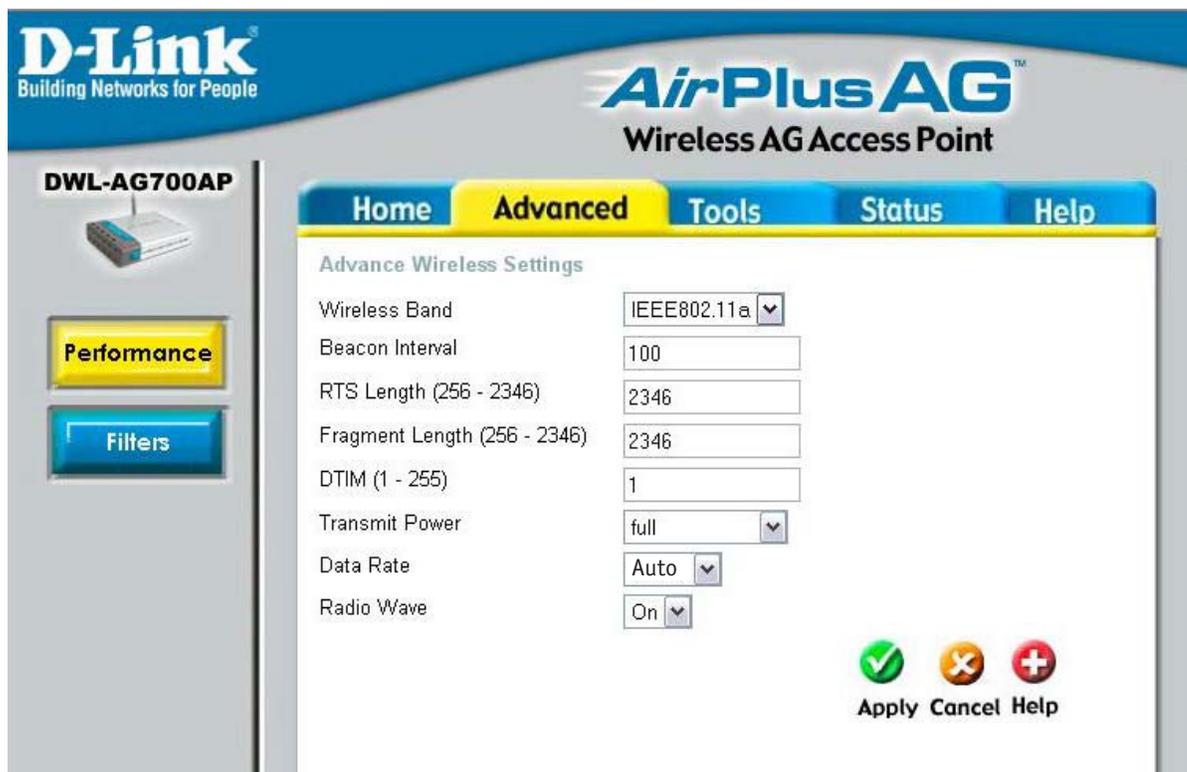
Lease Time- The length of time that the dynamic IP address will be valid.

Home > DHCP Server > Dynamic Pool Settings



- Function Enable or Disable:** **Enable** or **Disable** the DHCP function here.
- IP Assigned From:** Enter the starting IP address in the range.
- The Range of Pool (1-256):** Enter the number (quantity) of IP addresses in the range.
- SubMask:** Enter the subnet mask here.
- Gateway:** Enter the IP address of the router on the network.
- Wins:** **Windows Internet Naming Service** is a system that determines the IP address of a network computer that has a dynamically assigned IP address.
- DNS:** Enter the IP address of the DNS server. The DNS server translates domain names such as www.dlink.com into IP addresses.
- Domain Name:** Enter the Domain Name of the DWL-AG700AP.
- Lease Time (60-31536000 sec):** The Lease Time is the period of time before the DHCP server will assign new IP addresses.
- Status:** Turn the **Dynamic Pool Settings ON** or **OFF** here.

Advanced > Performance



Wireless Band: Select IEEE802.11a or IEEE802.11g. IEEE802.11a is selected here.

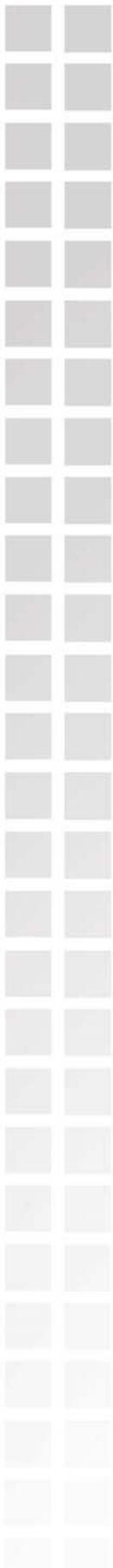
Beacon Interval: Beacons are packets sent by an access point to synchronize a network. Specify a beacon interval value. The default (100) is recommended.

RTS Length (256-2346): This value should remain at its default setting of 2346. If you encounter inconsistent data flow, only minor modifications to the value range between 256 and 2346 are recommended.

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

DTIM (1-255): (*Delivery Traffic Indication Message*) - Select a setting between 1 and 255. 1 is the default setting. DTIM is a countdown informing clients of the next window for listening to broadcast and multicast messages.

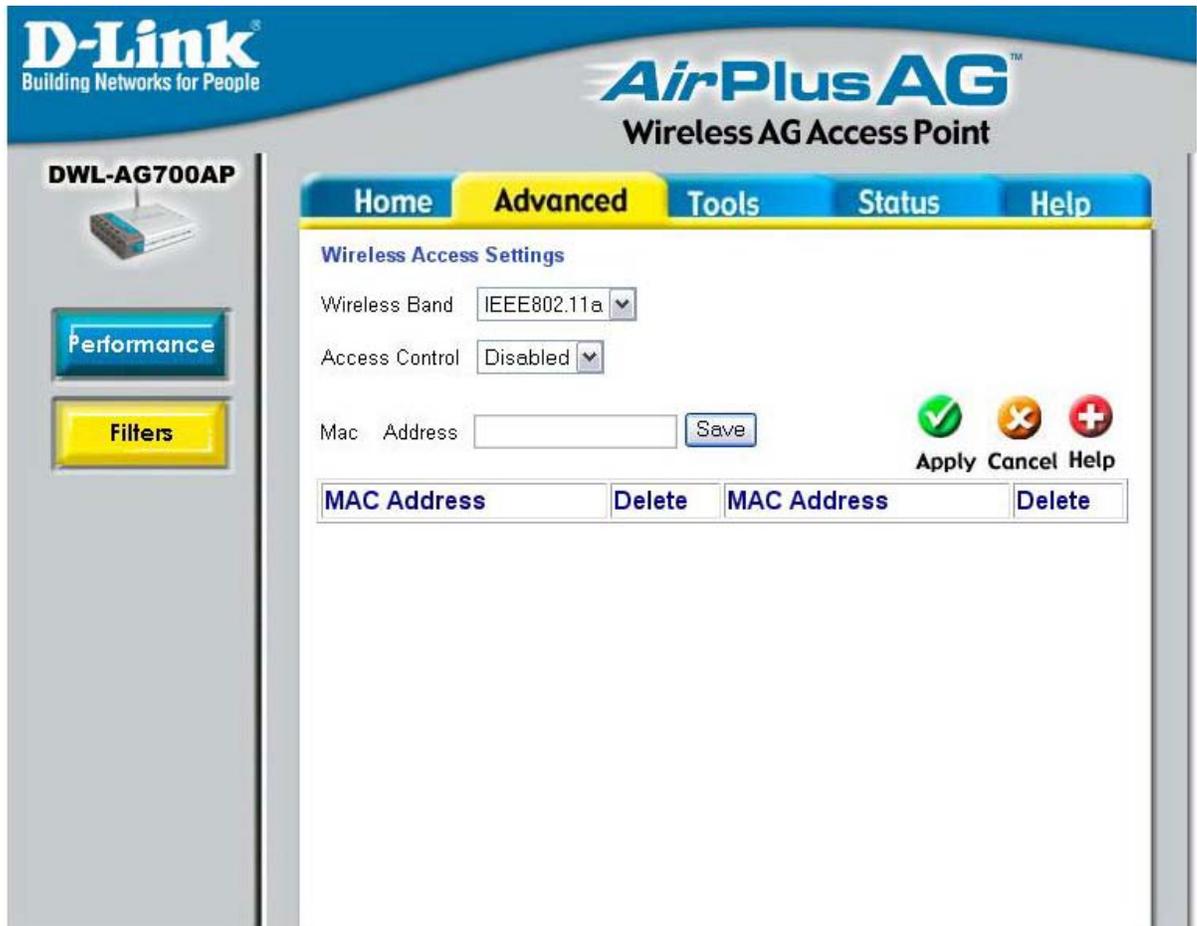
Transmit Power: Choose full, half (-3dB), quarter (-6dB), eighth (-9dB), minimum power.



Data Rate: The **Data Rates** are Auto, 1Mbps, 2Mbps, 5.5Mbps, 6Mbps, 9Mbps, 11Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps.

Radio Wave: Select ON or OFF.

Advanced > Filters > Wireless Access Settings



Wireless Band: Select IEEE802.11a or IEEE802.11g. IEEE802.11a is chosen here.

Access Control: Select **Disabled** to disable the filters function.
 Select **Accept** to accept only those devices with MAC addresses in the Access Control List.
 Select **Reject** to reject the devices with MAC addresses in the Access Control List.

MAC Address: Enter the MAC addresses that you wish to include in your filters list, and click **Save**.

MAC Address List: When you enter a MAC address, it appears in this list. Highlight a MAC address and click **Delete** to remove it from the list.

Tools > Admin



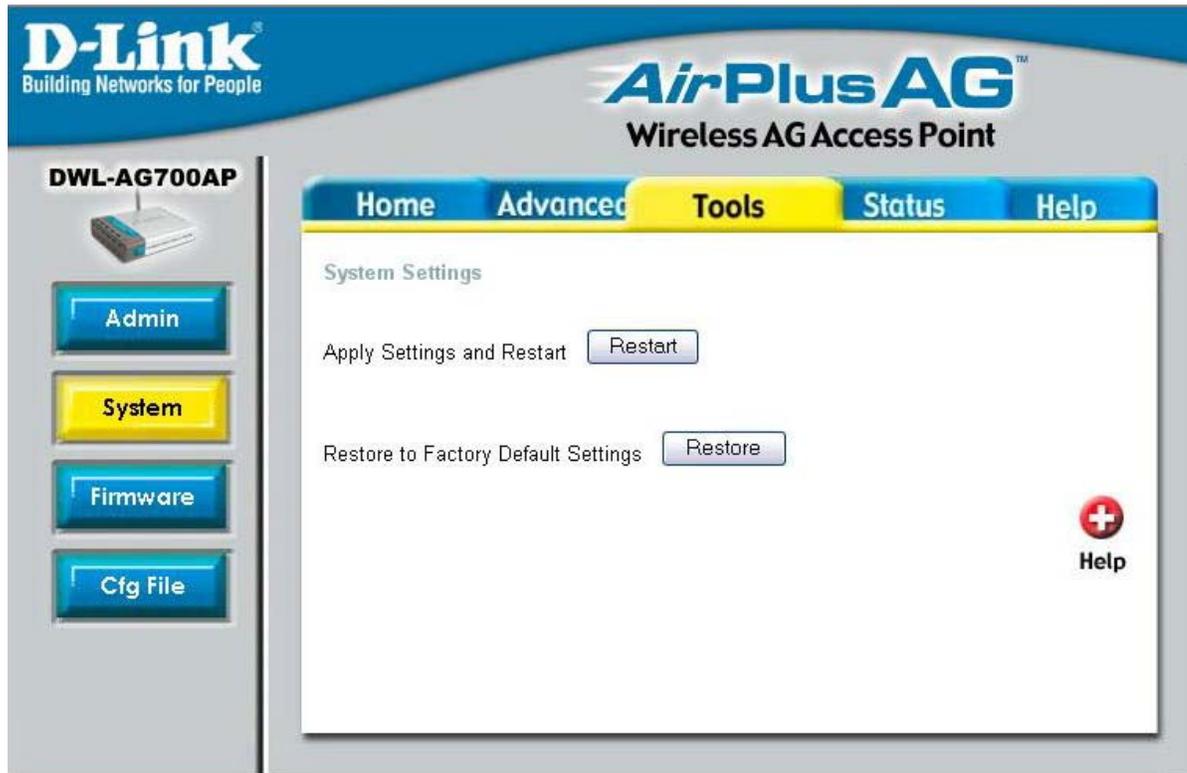
User Name: Enter a user name. The default setting is **admin**.

Old Password: To change your password, enter the old password here.

New Password: Enter your new password here.

Confirm New Password: Enter your new password again.

Tools > System



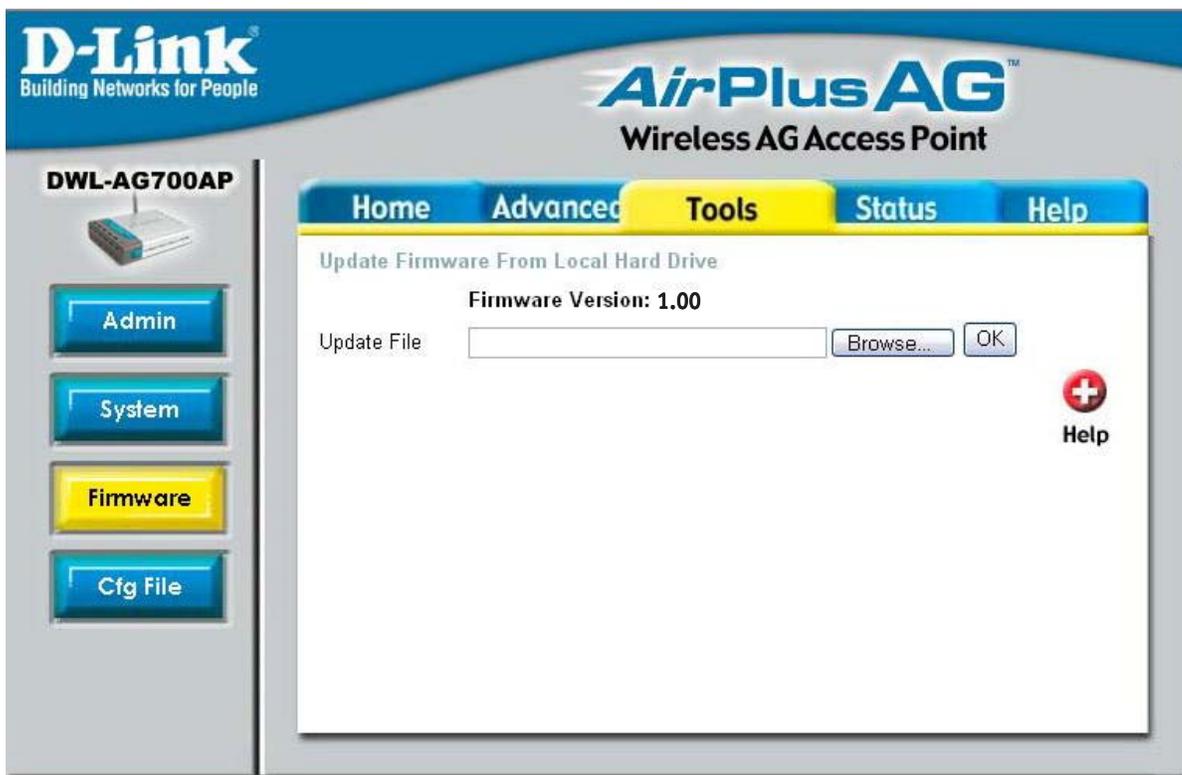
Apply Settings and Restart:

Click Restart to apply the system settings and restart the DWL-AG700AP.

Restore to Factory Default Settings:

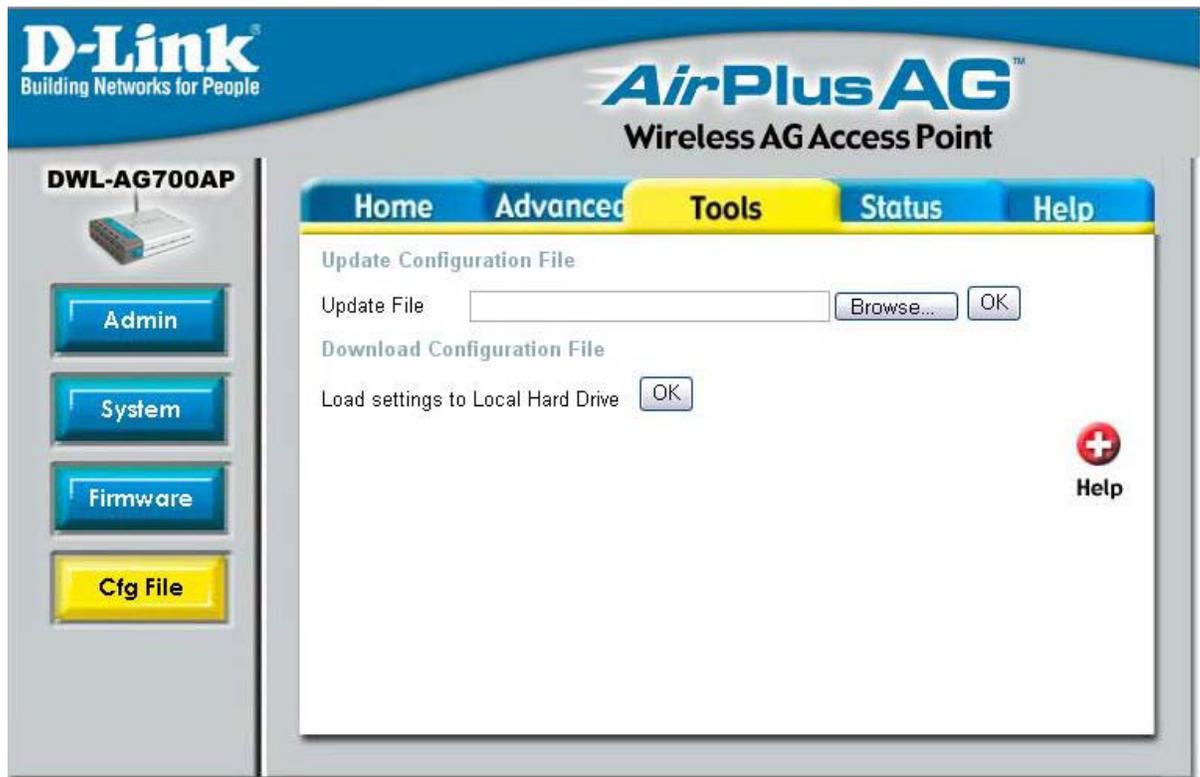
Click Restore to return the DWL-AG700AP to its factory default settings..

Tools > Firmware



Update File: After you have downloaded the most recent version of the firmware from <http://support.dlink.com> to your hard drive, you can **Browse** your hard drive to locate the downloaded file. Select the file and click **OK** to update the firmware.

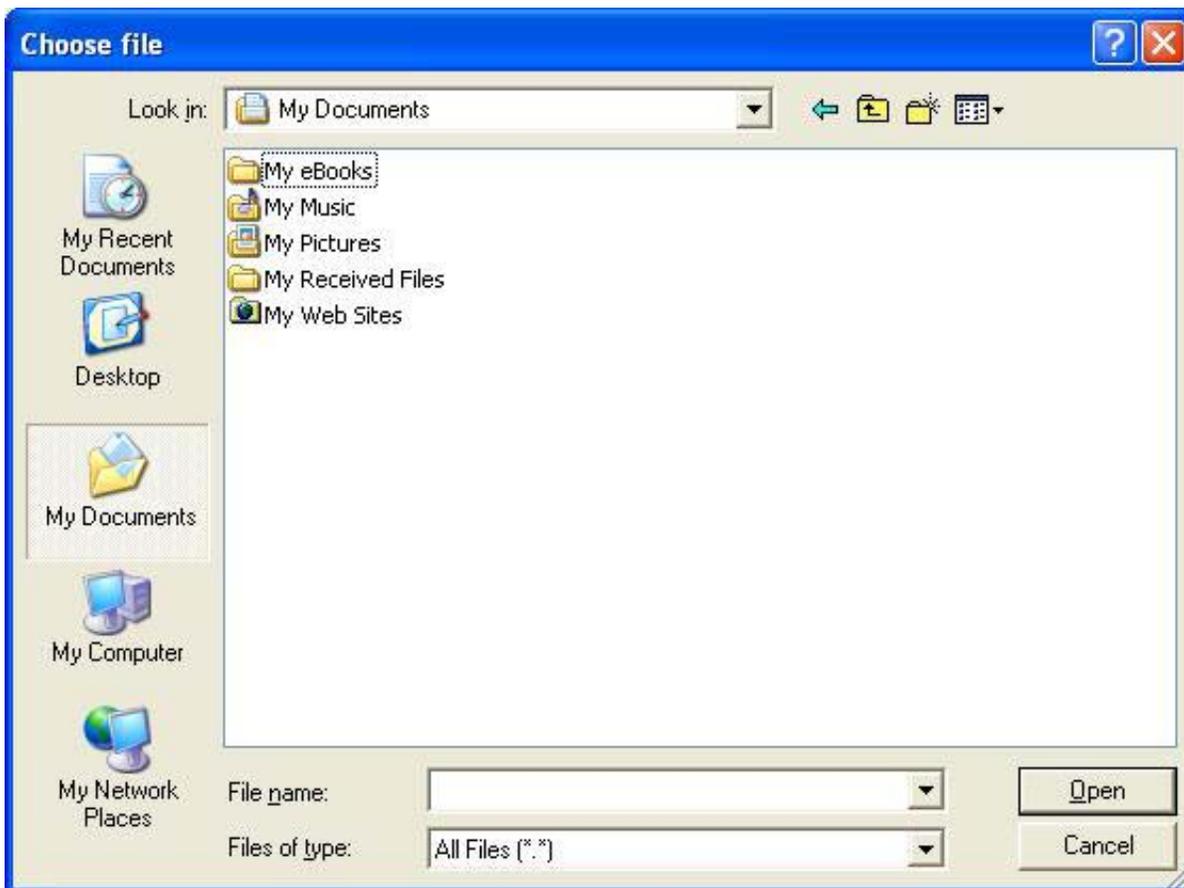
Tools > Cfg File



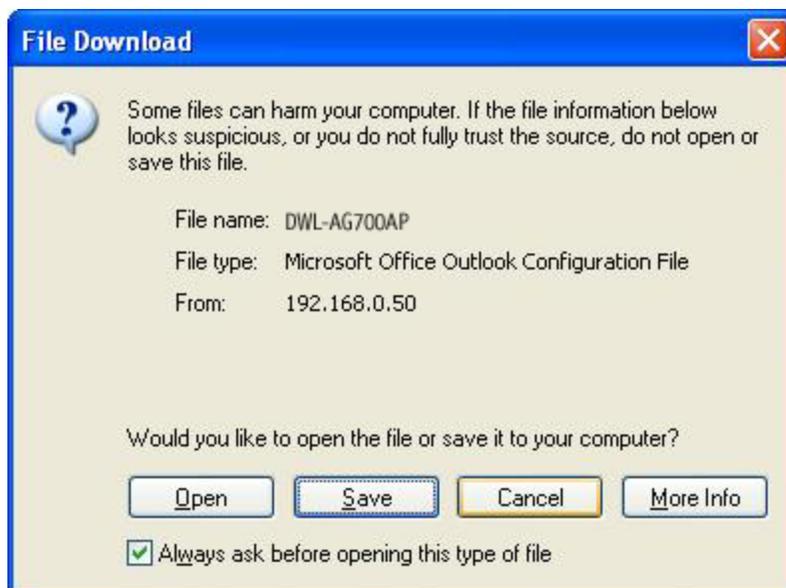
Update File: Browse for the configuration settings that you have saved to your hard drive. Click OK after you have selected the settings file.

Load Settings to the Local Hard Drive: Click OK to save the selected settings to your hard drive.

Tools > Cfg File > Choose file



When you click **Browse** in the previous screen, the dialog box shown above appears. Select the file you wish to download and click **Open**.



When this dialog box appears, click **Save** and select a location to save the configuration file.

Status > Device Info

The screenshot shows the configuration interface for a D-Link DWL-AG700AP. The top navigation bar includes 'Home', 'Advanced', 'Tools', 'Status' (highlighted), and 'Help'. The main content area is titled 'Device Information' and displays the following settings:

- Firmware Version:** 1.00
- MAC Address:** 00:0f:3d:fa:6e:3c
- Ethernet**
 - Get IP From: Manual
 - IP address: 192.168.0.50
 - Subnet Mask: 255.255.255.0
 - Gateway: 0.0.0.0
- Wireless (802.11a)**
 - SSID: default
 - Channel: 52
 - Super Mode: Disabled
 - Rate: Auto
 - Security Level: Open System / Encryption Disabled
- Wireless (802.11g)**
 - SSID: default
 - Channel: 6
 - Super Mode: Disabled
 - Rate: Auto
 - Security Level: Open System / Encryption Disabled

A 'Help' icon is visible in the bottom right corner of the interface.

Device Information: This window displays the settings of the DWL-AG700AP, the firmware version and the MAC address.

Status > Stats

D-Link
Building Networks for People

AirPlus AG™
Wireless AG Access Point

DWL-AG700AP

Device Info
Stats
Client Info

Home Advanced Tools **Status** Help

WLAN 802.11A Traffic Statistics / WLAN 802.11G Traffic Statistics

ThroughPut

Transmit Success Rate	51 %
Transmit Retry Rate	17 %
Receive Success Rate	30 %
Receive Duplicate Rate	53 %
RTS Success Count	94
RTS Failure Count	17

Transmitted Frame Count

Transmitted Frame Count	22
Multicast Transmitted Frame Count	49
Transmitted Error Count	12
Transmitted Total Retry Count	8
Transmitted Multiple Retry Count	39

Received Frame Count

Received Frame Count	27
Multicast Received Frame Count	36
Received Frame FCS Error Count	98
Received Frame Duplicate Count	53
Ack Rcv failure Count	76

Wep Frame Error Count

WEP Excluded Frame Count	64
WEP ICV Error Count	76

Refresh Help

WLAN 802.11A Traffic Statistics:

Choose **WLAN 802.11a Traffic Statistics**, or choose **WLAN 802.11g Traffic Statistics**. WLAN 802.11a is chosen here. This window displays the statistics of the IEEE802.11a or IEEE802.11g network, depending upon your selection.

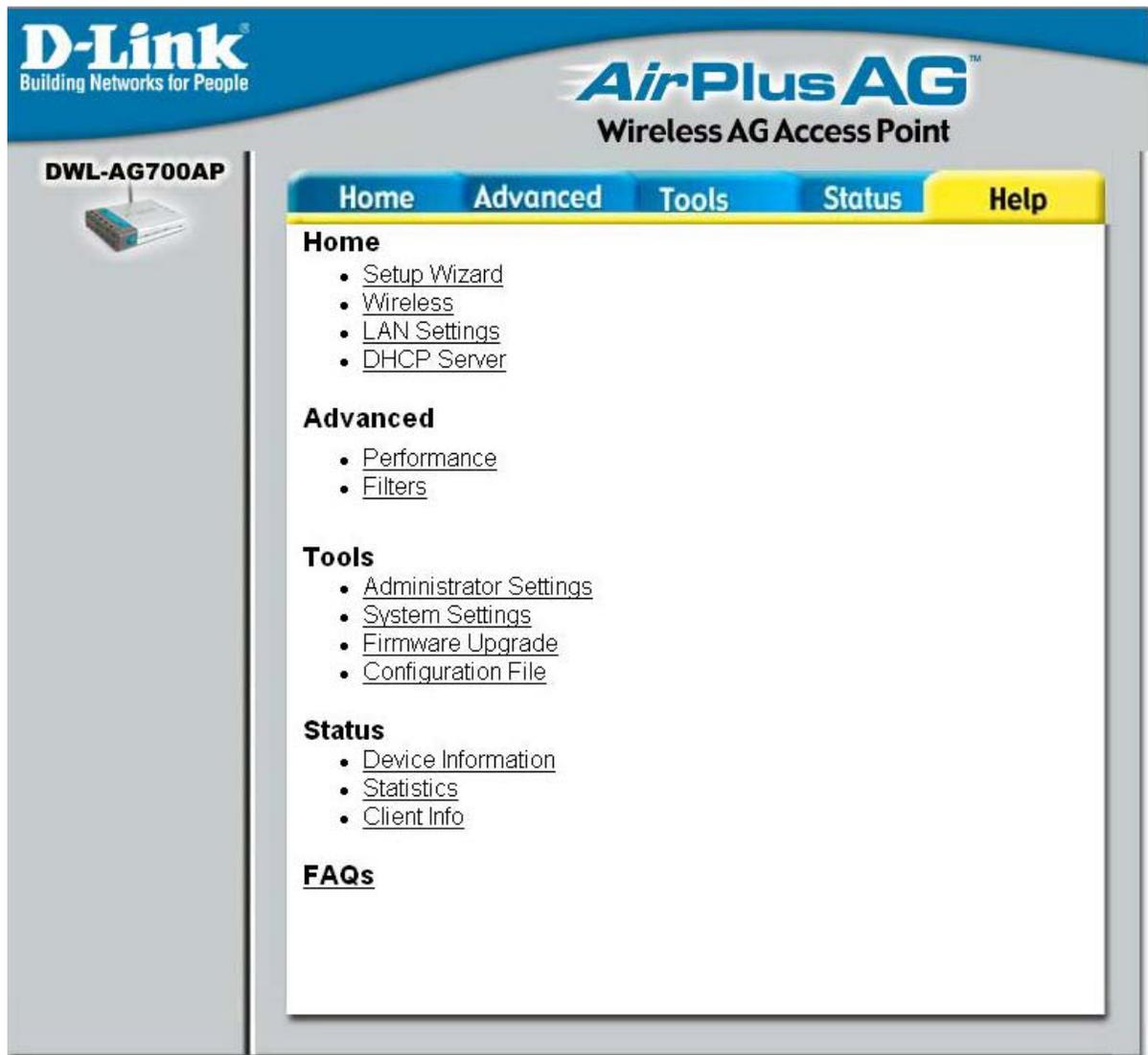
Status > Client Info



The following information is available for each client that is communicating with the DWL-AG700AP.

- MAC:** Displays the MAC address of the client.
- BSSID:** Basic Service Set Identifier is a name for a wireless network.
- Authentication:** Displays the type of authentication that is enabled.
- Signal:** Receive Signal Strength Indicator indicates the strength of the signal
- Power Saving Mode:** Displays the status of the power saving feature.

Help



Help: Click on any item in the Help screen for more information.

Networking Basics

Using the Network Setup Wizard in Windows XP

In this section you will learn how to establish a network at home or work, using **Microsoft Windows XP**.

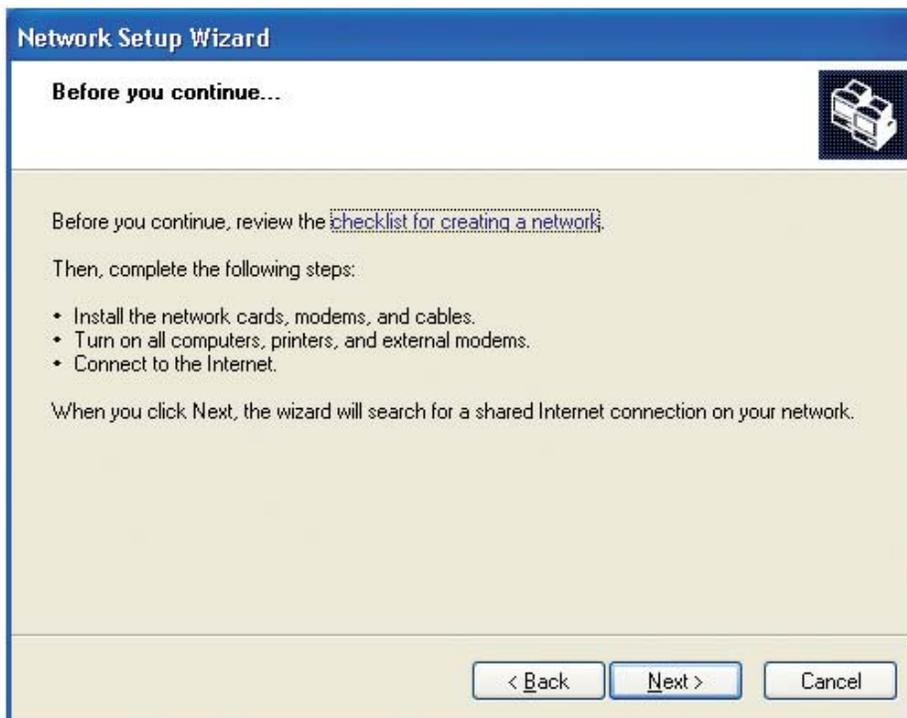
Note: Please refer to websites such as <http://www.homenethelp.com> and <http://www.microsoft.com/windows2000> for information about networking computers using Windows 2000.

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



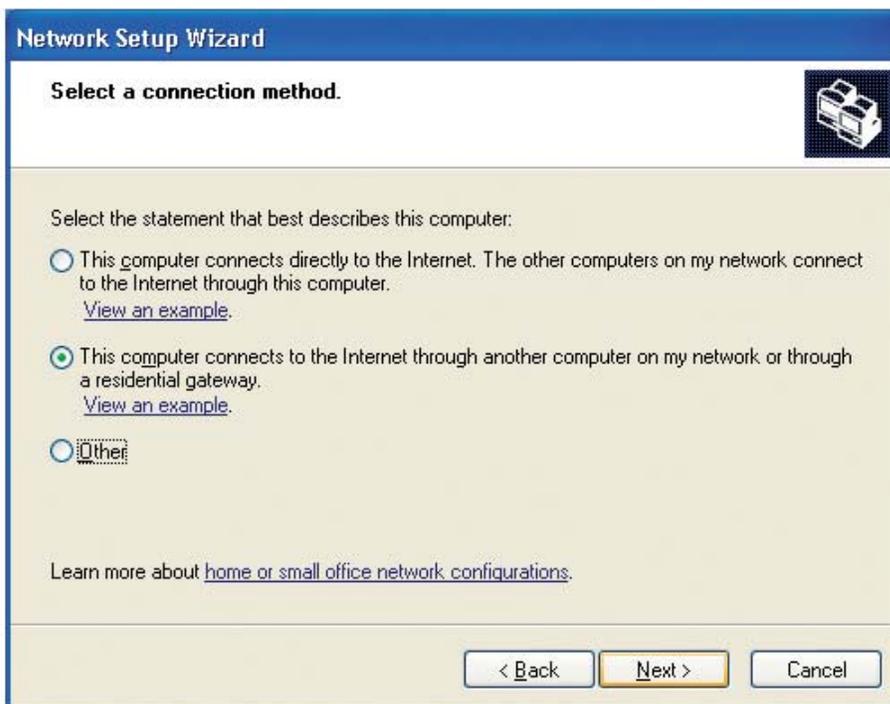
When this screen appears, click **Next**.

Please follow all the instructions in this window:



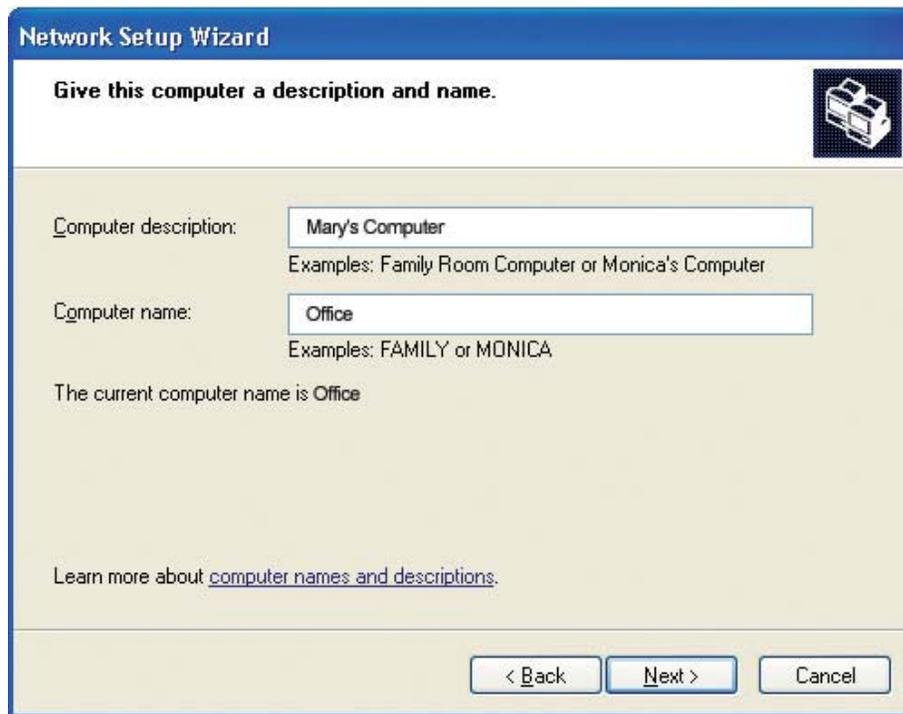
Click **Next**.

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.



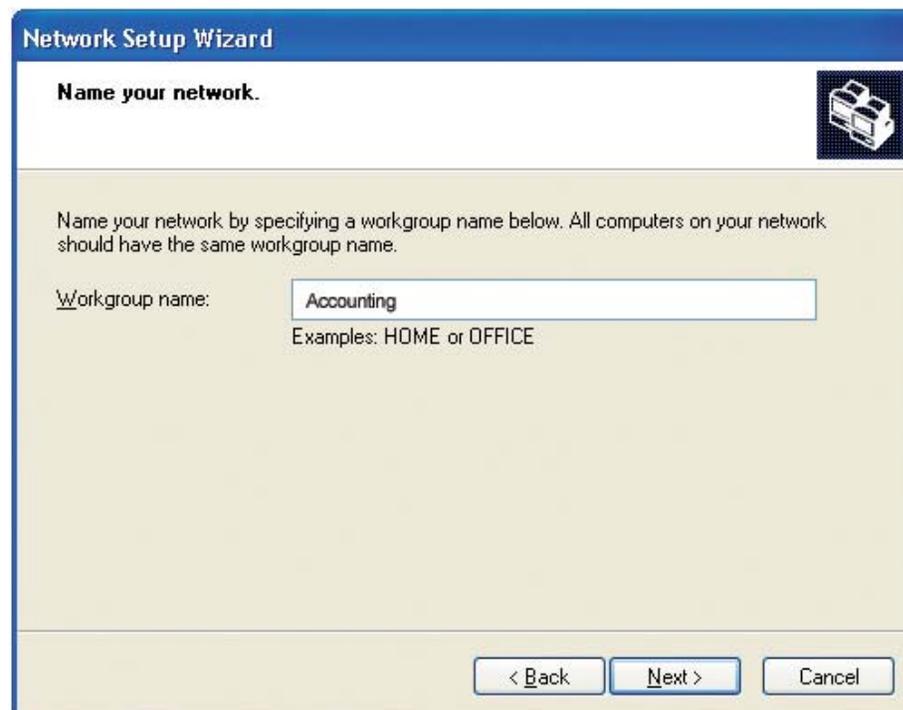
Click **Next**.

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



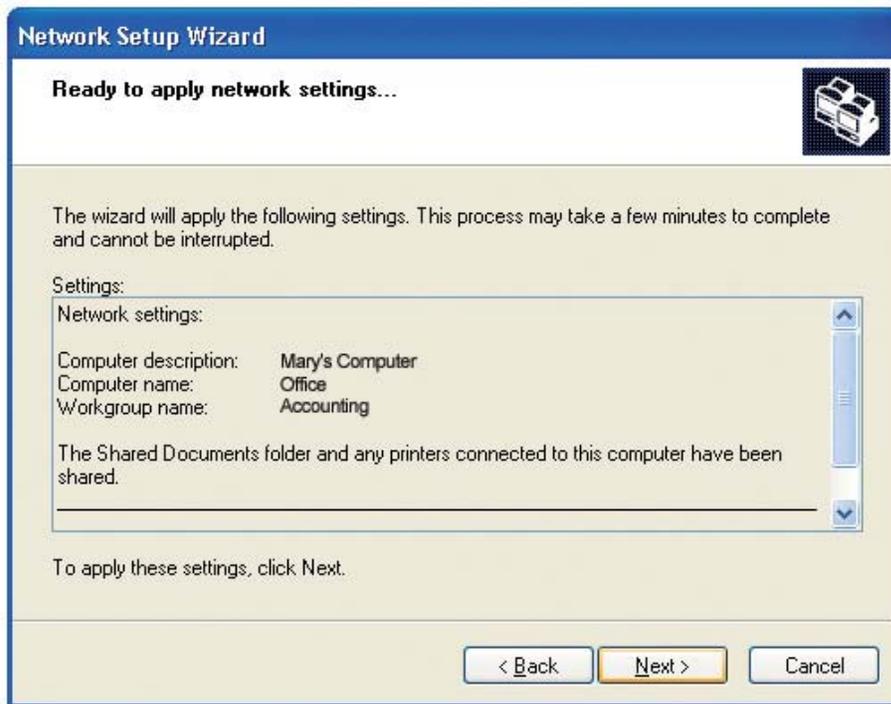
Click **Next**.

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



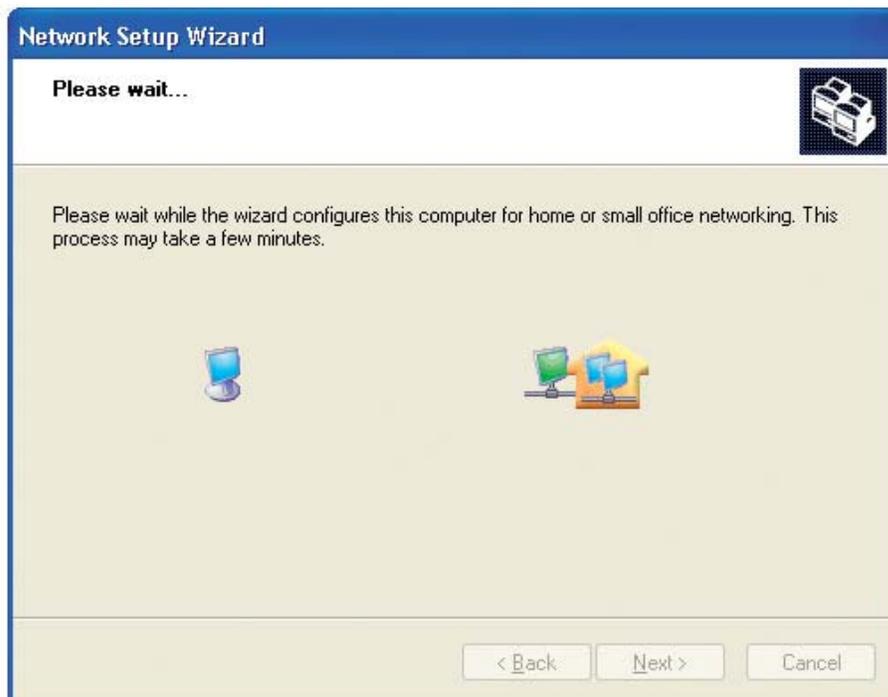
Click **Next**.

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

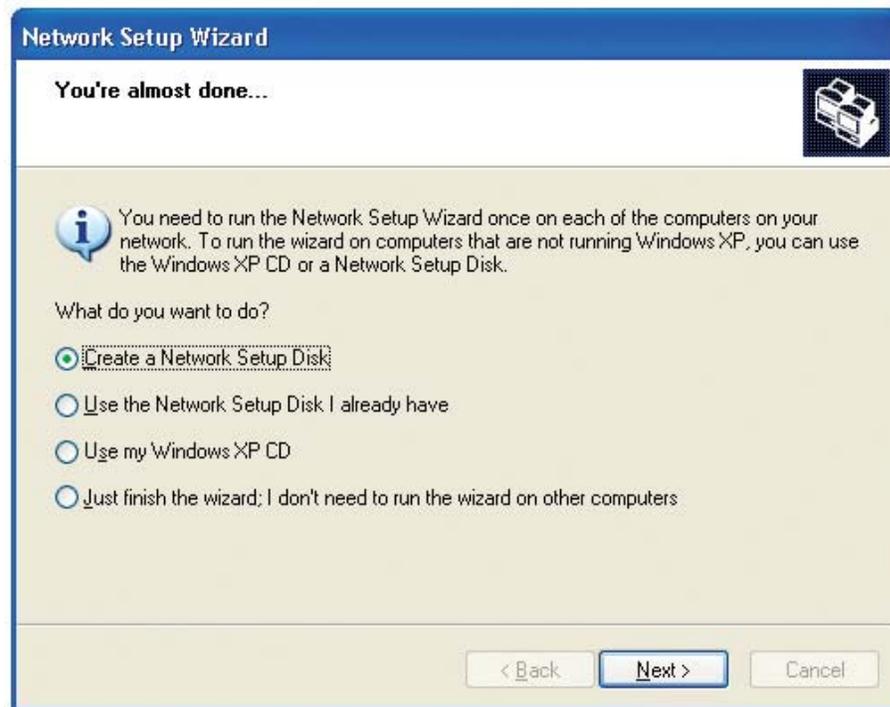


When the changes are complete, click **Next**.

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



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



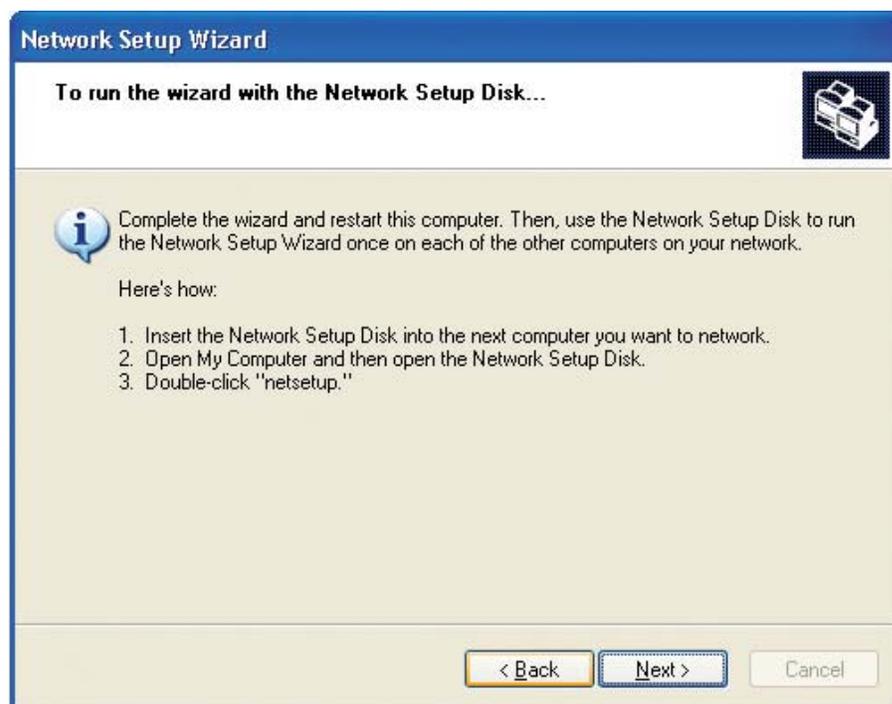
Insert a disk into the Floppy Disk Drive, in this case drive **A**.



Click **Next**.



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**.



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.

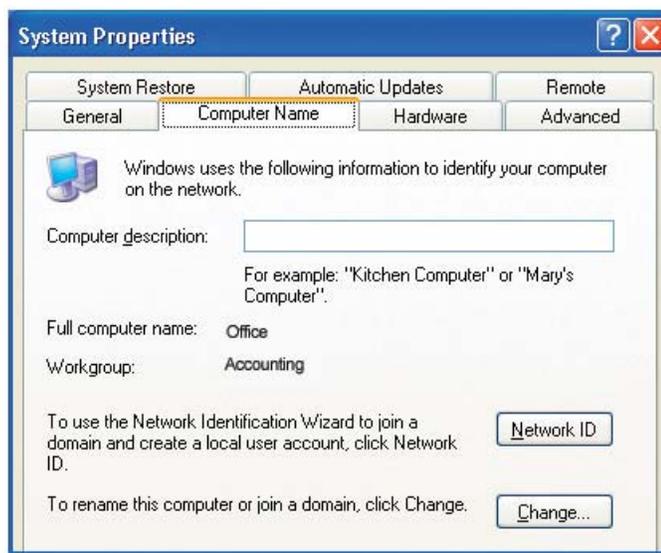
Naming Your Computer

To name your computer on **Windows XP**, please follow these directions.

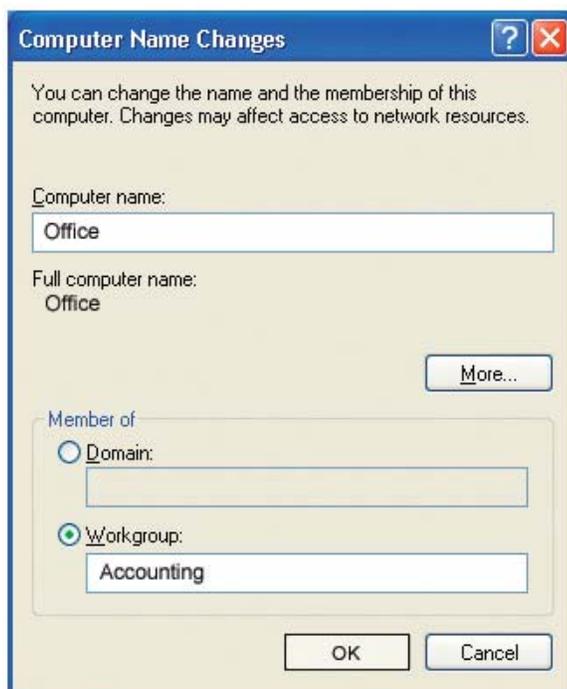
- Click **Start** (in the lower left corner of the screen).
- **Right-click** on **My Computer**.
- Select **Properties** and click.



- 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**.



- 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**.



This window will appear:

- Click the **Support** tab.
- Click **Close**.



Assigning a Static IP Address in Windows XP/2000

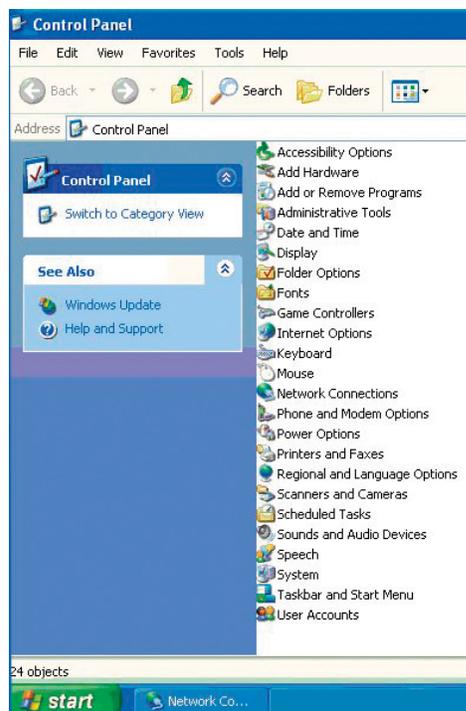
Note: DHCP-enabled routers will automatically assign IP addresses to the computers on the network, using DHCP (Dynamic Host Configuration Protocol) technology. If you are using a DHCP-capable router you will not need to assign static IP addresses.

If you are not using a DHCP capable router, or you need to assign a static IP address, please follow these instructions:

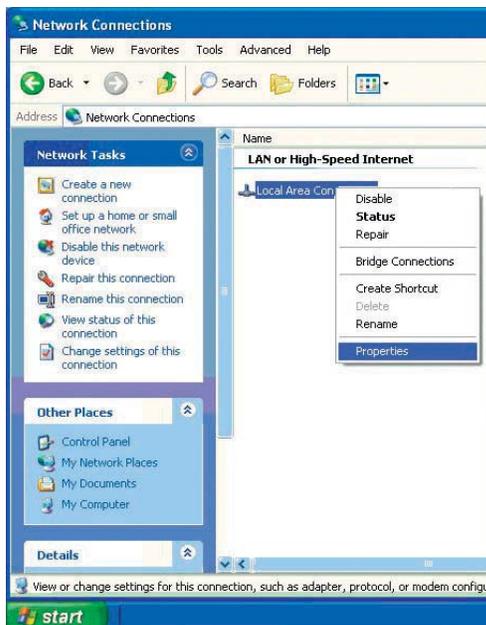
- Go to **Start**.
- Double-click on **Control Panel**.



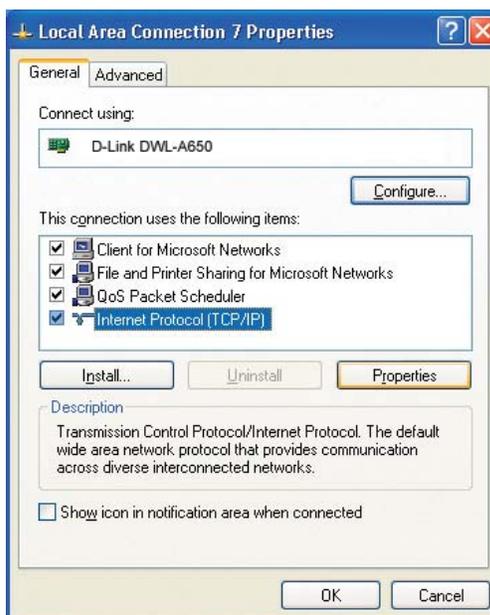
- Double-click on **Network Connections**.



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



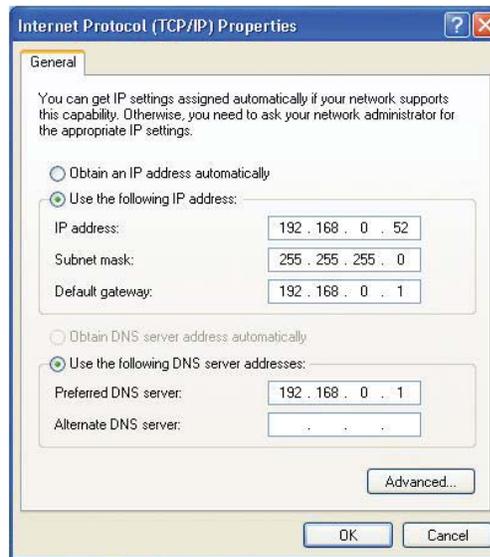
- Click on **Internet Protocol (TCP/IP)**.
- Click **Properties**.
- Input your **IP address and subnet mask**. (The IP addresses on your network must be within the same range. For example, if one computer has an IP address of 192.168.0.2, the other computers should have IP addresses that are sequential, like 192.168.0.3 and 192.168.0.4. The subnet mask must be the same for all the computers on the network.)



- Input your **DNS server addresses**. (Note: If you are entering a DNS server, you must enter the IP address of the default gateway.)

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

- Click **OK**.

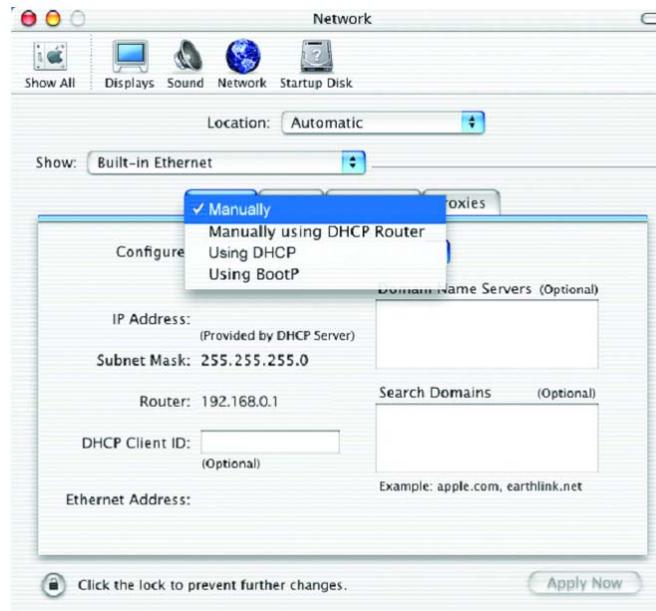


Assigning a Static IP Address in Macintosh OS X

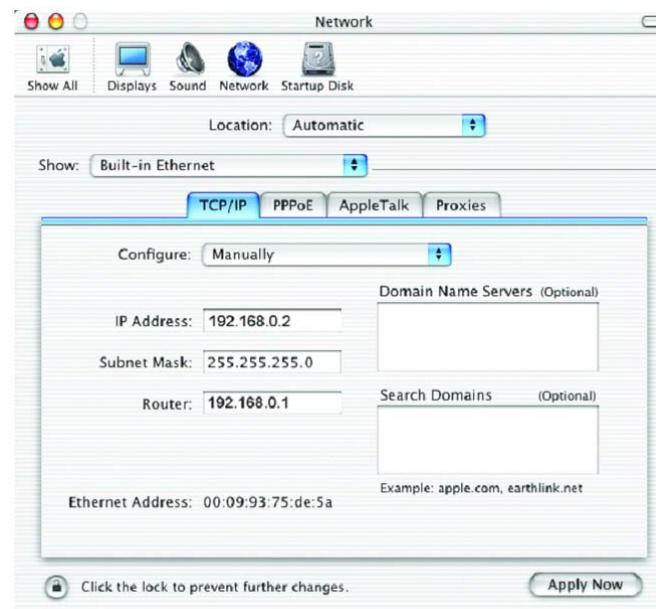
- Go to the **Apple Menu** and select **System Preferences**.
- Click on **Network**.



- Select **Built-in Ethernet** in the **Show** pull-down menu.
- Select **Manually** in the **Configure** pull-down menu.



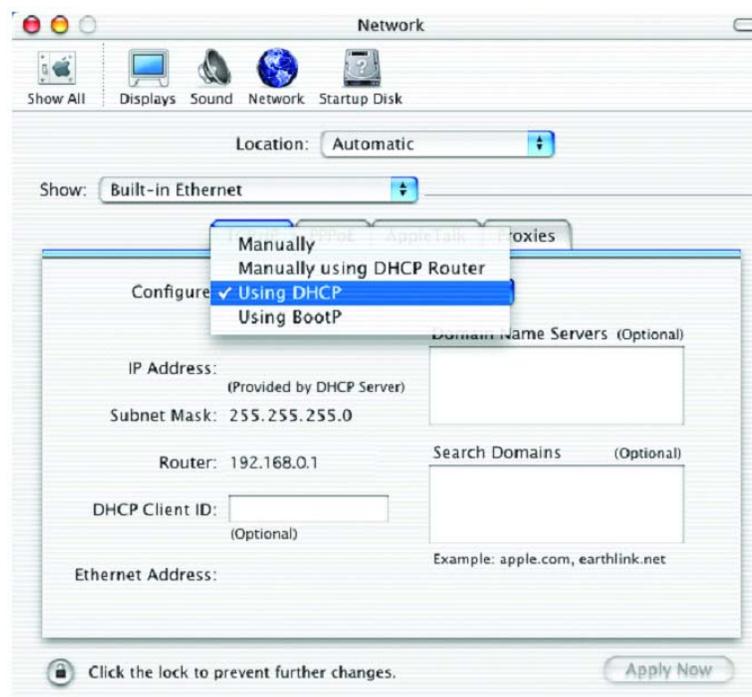
- Input the **Static IP Address**, the **Subnet Mask** and the **Router IP Address** in the appropriate fields.
- Click **Apply Now**.



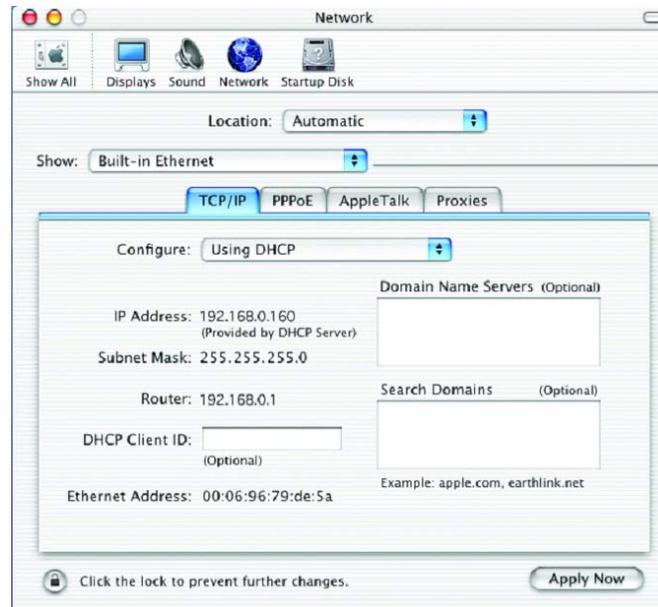
- Go to the **Apple Menu** and select **System Preferences**.
- Click on **Network**.



- Select **Built-in Ethernet** in the **Show** pull-down menu.
- Select **Using DHCP** in the **Configure** pull-down menu.



- Click **Apply Now**.
- The **IP Address**, **Subnet mask**, and the **Router's IP Address** will appear in a few seconds.



Checking the Wireless Connection by Pinging in Windows XP and 2000

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

A screenshot of a Windows command prompt window. The title bar reads "F:\WINDOWS\System32\cmd.exe". The window content shows the following text:

```
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

F:\Documents and Settings\lab4>ping 192.168.0.50

Pinging 192.168.0.50 with 32 bytes of data:

Reply from 192.168.0.50: bytes=32 time=5ms TTL=30
Reply from 192.168.0.50: bytes=32 time=64ms TTL=30
Reply from 192.168.0.50: bytes=32 time=3ms TTL=30
Reply from 192.168.0.50: bytes=32 time=17ms TTL=30

Ping statistics for 192.168.0.50:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 3ms, Maximum = 64ms, Average = 22ms

F:\Documents and Settings\lab4>_
```

Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the DWL-AG700AP Wireless Access Point. We cover various aspects of the network setup, including the network adapters. Please read the following if you are having problems.

Note: It is recommended that you use an Ethernet connection to **configure the DWL-AG700AP Wireless Access Point**.

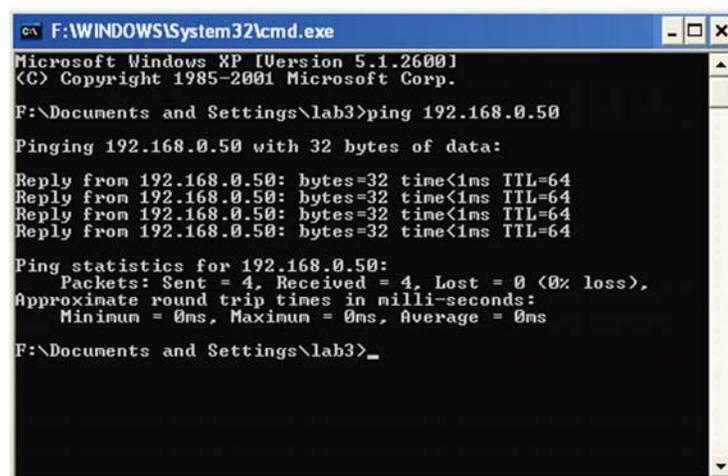
1. The computer used to configure the DWL-AG700AP cannot access the configuration menu.

- Check that the **Ethernet LED** on the DWL-AG700AP 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-AG700AP. Please see **Checking the IP Address in Windows XP** in the **Networking Basics** section of this manual.

Note: The IP address of the DWL-AG700AP 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-AG700AP is responding. Go to **Start>Run>Type Command>Type ping 192.168.0.50**. A successful ping will show four replies.

Note: If you have changed the default IP address, make sure to ping the correct IP address assigned to the DWL-AG700AP.



```
GA F:\WINDOWS\System32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

F:\Documents and Settings\lab3>ping 192.168.0.50

Pinging 192.168.0.50 with 32 bytes of data:

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

Ping statistics for 192.168.0.50:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

F:\Documents and Settings\lab3>_
```

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.



- 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-AG700AP 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**.)*

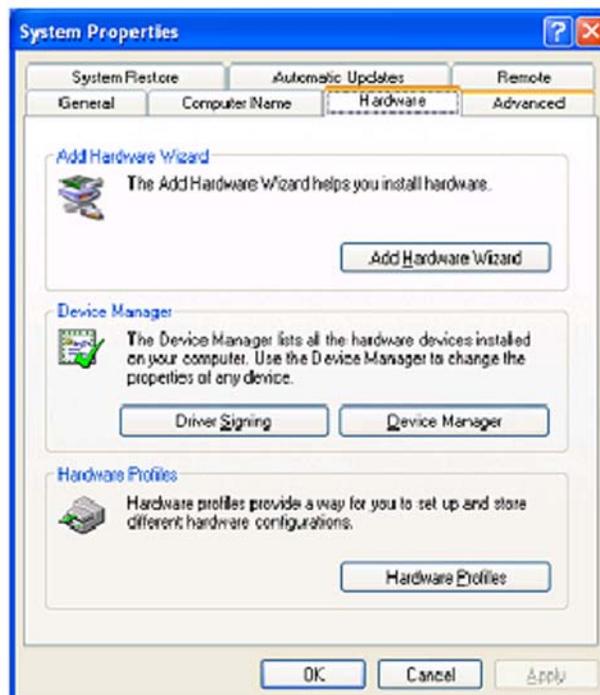
3. Check that the drivers for the network adapters are installed properly.

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.

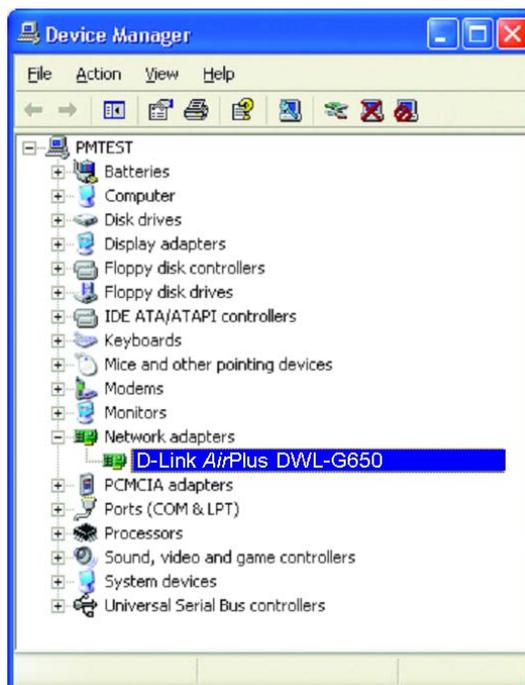
- Go to **Start > My Computer > Properties**.



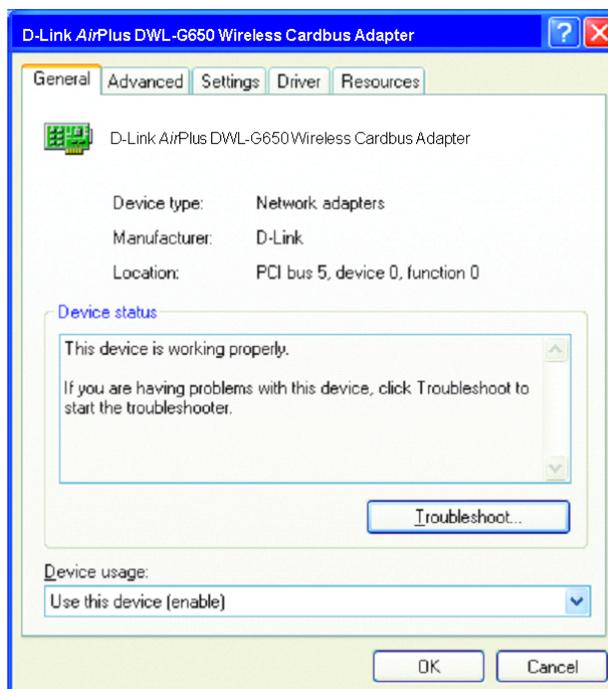
- **Select the Hardware Tab.**
- Click **Device Manager**.



- Double-click on **Network Adapters**.
- Right-click on **D-Link AirPlus Xtreme G DWL-G650 Wireless Cardbus Adapter**. (In this example we use the DWL-G650; you may be using other network adapters, but the procedure will remain the same.)
- Select **Properties** to check that the drivers are installed properly.



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



4. What variables may cause my wireless products to lose reception?

D-Link products let you access your network from virtually anywhere you want. However, the positioning of the products within your environment will affect the wireless range. Please refer to **Installation Considerations** in the **Wireless Basics** section of this manual for further information about the most advantageous placement of your D-Link wireless products.

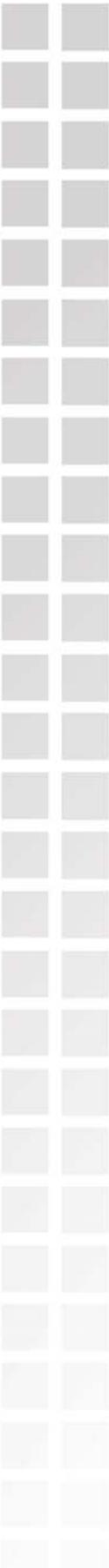
5. Why does my wireless connection keep dropping?

- Antenna Orientation- Try different antenna orientations for the DWL-AG700AP. Try to keep the antenna at least 6 inches away from the wall or other objects.
- If you are using 2.4GHz cordless phones, X-10 equipment or other home security systems, ceiling fans, and lights, your wireless connection will degrade dramatically or drop altogether. Try changing the channel on your router, access point and wireless adapter to a different channel to avoid interference.
- Keep your product away (at least 3-6 feet) from electrical devices that generate RF noise, like microwaves, monitors, electric motors, etc.

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

If you have enabled encryption on the DWL-AG700AP, you must also enable encryption on all wireless clients in order to establish a wireless connection.

- Make sure that the SSID on the router and the wireless client are exactly the same. If they are not, wireless connection will not be established.
- Move the DWL-AG700AP and the wireless client into the same room and then test the wireless connection.
- Disable all security settings.
- Turn off your DWL-AG700AP and the client. Turn the DWL-AG700AP back on again, and then turn on the client.
- Make sure that all devices are set to **Infrastructure** mode.
- Check that the LED indicators are indicating normal activity. 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.
- If you are using 2.4GHz cordless phones, X-10 equipment or other home security systems, ceiling fans, and lights, your wireless connection will degrade dramatically or drop altogether. Try changing the channel on your DWL-AG700AP, and on all the devices in your network to avoid interference.
- Keep your product away (at least 3-6 feet) from electrical devices that generate RF noise, like microwaves, monitors, electric motors, etc.



7. I forgot my encryption key.

- Reset the DWL-AG700AP to its factory default settings and restore the other devices on your network to their default settings. You may do this by pressing the Reset button on the back of the unit. You will lose the current configuration settings.

Technical Specifications

Standards

- IEEE 802.11a
- IEEE 802.11b
- IEEE 802.11g
- IEEE 802.3
- IEEE 802.3u
- IEEE 802.3x

Device Management

- Web-Based – Internet Explorer v6 or later; Netscape Navigator v6 or later; or other Java-enabled browsers.

Security

- 64-, 128-, 152-bit WEP
- WPA – Personal
- MAC Address Access Control List

Wireless Frequency Range

- 2.4GHz to 2.4835GHz
- 5.15GHz to 5.35GHz and 5.725GHz to 5.825GHz

Radio and Modulation Type

For 802.11b:

DSSS:

- DBPSK @ 1Mbps
- DQPSK @ 2Mbps
- CCK @ 5.5 and 11Mbps

For 802.11a/g:

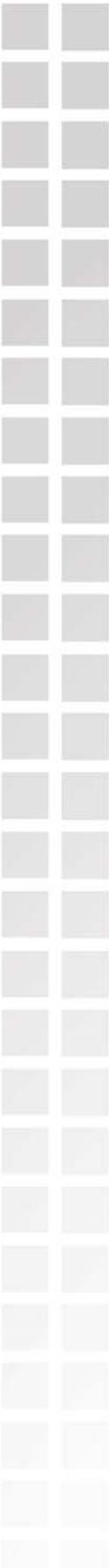
OFDM:

- BPSK @ 6 and 9Mbps
- QPSK @ 12 and 18Mbps
- 16QAM @ 24 and 36Mbps
- 64QAM @ 48, 54 and 108Mbps

DSSS:

- DBPSK @ 1Mbps
- DQPSK @ 2Mbps
- CCK @ 5.5 and 11Mbps

* Environmental Factors may Adversely Affect Wireless Range



Receiver Sensitivity

For 802.11a:

- 6Mbps: -87dBm
- 9Mbps: -86dBm
- 12Mbps: -85dBm
- 18Mbps: -83dBm
- 24Mbps: -80dBm
- 36Mbps: -76dBm
- 48Mbps: -71dBm
- 54Mbps: -71dBm

For 802.11b:

- 1Mbps: -92dBm
- 2Mbps: -89dBm
- 5.5Mbps: -88dBm
- 11Mbps: -83dBm

For 802.11g:

- 1Mbps: -95dBm
- 2Mbps: -91dBm
- 5.5Mbps: -89dBm
- 6Mbps: -87dBm
- 9Mbps: -86dBm
- 12Mbps: -85dBm
- 18Mbps: -83dBm
- 24Mbps: -80dBm
- 36Mbps: -76dBm
- 48Mbps: -71dBm
- 54Mbps: -66dBm

Transmit Output Power

For 802.11a:

- 63mW (18dBm)
- 40mW (16dBm)
- 32mW (15dBm)
- 6mW (7dBm)
- 1mW (0dBm)

For 802.11b:

- 63mW (18dBm)
- 40mW (16dBm)
- 32mW (15dBm)
- 23mW (13dBm)
- 10mW (10dBm)
- 6mW (7dBm)
- 1mW (0dBm)

For 802.11g:

- 63mW (18dBm)
- 40mW (16dBm)
- 32mW (15dBm)
- 6mW (7dBm)
- 1mW (0dBm)

Wireless Operating Range*

802.11a/g (Full Power with 2.0dBi gain diversity dipole antenna)

Indoor:

- 98ft (30m) @ 54Mbps
- 105ft (32m) @ 48Mbps
- 121ft (37m) @ 36Mbps
- 148ft (45m) @ 24Mbps
- 197ft (60m) @ 18Mbps
- 223ft (68m) @ 12Mbps
- 253ft (77m) @ 9Mbps
- 2951ft (90m) @ 6Mbps

Outdoor:

- 312ft (95m) @ 54Mbps
- 951ft (290m) @ 18Mbps
- 1,378ft (420m) @ 6Mbps

Dimensions

- L = 5.59 inches (142mm)
- W = 4.29 inches (109mm)
- H = 1.22 inches (31mm)

Weight

- 0.44 lbs (200g)

Warranty

- 1 Year

Antenna Type

- 2dBi Dualband Detachable Dipole Antenna

LEDs

- Power
- 10M
- 100M
- 802.11a
- 802.11b/g

Operating Voltage

- 5VDC +/- 10%

Temperature

- Operating: 32°F to 104°F (0°C to 40°C)
- Storing: -4°F to 149°F (-20°C to 65°C)

Humidity

- Operating: 10%~90% (non-condensing)
- Storing: 5%~95% (non-condensing)

Certifications

- FCC Part 15
- Wi-Fi

Contacting 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 web site, or by phone.

Tech Support for customers within the United States:

D-Link Technical Support over the Telephone:

(877) 453-5465

24 hours/ 7 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 7:30am to 12:00am EST

D-Link Technical Support over the Internet:

<http://support.dlink.ca>

email: support@dlink.ca

When contacting technical support, please provide the following information:

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

Warranty

Subject to the terms and conditions set forth herein, D-Link Systems, Inc. ("D-Link") provides this Limited Warranty:

- Only to the person or entity that originally purchased the product from D-Link or its authorized reseller or distributor, and
- Only for 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, or addresses with an APO or FPO.

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

- Hardware (excluding power supplies and fans): One (1) year
- Power supplies and fans: One (1) year
- Spare parts and spare kits: Ninety (90) days

The customer's sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link's option, to repair or replace the defective Hardware during the Warranty Period at no charge to the original owner or to refund the actual purchase price paid. Any 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, at its option, 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 or ninety (90) days, whichever is longer, and is subject to the same limitations and exclusions. If a material defect is incapable of correction, or if D-Link determines that it is not practical to repair or replace the defective Hardware, the actual 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 ("Software 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 Software Warranty Period, the magnetic media on which D-Link delivers the Software will be free of physical defects. The customer's sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link's option, 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 the portion of the actual purchase price paid that is attributable to the Software. Except as otherwise agreed by D-Link in writing, the replacement Software is provided only to the original licensee, and is subject to the terms and conditions of the license granted by D-Link for the Software. Replacement Software will be warranted for the remainder of the original Warranty Period and is subject to the same limitations and exclusions. 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 portions 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.

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, along with proof of purchase of the product (such as a copy of the dated purchase invoice for the product) if the product is not registered.
- The customer must obtain a Case ID Number from D-Link Technical Support at 1-877-453-5465, who will attempt to assist the customer in resolving any suspected defects with the product. If the product is considered defective, the customer must obtain a Return Material Authorization ("RMA") number by completing the RMA form and entering the assigned Case ID Number at <https://rma.dlink.com/>.
- 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 and shipped to **D-Link Systems, Inc., 17595 Mt. Herrmann, Fountain Valley, CA 92708**. 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. Return shipping charges shall be prepaid by D-Link if you use an address in the United States, otherwise we will ship the product to you freight collect. Expedited shipping is available upon request and provided shipping charges are prepaid by the customer.

D-Link may reject or return any product that is not packaged and shipped in strict compliance with the foregoing requirements, or for which an RMA number is not visible from the outside of the package. The product owner agrees to pay D-Link's reasonable

handling and return shipping charges for any product that is not packaged and shipped in accordance with the foregoing requirements, or that is determined by D-Link not to be defective or non-conforming.

What Is Not Covered: The Limited Warranty provided herein by D-Link does not cover: Products that, 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; and 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. While necessary maintenance or repairs on your Product can be performed by any company, we recommend that you use only an Authorized D-Link Service Office. Improper or incorrectly performed maintenance or repair voids this Limited 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 THE DURATION OF THE APPLICABLE WARRANTY PERIOD SET FORTH ABOVE. EXCEPT AS EXPRESSLY COVERED UNDER THE LIMITED WARRANTY PROVIDED HEREIN, THE ENTIRE RISK AS TO THE QUALITY, SELECTION AND PERFORMANCE OF THE PRODUCT IS WITH THE PURCHASER OF THE PRODUCT.

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

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 you may also have other rights which vary from state to state.

Trademarks: D-Link is a registered trademark of D-Link Systems, Inc. Other trademarks or registered trademarks are the property of their respective owners.

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 and any amendments thereto. Contents are subject to change without prior notice. Copyright 2005 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.

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.

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.

For detailed warranty information applicable to products purchased outside the United States, please contact the corresponding local D-Link office.

Registration



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

021605