

802.11g Wireless Access Point

User's Guide

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Package Contents



- **IEEE 802.11g** 2.4GHz Wireless LAN Access Point
- Power Adapter – 5VDC, 2A
- Quick Installation Guide on CD

Note: Using a power supply with a different voltage rating than the one included with the 802.11g Wireless Access Point will cause damage and void the warranty for this product. If any of the above items is missing, please contact your reseller.

System Requirements For Configuration

- Computer with Windows, Macintosh, or Linux-based operating system with an installed Ethernet adapter
- Internet Explorer or Netscape Navigator version 6.0 or above, with JavaScript enabled
- At least 128 MB of memory and a 500 MHz processor

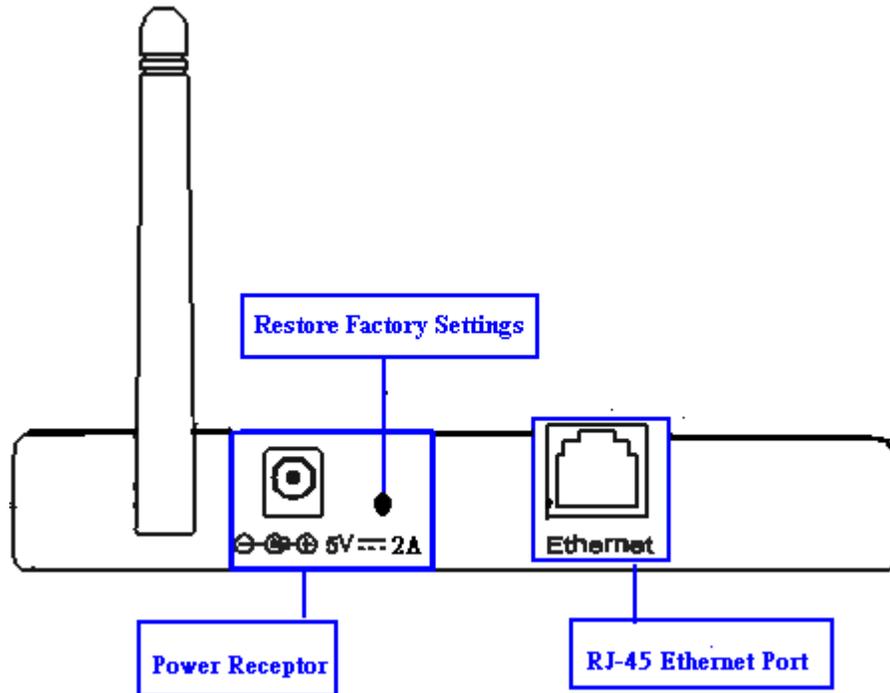
Introduction

The *802.11g Wireless Access Point* provides the most expanded user bandwidth available in an AP. Network members can connect to this AP using any of its channels to transfer data at speeds never achievable before in a wireless device. The 802.11g Wireless Access Point operates seamlessly and simultaneously in the 2.4GHz frequency spectrums supporting the 802.11b and the newer, faster 802.11g wireless standards. For offices, schools or public hotspots that already use 802.11b devices, the 802.11g Wireless Access Point is a great way to expand an existing network and enable even more users to communicate with one another, access data and the Internet. Now, you can have an AP that will compliment your existing network and protect the investment you made when you provided the convenience of wireless networking.

The 802.11g Wireless Access Point offers transfer rates up to 54Mbps in the 2.4GHz band, large data packets travel from the router to a remote desktop or roaming laptop PC at up to five times the speed of previous wireless devices. Everyone can work faster and more efficiently or watch a streaming video smoothly. Network administrators can partition the usage of the 802.11g Wireless Access Point by segmenting the users on the wireless network by frequency band. Users who require special networking privileges — access to sensitive information, specific departments or videoconferencing — may use just the 802.11b and 802.11g channels. This type of user segmentation optimizes the AP's performance and delivers the best network experience to each set of users.

The 802.11g Wireless Access Point is ideal for network administrators who require additional management, firewall, and other network security features. All of the AP's settings are easily accessible in the operating system independent, Web-based software user interface that also features a step-by-step Setup Wizard to get your router up and running in just a matter of minutes. The 802.11g Wireless Access Point incorporates the WPA* (Wi-Fi Protected Access) which dynamically encrypts data as it's being sent.

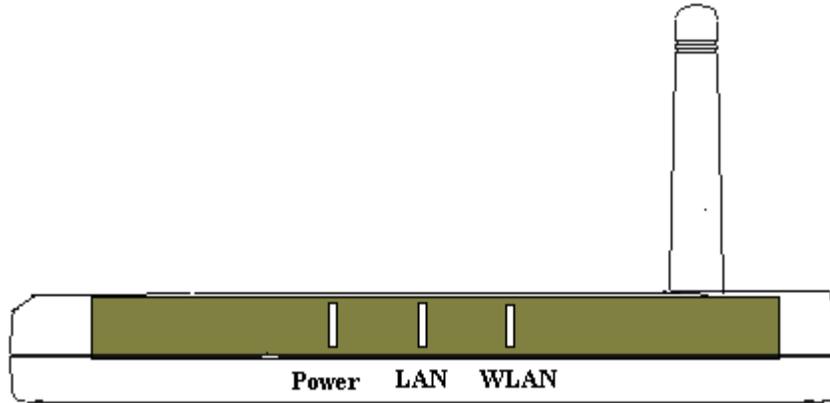
Connections



- **Straight-Through** cable is required when connecting to a router or switch
- **Cross-Over** cable is required when connecting directly to an Ethernet adapter on a computer for configuration

Features & Benefits

- **Up to 54 Mbps** - Means you can transfer large files up to 5 times more quickly than was previously possible without signal interference
- **802.11b and 802.11g Compliant** - Means you can mix devices from different standards without sacrificing connectivity
- **Better Security with WPA** - Other 802.11g devices can connect securely using WPA (Wi-Fi Protected Access)



LEDs

LED stands for **L**ight-**E**mitting **D**iode. The **802.11g Wireless Access Point** has 3 **Green** LEDs as shown below:

LED	LED Activity
Power	A steady light indicates a connection to a power source
LAN (10/100)	A steady light indicates a connection to the Ethernet port; a blinking light indicates activity
WLAN (802.11b or 802.11g)	A blinking light indicates activity in the respective wireless mode: 802.11b or 802.11g

Wireless Basics

The 802.11g Wireless Access Point is based on industry standards to provide easy-to use and compatible high-speed wireless connectivity within your home, business or public access wireless networks. Strictly adhering to the IEEE standard, the 802.11g Wireless Access Point will allow you to securely access the data you want, when and where you want it. You will be able to enjoy the freedom that wireless networking delivers.

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

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

Under many circumstances, it may be desirable for mobile network devices to link to a conventional Ethernet LAN in order to use servers, printers or an Internet connection supplied through the wired LAN. A Wireless 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 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.

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.

-
- The 802.11g Wireless Access Point is compatible with the IEEE802.11g wireless products: 802.11g Wireless Cardbus Adapters used with laptop computers and 802.11g Wireless PCI cards used with desktop computers

Standards-Based Technology

The 802.11g Wireless Access Point utilizes the **802.11b** and **802.11g** standards.

The IEEE **802.11g** standard is an extension of the **802.11b** standard. It increases the data rate up to 54 Mbps within the 2.4GHz band. 802.11g utilize **OFDM** technology.

This means that in most environments, within the specified range of this device, you will be able to transfer large files quickly or even watch a movie in MPEG format over your network without noticeable delays. This technology works by transmitting high-speed digital data over a radio wave utilizing OFDM (**O**rtogonal **F**requency **D**ivision **M**ultiplexing) technology. OFDM works by splitting the radio signal into multiple smaller sub-signals that are then transmitted simultaneously at different frequencies to the receiver. OFDM reduces the amount of crosstalk (interference) in signal transmissions.

The 802.11g Wireless Access Point offers the most advanced network security features available today, including: *WPA*.

In addition to its compatibility with 802.11g devices, the 802.11g Wireless Access Point is compatible with 802.11b devices. This means that if you have an existing 802.11b network, or a network with a mixture of 802.11g and 802.11b, the devices in that network will be compatible with the 802.11g Wireless Access Point.

Installation Considerations

Desktop and laptop computers with wireless network adapters installed can access the 802.11g Wireless Access Point 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 802.11g Wireless Access Point and other network devices to a minimum - each wall or ceiling can reduce your wireless product's range from 3-90 feet (1-30 meters.) Position your devices so that the number of walls or ceilings is minimized.

2

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

3

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

4

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

Getting Started

- A.** First, connect the power adapter to the **receptor** at the back panel of the 802.11g Wireless Access Point and then plug the other end of the power adapter to a wall outlet or power strip. The Power LED will turn **ON** to indicate proper operation.
- B.** Connect your 802.11g Wireless Access Point LAN port with your straight-through Ethernet cable into a switch/router. **Link** LED for the LAN Port will illuminate to indicate a proper connection.
- C.** Desktop or laptop computers with 802.11b or 802.11g wireless adapters can connect to the 802.11g Wireless Access Point.

Right out of the box, with its default settings, the 802.11g Wireless Access Point will automatically connect with other wireless products

IP ADDRESS

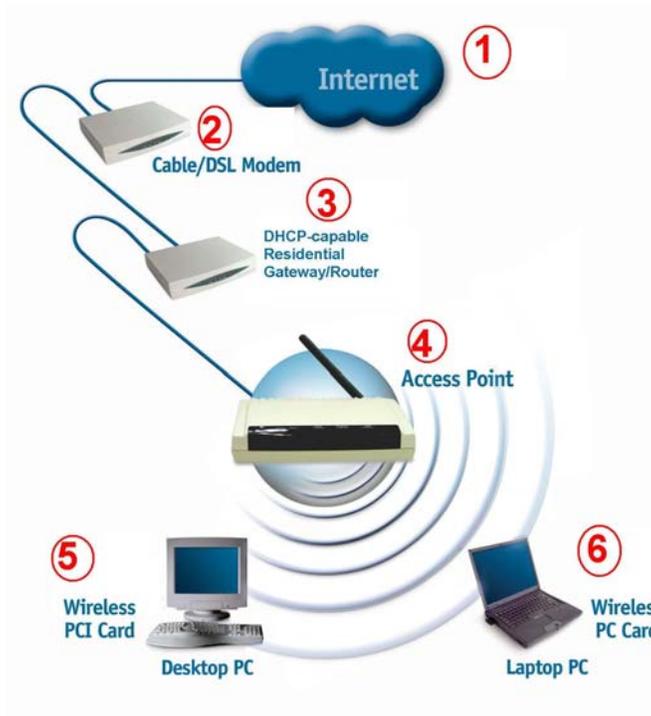
Note: If you are using a DHCP-capable router in your network setup you will not need to assign a static IP Address.

If you need to assign 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 10.0.0.2 with a Subnet Mask of 255.0.0.0, then the second computer can be assigned an IP Address of 10.0.0.3 with a Subnet Mask of 255.0.0.0, 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.*

An **Infrastructure** wireless network contains an Access Point or Router. The Infrastructure Network example, shown here, contains the following network devices:



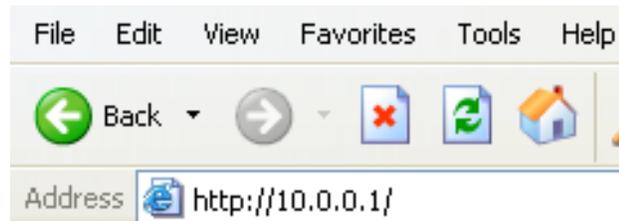
For a typical wireless setup (as shown above), please do the following:

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 an Ethernet broadband router.
4. Connect the router to the 802.11g Wireless Access Point.
5. If you are connecting a desktop computer in your network, you can install any 11g compliant wireless PCI adapter into an available PCI slot, or install a WLAN 11g CardBus card into a Notebook PC.

Using the Web Configuration Utility

The easiest and quickest way to connect to a wireless network using your 802.11g Wireless Access Point is to use the Configuration Utility. Open your web-browser and type in the IP Address of the 802.11g Wireless Access Point. The 802.11g Wireless Access Point default IP Address is shown below:

- Open the web browser
- Type in the **IP Address** of the Access Point



Note: if you have changed the default IP Address assigned to the 802.11g Wireless Access Point, make sure to enter the correct IP Address.

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



Once entered, the **Current Status** screen will appear.

There are three other options available in this screen: **Setup Wizard**, **Advanced Setup**, and **Statistics**.

Current Status

● Current Status ● Setup Wizard ● Advanced Setup ● Statistics

Current Status *Wireless LAN*

<u>Device IP Information</u>		<u>WLAN 802.11g Status</u>	
MAC Address	▶ 00:05:5d:99:b5:b8	SSID	▶ WLAN
Get IP From	▶ Manual	Channel	▶ 6
IP address	▶ 10.0.0.1	Rate	▶ Auto
Subnet Mask	▶ 255.0.0.0	Security Level	▶ Open System / WEP Disabled
Default Gateway	▶ 10.1.1.254		

Access Point

The left-hand side of the Current Status screen provides basic information about your wireless access point, including the MAC Address, IP Address, Subnet Mask and Default Gateway.

On the right-hand side, you'll find the SSID (Service Set Identifier), the Channel number, Rate, and Security Level. Please note this information, since you'll need it when you use the Setup Wizard.

All these settings, with the exception of the MAC Address, may be changed or modified using the Advanced Setup screen.

(If the Security Level on your WAP is enabled, all devices on the network must also be at the same level of security, using the identical security system and encryption codes. For initial setup, it is recommended that security be disabled.)

Setup Wizard

Using the built-in Setup Wizard is the easiest and quickest way to connect to a wireless network. To take advantage of this convenient technology, simply click **Setup Wizard** at the top of the Current Status screen. The following screen will appear.

● [Current Status](#) ● [Setup Wizard](#) ● [Advanced Setup](#) ● [Statistics](#)



Setup Wizard

Setup Wireless Networks

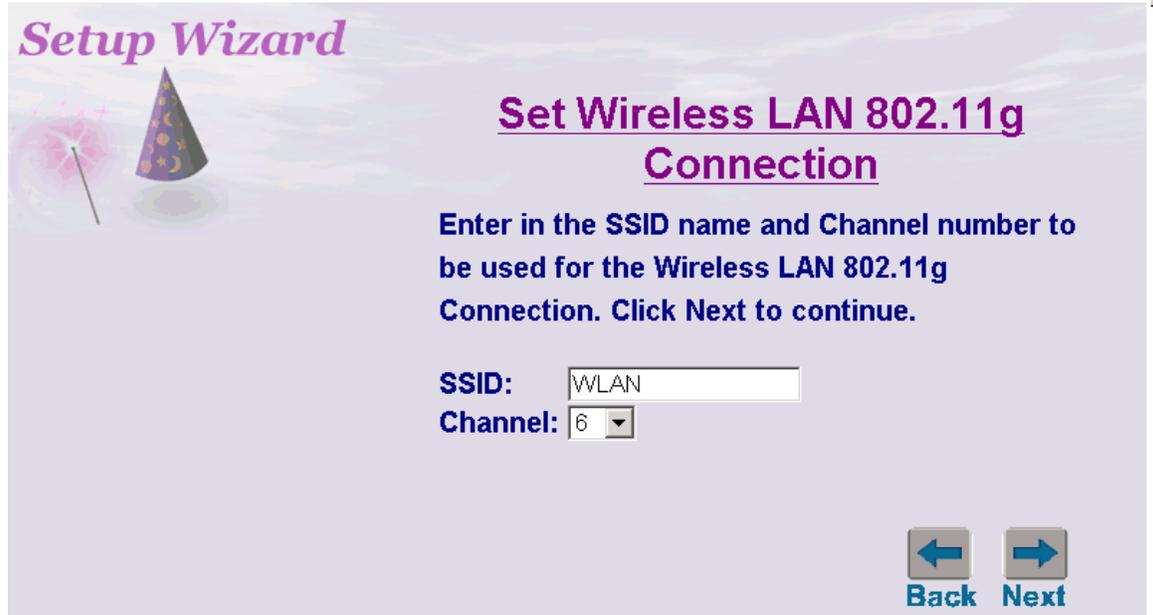
Use the Setup Wizard to quickly configure settings for both wireless environments. Click **Next** to begin setup.

1. Set the SSID and Channel (WLAN 802.11g)
2. Set Encryption (WLAN 802.11g)

 **Next**

Click **Next** to continue.

● [Current Status](#) ● [Setup Wizard](#) ● [Advanced Setup](#) ● [Statistics](#)



Setup Wizard

Set Wireless LAN 802.11g Connection

Enter in the SSID name and Channel number to be used for the Wireless LAN 802.11g Connection. Click **Next** to continue.

SSID:

Channel:

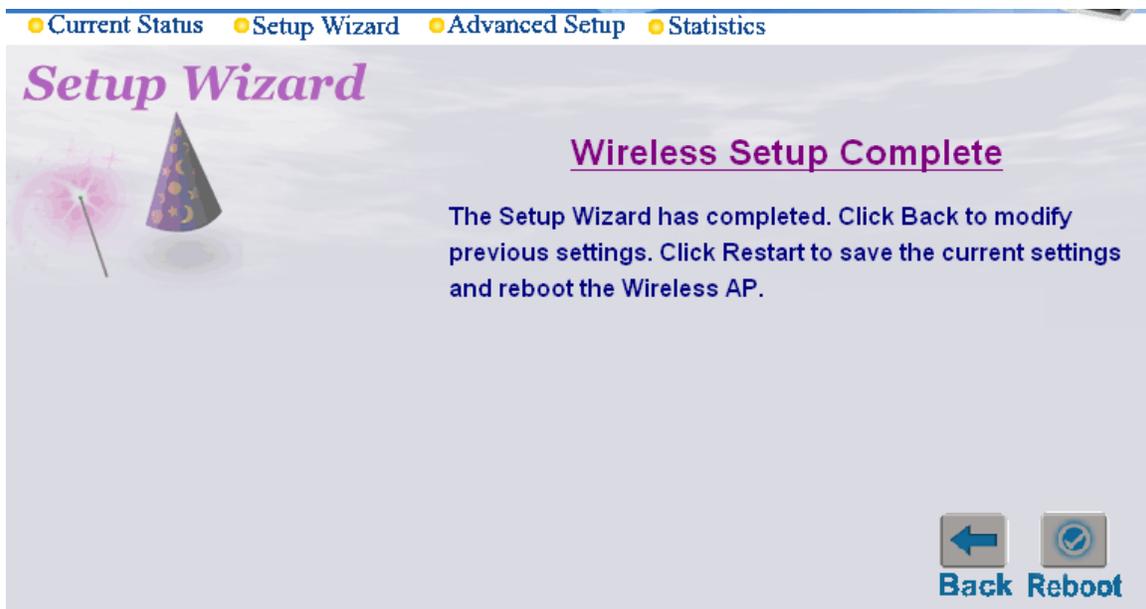
 
Back **Next**

Enter the SSID (Service Set Identifier) as displayed on the Current Status screen. You may either accept the default Channel number, or enter a new Channel number. Click **Next**.



This screen displays the present level of security on your Access Point. To use encryption, click **Enabled**, choose the **Key Size**, and enter the encryption **Key Value**. Click **Next**.

(If the Security Level on your WAP is enabled, all devices on the network must also be at the same level of security, using the identical security system and encryption codes. For initial setup, it is recommended that security be disabled.)



Just that easily, your setup is completed. Click **Reboot** to save your current settings and restart your 802.11g Wireless Access Point.

After rebooting, the sign-in window will reappear. Simply type in *admin* (or a new user name and password if you have changed them).

Advanced Setup

Configuration

To change the configuration of your Access Point, click on **Advanced Setup** at the top of the Current Settings screen. The following screen will appear.

● Current Status ● Setup Wizard ● **Advanced Setup** ● Statistics

Advanced Setup

- Access Point
 - Configuration
 - IP Address**
 - Device Information
 - WLAN Parameter Settings
 - WLAN Partition
 - Access Control Settings
 - Security Settings
 - Management
 - Maintenance

Configure Device IP address	
MAC Address	00:05:5d:99:b5:f7
Get IP From	Manual ▾
IP address	10.0.0.1
Subnet Mask	255.0.0.0
Default Gateway	10.1.1.254
<input type="button" value="Apply"/>	

This screen displays the default settings of the 802.11g Wireless Access Point and allows you to change settings and values.

The **MAC** (Media Access Control) **Address** is a unique identification number assigned by the factory and cannot be modified.

Get IP From: Choose **Manual** or **Auto**. If you select **Manual** you will manually input the IP Address. If you select **Auto** the DHCP server on your network will automatically assign an IP Address.

IP Address: The default IP Address is 10.0.0.1.

Subnet Mask: The **Subnet Mask** is 255.0.0.0

Default Gateway: Input the IP Address of the Default Gateway (the router in the network).

Click **Apply** if you have made any changes.

Note: In the Configuration screens that follow, you will be able to configure settings for 802.11g devices in your network. Settings that you input for 802.11g devices will also apply to 802.11b devices in your network.

For more detailed information, click on **Configuration** to bring up the following screen with an expanded menu.

Click **Device Information**.

Device Information

● Current Status ● Setup Wizard ● Advanced Setup ● Statistics

Advanced Setup

- Access Point
 - Configuration
 - IP Address
 - Device Information
 - WLAN Parameter Settings
 - WLAN Partition
 - Access Control Settings
 - Security Settings
 - Management
 - Maintenance

Device Information	
Device Type	AP39
MAC Address	00:05:5d:9a:14:11
Software Version	v1.00NB
System Name	<input type="text" value="WLAN Access Point"/>
System Contact	<input type="text" value="WLAN Technical Support."/>

Apply

This screen allows you to modify for the AP System Name and System Contact information. Just type in your new information in the whiteout fields, and click on **Apply** to save the information.

Click **WLAN Parameter Settings**.

WLAN Parameter Settings

● Current Status ● Setup Wizard ● Advanced Setup ● Statistics

Advanced Setup

Access Point

- Configuration
 - IP Address
 - Device Information
 - WLAN Parameter Settings
 - WLAN Partition
 - Access Control Settings
 - Security Settings
- Management
- Maintenance

WLAN Parameter Management	
Wireless Band	IEEE802.11g
SSID	
SSID Broadcast	Enabled
Frequency	2.437 GHz
Channel	6
Data Rate	Auto
Beacon Interval (20 - 1000)	100
DTIM (1 - 255)	1
Fragment Length (256 - 2346)	2346
RTS Length (256 - 2346)	2346
Transmit Power	full
802.11g Only	Disabled
Radio On/Off	On

Apply

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

SSID Broadcast: *Enable* will allow all WLAN clients to observe its Wireless LAN network presence. *Disable* will make the Access Point invisible to any client scanning.

Frequency: The frequency range will be displayed.

Channel: Channel 6 is the default channel. You may select a different channel, but remember that all devices on the network must be set to the same channel to communicate on the network. *(Current wireless network adapters will automatically scan for the channel to establish connection with the access point.)*

Data Rate: Select the transmission rate for the network. **Auto** is the default setting.

Beacon Interval: Beacons are packets sent by an Access Point to synchronize a wireless network. Specify a Beacon interval value (20-1000.) Default (100) is recommended.

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

Fragment Length: *This value should remain at its default setting of 2346.* If you experience a high packet-error rate, you may slightly decrease your Fragment Length within the value range of 256 to 2346. Setting the Fragment Length too low may result in poor performance.

RTS Length: *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.

Transmit Power: Adjust the transmission power here. This tool can be helpful for security purposes if you wish to limit the transmission range.

Click on **Apply** to have the Access Point save the new options once you have completed the modification.

WLAN Partition

● Current Status ● Setup Wizard ● **Advanced Setup** ● Statistics

Advanced Setup

Access Point

- Configuration
 - IP Address
 - Device Information
 - WLAN Parameter Settings
 - WLAN Partition**
 - Access Control Settings
 - Security Settings
- Management
- Maintenance

WLAN Partition	
Wireless Band	IEEE802.11g
Internal Station Connection	<input checked="" type="checkbox"/> Enabled
Ethernet to WLAN Access	<input checked="" type="checkbox"/> Enabled
<input type="button" value="Apply"/>	

The **WLAN Partition** window allows the user to enable or disable Internal Station Connection or Ethernet to WLAN Access. The default setting is Enabled. To disable, simply un-click the check-box next to your selection and click **Apply**.

Access Control Settings

● Current Status ● Setup Wizard ● Advanced Setup ● Statistics

Advanced Setup

Access Point

- Configuration
 - IP Address
 - Device Information
 - WLAN Parameter Se
 - WLAN Partition
 - Access Control Setting
 - Security Settings
- Management
 - Administration
 - Misc
- Maintenance

MAC Address Control List	
Wireless LAN	IEEE802.11g
Control	Accept
Input MAC Address	Disabled
	Accept
	Reject
<input type="button" value="Save"/>	

Current Access Control List		
MAC Address	Delete	MAC Address
	Delete	

Control:

Disabled - Disable the Access Control feature

Accept - Accept the MAC Addresses in the list into the network

Reject - Reject the MAC Addresses in the list from participating in the network

Input MAC Address: Input the MAC Addresses into the list. Click "**Save**" to add the address into the Current Access Control List.

MAC Address (Media Access Control Address)

A unique hardware address that identifies a device on a network. It is assigned at the factory and cannot be changed. Usually you will find this address on a sticker on the device or on the packaging. *(Please use the following format when entering the MAC address- xx:xx:xx:xx:xx:xx)*

Current Access Control List: An administrator can view or delete any of the added item from the table shown here.

Administration

● Current Status ● Setup Wizard ● Advanced Setup ● Statistics

Advanced Setup

- Access Point
 - Configuration
 - Management
 - Administration**
 - Misc
 - Maintenance

Administration Management	
User Name	admin
Old Password	
New Password	
Confirm New Password	
Save	

User Name: The default User Name is admin.

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

New Password: Enter the new password.

Confirm New Password: Re-enter the new password.

To save changes, click **Save**.

Misc

● Current Status ● Setup Wizard ● Advanced Setup ● Statistics

Advanced Setup

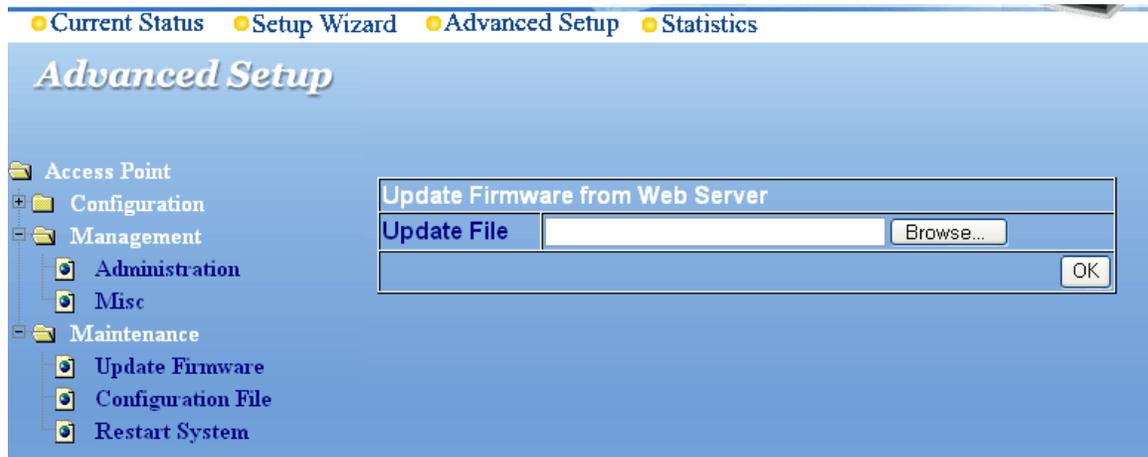
- Access Point
 - Configuration
 - Management
 - Administration**
 - Misc
 - Maintenance

Telnet Settings	
Telnet Service	<input checked="" type="checkbox"/> Enabled
Timeout	3 Mins ▾
Apply	

Telnet Service: When enabled, Administrator can access the device configuration via Telnet operation.

Timeout: Under the Telnet session, the device will log off the administrator if he is inactive for more than the timeout period specified here.

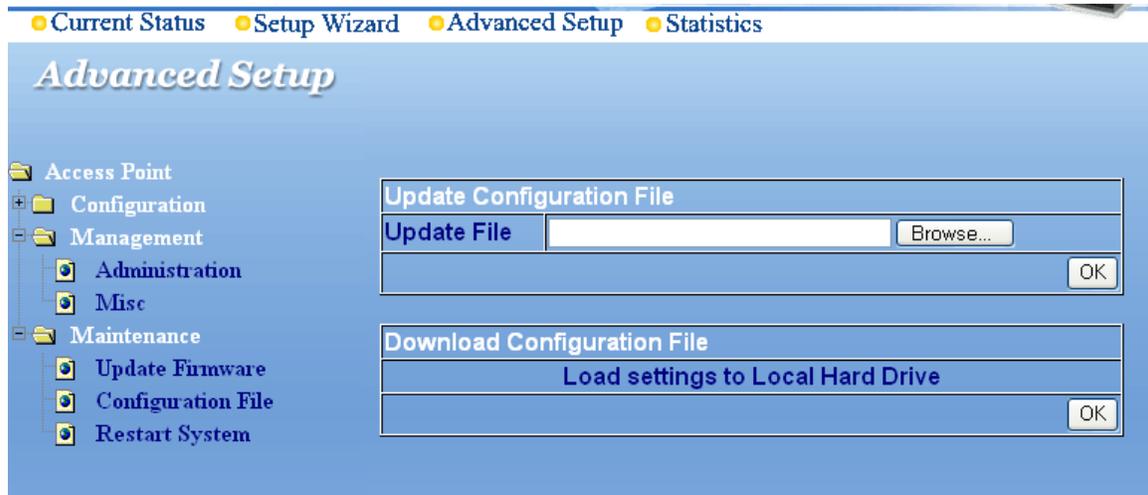
Maintenance/Update Firmware



Update File: Click on **Browse** to find the new firmware file from your hard drive.

After you find the updated firmware file located on your hard drive, click **OK** to start the firmware update process.

Configuration File



Update File: Click on **Browse** to find the new configuration file from your hard drive.

After you have found the configuration file located on your hard drive, click '**OK**' to start the uploading process to the device.

Restart System

The screenshot shows the 'Advanced Setup' page with a navigation menu on the left and a main content area. The navigation menu includes 'Access Point', 'Configuration', 'Management', 'Administration', 'Misc', 'Maintenance', 'Update Firmware', 'Configuration File', and 'Restart System'. The 'Restart System' option is highlighted in the main content area, with a button labeled 'Restart System' and a sub-button labeled 'Apply Settings and Restart' with a 'Restart' button next to it.

Apply Settings and Restart: If you have made any changes to the configuration settings, click **Restart** to apply the changes.

Statistics

Throughput

The screenshot shows the 'Statistics' page with a navigation menu on the left and a main content area. The navigation menu includes 'Type', 'Throughput', 'Transmitted', 'Received', and 'WEP Frame Error'. The 'Throughput' section is expanded, showing 'WLAN 802.11g' selected. The main content area displays a table titled 'ThroughPut of WLAN 802.11g' with the following data:

ThroughPut of WLAN 802.11g	
Transmit Success Rate	100 %
Transmit Retry Rate	2 %
Receive Success Rate	100 %
Receive Duplicate Rate	0 %
RTS Success Count	216610
RTS Failure Count	37
RTS Success Rate	100 %

A 'Reload' button is located at the bottom right of the table.

Displays the WLAN 11g throughput statistics for received, transmitted and RTS communications.

Transmitted

● Current Status ● Setup Wizard ● Advanced Setup ● Statistics

Statistics

- Type
 - Throughput
 - Transmitted
 - WLAN 802.11g
 - Received
 - WEP Frame Error

Transmitted Frames Count	
Transmitted Fragment Count	905312
Multicast Transmitted Frame Count	894640
Transmitted Error Count	2639
Transmitted Total Retry Count	24492
Transmitted Multiple Retry Count	24492

Reload

Displays the 11g WLAN Tx Fragment Count, Multicast Tx Frame Count, Tx Error Count, Total Tx Retry Count, Tx Multiple Retry Count.

Received

● Current Status ● Setup Wizard ● Advanced Setup ● Statistics

Statistics

- Type
 - Throughput
 - Transmitted
 - Received
 - WLAN 802.11g
 - WEP Frame Error

Received Frame Count	
Received Fragment Count	2515886
Multicast Received Frame Count	2657
Received Frame FCS Error Count	37
Received Frame Duplicate Count	0
Ack Rcv Failure Count	0

Reload

Displays the 11g WLAN Rx Fragment Count, Multicast Rx Frame Count, Rx Frame FCS Error Count, Rx Frame Duplicate Count and Ack Rx Failure Count.

WEP Frame Error

● Current Status ● Setup Wizard ● Advanced Setup ● Statistics

Statistics

- Type
 - Throughput
 - Transmitted
 - Received
 - WEP Frame Error
 - WLAN 802.11g

Wep Frame Error Count	
Wep Excluded Frame Count	2664
Wep ICV Error Count	0

Reload

This statistics page displays the counting for: WEP excluded Frames Count and WEP ICV Error Count.

Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the 802.11g Wireless Access Point. We cover various aspects of the network setup, including the network adapters. Please read the following if you are having problems.

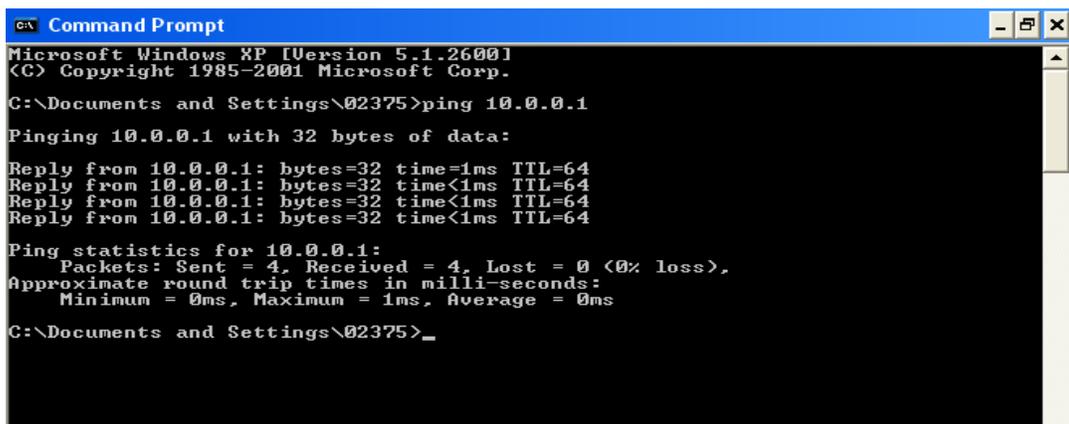
Note: It is recommended that you use an Ethernet connection to configure the 802.11g Wireless Access Point.

1. The computer used to configure the 802.11g Wireless Access Point cannot access the Configuration menu.

- Check that the **Ethernet LED** on the 802.11g Wireless Access Point 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 refer to item 3 in this Troubleshooting section (*Check that the drivers for the network adapters are installed properly*) to check that the drivers of the **Ethernet Adapter** are loaded properly.
- Check that the **IP Address** is in the same range and subnet as the 802.11g Wireless Access Point.

Note: The default IP Address of the 802.11g Wireless Access Point is 10.0.0.1. All the computers on the network must have a unique IP Address in the same range, e.g., 10.0.0.x. They must all have the same subnet mask, e.g., 255.0.0.0. Any computers that have identical IP Addresses will not be visible on the network.

- Do a **Ping test** to make sure that the 802.11g Wireless Access Point is responding. Go to **Start>Run>Type Command>Type ping 10.0.0.1** A successful ping will show four replies.



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

C:\Documents and Settings\02375>ping 10.0.0.1
Pinging 10.0.0.1 with 32 bytes of data:
Reply from 10.0.0.1: bytes=32 time=1ms TTL=64
Reply from 10.0.0.1: bytes=32 time<1ms TTL=64
Reply from 10.0.0.1: bytes=32 time<1ms TTL=64
Reply from 10.0.0.1: bytes=32 time<1ms TTL=64

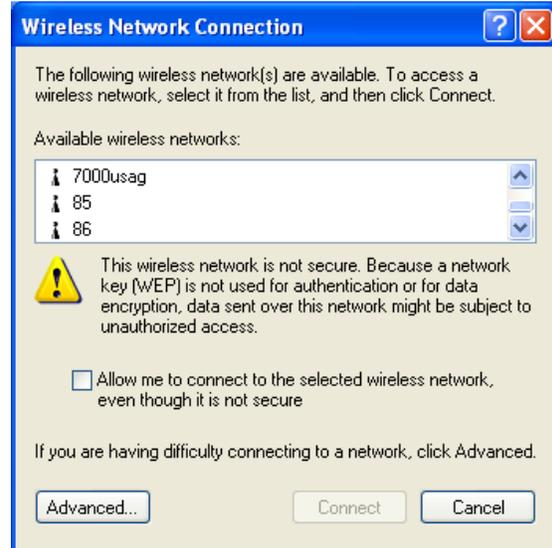
Ping statistics for 10.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\Documents and Settings\02375>_
```

Note: If you have changed the default IP Address, make sure to ping the new IP Address assigned to the 802.11g Wireless Access Point.

2. The computer cannot access the Internet in the Infrastructure mode.

Make sure the computer 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.

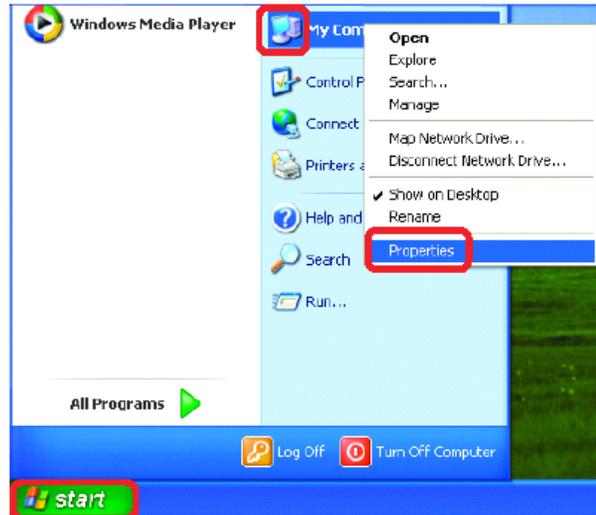


- Check that the **IP Address** assigned to the wireless adapter is within the same **IP Address range** as the access point and gateway. *(Since the 802.11g Wireless Access Point has an IP Address of 10.0.0.1, wireless adapters must have an IP Address in the same range, e.g., 10.0.0.x. Each device must 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.

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

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

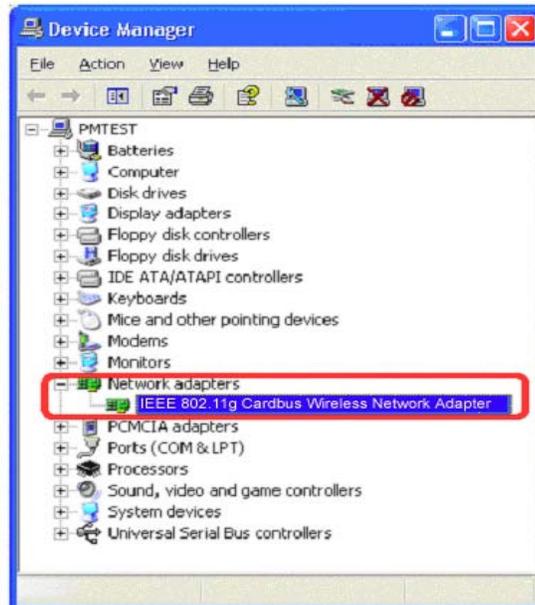
- Go to **Start**
- Right-click on **My Computer**
- Click **Properties**



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



- Double-click on **Network Adapters**



- Right-click on **IEEE 802.11g Wireless Cardbus Network Adapter**

- Select **Properties** to check that the drivers are installed properly



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

- Click **OK**

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

Wireless 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 wireless products.

5. Why does my wireless connection keep dropping?

- Antenna Orientation- Try different antenna orientations for the 802.11g Wireless Access Point. 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 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. Everything seems to be properly set up, so why can't I get a wireless connection?

Have you enabled wireless encryption? Your Access Point supports wireless encryption - but remember that to establish a wireless connection while enabling Encryption on the 802.11g Wireless Access Point, you must also enable encryption on all other members of the network.

- The Encryption settings are: 64, 128, or 152 bit. Make sure that the encryption bit level is the same on the Access Point and other network members.

Make sure that the SSID on the Access Point and the computer are exactly the same. If they are not, wireless connection will not be established. Please note that there are SSIDs for 802.11g. The default SSID for 802.11g is **WLAN**.

Technical Specifications

Standards

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

Device Management

- Web-Based - Internet Explorer v6 or later; Netscape Navigator v6 or later; or other Java-enabled browsers
- DHCP Client

Network Architecture

- Supports Infrastructure Mode

LEDs

- Power
- WAN
- LAN (10/100)
- WLAN – 802.11g

Wireless Operating Range*

- Indoors - up to 328 feet (100 meters)
- Outdoors – up to 1,312 feet (400 meters)

Temperature

- Operating: 32°F to 149°F (0°C to 40°C)
- Storing: 4°F to 167°F (-20°C to 65°C)

Humidity:

- 95%maximum, non-condensing

** Environmental Conditions may adversely affect wireless signal range*

Safety and Emissions:

- CE

Physical Dimensions:

- L = 140mm
- W = 110mm
- H = 25mm

Wireless Data Rates with Automatic Fallback:

- 54 Mbps 48Mbps 36Mbps
- 24Mbps 18Mbps 12Mbps
- 11Mbps 9Mbps 6Mbps
- 5.5Mbps 2Mbps 1Mbps

Security:

- 64, 128, 152-bit WEP (Wired Equivalent Privacy)
- WPA - Wi-Fi Protected Access

External Antenna Type:

- Detachable Dipole Antenna, Reversed SMA connectors

Wireless Frequency Range:

- 2.4 – 2.4825 GHz

Modulation Technology:

- Orthogonal Frequency Division Multiplexing (OFDM)
- PBCC
- Complementary Code Keying (CCK)

Media Access Control:

- CSMA/CA with ACK

Wireless Transmit Power:

- 15dBm(32mW)±2dB

Power Adapter:

- Ext. Power Supply DC 5V, 2.0A
- 100V - 240V ~ 50-60Hz

Weight:

- 190g

Receiver Sensitivity:

- 54Mbps OFDM, 10% PER, -73dBm
- 48Mbps OFDM, 10% PER, -76dBm
- 36Mbps OFDM, 10% PER, -82dBm
- 24Mbps OFDM, 10% PER, -85dBm
- 18Mbps OFDM, 10% PER, -88dBm
- 12Mbps OFDM, 10% PER, -89dBm
- 11Mbps CCK, 8% PER, -91dBm
- 9Mbps OFDM, 10% PER, -90dBm
- 6Mbps OFDM, 10% PER, -91dBm
- 5Mbps CCK, 8% PER, -92dBm
- 2Mbps QPSK, 8% PER, -93dBm
- 1Mbps BPSK, 8% PER, -94dBm