

**54Mbps Wireless Access Point  
User Manual**

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# Safety Instructions

## For Installation

- Use only the type of power source indicated on the marking labels.
- Use only the power adapter supplied with the product.
- Do not overload wall outlet or extension cords as this may increase the risk of electric shock or fire. If the power cord is frayed, replace it with a new one.
- Proper ventilation is necessary to prevent the product overheating. Do not block or cover the slots and openings on the device, which are intended for ventilation and proper operation. It is recommended to mount the product with a stack.
- Do not place the product near any source of heat or expose it to direct sunshine.
- Do not expose the product to moisture. Never spill any liquid on the product.
- Do not attempt to connect with any computer accessory or electronic product without instructions from qualified service personnel. This may result in risk of electronic shock or fire.
- Do not place this product on an unstable stand or table.

## For Using

- Power off and unplug this product from the wall outlet when it is not in use or before cleaning. Pay attention to the temperature of the power adapter. The temperature might be high.
- After powering off the product, power on the product at least 15 seconds later.
- Do not block the ventilating openings of this product.
- When the product is expected to be not in use for a period of time, unplug the power cord of the product to prevent it from the damage of storm or sudden increases in rating.

## **For Service**

Do not attempt to disassemble or open covers of this unit yourself. Nor should you attempt to service the product yourself, which may void the user's authority to operate it. Contact qualified service personnel under the following conditions:

- If the power cord or plug is damaged or frayed.
- If liquid has been spilled into the product.
- If the product has been exposed to rain or water.
- If the product does not operate normally when the operating instructions are followed.
- If the product has been dropped or the cabinet has been damaged.
- If the product exhibits a distinct change in performance.

# FCC Information

## 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.

Shielded interface cables must be used in order to comply with emission limits.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**FCC Conditions**

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.
2. This device must accept any interference received, including interference that may cause undesired operation.

**FCC Radiation Exposure Statement**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20cm between the radiator & your body.

## About This User Manual

For brevity, throughout this manual the “Wireless Broadband Router” is referred to as “the router” or “the device” and following terms or abbreviations are used interchangeably:

- Access Point-AP
- Wireless LAN-WLAN
- Ethernet network-LAN-network

This User Manual contains information on how to install and configure your Wireless Broadband Router to get your network started accessing the Internet. From now on, we will guide you through the correct configuration steps to get your device up and run.





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# 1 Introduction

## 1.1 Overview

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Thank you for choosing this 54Mbps Wireless Access Point. The Access Point is a transparent bridge device which provides mobile wireless clients the connectivity to a wired network. This enables the wireless clients to access all available resources and peripherals on the wired network. In addition, multiple Access Points can be installed to extend the wireless service coverage area for seamless wireless access.

With the support of new emerged 802.11g draft standard, the Access Point provides data transfer of up to 54 Mbps, up to 5 times faster than 802.11b. Since 802.11g operates on the same frequency of 2.4 GHz as 802.11b, it is backwards compatible with existing Wi-Fi 802.11b devices. The benefit is that you can preserve the existing 802.11b infrastructure while migrating to the new screaming fast 802.11g.

In addition, this Access Point has an integrated DHCP server which automatically assigns IP addresses to your wireless devices. The AP also implements a built-in Web server for easy configuration.

## 1.2 Package Contents

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Check the contents of the package against the pack contents checklist below. If any of the items is missing, then contact the dealer from whom the equipment was purchased.

- 54Mbps Wireless Access Point x1
- Power Adapter and Cord x1
- CD-ROM x1
- RJ-45 Ethernet Cable x1

## 1.3 Wireless Network Scenarios

An AP is used as a bridge linking the wireless network to a wired LAN and thus creating an Infrastructure network. According to the scale of your network, you can install a single AP or multiple APs to create a roaming wireless network.

The simplest Infrastructure network is depicted as the figure below where a group of wireless clients and an AP composes a Basic Service Set (BSS). As this 54Mbps AP is 802.11g and 802.11b compliant, it is capable of linking both the 802.11g and 802.11b wireless clients to your wired network.

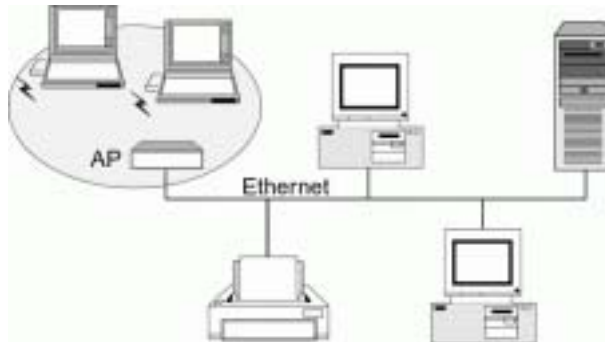


Figure 1-1 Connecting to a single AP

For larger area, you can also choose to implement multiple APs to extend the wireless service coverage area for seamless wireless access. A group of wireless clients and multiple APs using the same SSID form an Extended Service Set (ESS). The figure below shows a typical roaming wireless network within which each AP operates in an independent channel. But all the APs use an identical SSID and security settings (if enabled).

For the mobile clients that want to wander across the different APs but maintain the network connectivity at all times, they must operate in Infrastructure mode and use the same SSID and security settings (if enabled) with the APs. If the APs are "open", that is, periodically broadcast their SSIDs to allow the wireless

clients to recognize their presence, then wireless clients can use the special SSID "any" to associate with these "open" APs.

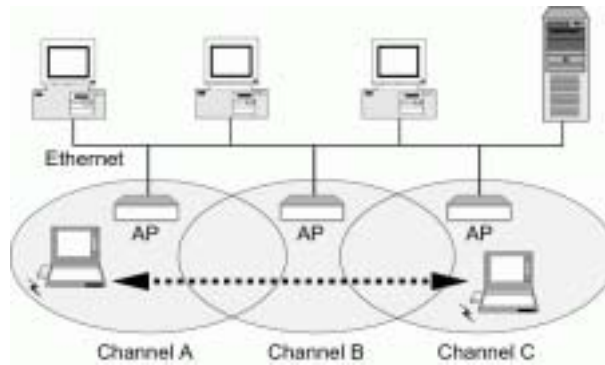


Figure 1-2 Roaming between multiple APs



# 2 Hardware Description & Installation

## 2.1 Physical Outlook

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### Front Panel

The following illustration shows the front panel of the AP:



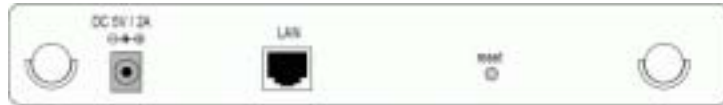
### LED Indicators

The Access Point is equipped with three LEDs on the front panel as described in the table below (from left to right):

LEDs	Function	Color	Status	Description
⏻	Power	Green	Off	No power is supplied to the unit.
			Solid	Power is connected to the unit.
WLAN	Wireless LAN Port Ready/Activity	Green	Off	WLAN interface is not initialized properly.
			On	WLAN interface is initialized properly and ready.
			Blinking	Transmitting/receiving packets on the WLAN port.
LAN	LAN Port Status	Orange (100 Mbps)	Off	Power is off or no Ethernet device is connected.
		Green (10 Mbps)	On	Ethernet device is connected.
			Blinking	Transmitting/receiving packets on the LAN port.

## Rear Panel and Connectors

The following figure illustrates the rear panel of your 54Mbps Wireless Access Point.



- **DC 5V/2A:** Power connector
- **LAN:** 10/100BaseT LAN port of RJ-45 connector. Connects to a hub, switch or NIC-equipped PC in your network. The LAN port supports Auto-MDIX feature; it works with either a straight-through or crossover cable.
- **Reset button**  
To reset the device to factory defaults, insert a straightened paperclip into the **Reset** hole to press the button. Keep pressing and power cycle (off and on) the device. Wait for at least 5 seconds to release the button. Then wait the device to finish booting.

If you want to restore your customized settings after loading defaults, refer to “4.5 Administration” for more information.

## 2.2 Hardware Connection

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### Choosing a Place for the AP

- Place the device close to the power outlet for the cable to reach it easily.
- Locate an optimum location for the AP, usually at the center of your wireless network to provide best coverage for wireless stations.
- Adjust the direction of the antennas to enhance the receiving sensitivity.



## Connecting the AP

Follow the steps below to connect the related devices.

### **Step 1 Connecting the power adapter.**

Connect the single DC output connector of the power adapter to the power jack on the back of the AP. Then connect the supplied power cord to the power adapter and the other end to an AC outlet.

### **Step 2 Connecting to Ethernet network.**

Attach one end of the Ethernet cable with RJ-45 connectors to your hub, switch or a PC's Ethernet port, and the other end to the **LAN** port of your AP.



# 3 Setting Up Ethernet / WLAN Client

This chapter describes how to configure an Ethernet or wireless station to access the AP's built-in Web server for initial configuration.

You can choose to access the AP's Web interface via Ethernet or wireless network. Whatever your choice, you must properly configure the network settings of your PC to be on the same subnet with the AP. As the AP is shipped with these defaults:

- **IP address:** 192.168.1.1
- **Subnet mask:** 255.255.255.0
- **DHCP server:** Disabled

Therefore, you should configure your PC's TCP/IP settings to use a static IP as below:

- **IP address:** 192.168.1.x (x is between 2 and 254)
- **Subnet mask:** 255.255.255.0
- **Gateway:** 192.168.1.1

The ensuing sections will guide you through the static IP configurations. Once you have enabled the AP's DHCP server function, you may just set your PC to be a DHCP client.

## 3.1 Setting up TCP/IP

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Before proceeding, make sure your computer is equipped with Ethernet network card or wireless adapter and has appropriate network card driver and TCP/IP installed.

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**Note:** If TCP/IP protocol is not installed on your PC, refer to Windows documentations for installation instructions.

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### For Windows 98/ME

- Step 1 Click on the **Start** menu, point to **Settings** and click on **Control Panel**.
- Step 2 Double-click the **Network** icon.
- Step 3 In the **Network** window, highlight **TCP/IP** protocol for your NIC or wireless adapter and click **Properties**.
- Step 4 On the **IP Address** tab, select **Specify an IP address**. Then enter the IP address (192.168.1.1x) and subnet mask (255.255.255.0) in the provided fields. Select the **Gateway** tab and set the gateway as 192.168.1.1.
- Step 5 Click **OK** twice to finish the configuration. If your network settings have been changed, you will be prompted to restart your computer. Click **Yes** to have new settings take effect.

### For Windows 2000/XP

- Step 1 Click on the **Start** menu, point to **Settings** and click on **Control Panel**.
- Step 2 Double-click **Network Dial-up Connections** (Windows 2000) or **Network Connections** (Windows XP) in **Control Panel**.
- Step 3 Right-click the **Local Area Connection** icon for your NIC or wireless adapter and then click **Properties**.
- Step 4 On the **General** tab, highlight **Internet Protocol (TCP/IP)** and then click **Properties**.
- Step 5 Enable the **Use the following IP Address** option and enter these settings:
  - **IP address:** 192.168.1.x (x is between 2 and 254)
  - **Subnet mask:** 255.255.255.0.
  - **Default Gateway:** 192.168.1.1.
- Step Click **OK** to finish the configuration.

## 3.2 Setting up Wireless Client

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If you choose to access the router via a wireless client, also verify the following:

1. Make sure your PC is equipped with 802.11g or 802.11b wireless adapter and has appropriate WLAN card driver/utility and TCP/IP installed.
2. Set the wireless adapter to use appropriate TCP/IP settings as described in previous section.
3. Launch the wireless adapter's provided utility and verify that your wireless client is configured with these settings:
  - **Operation Mode:** Infrastructure
  - **SSID:** 11g AP
  - **Authentication:** Open
  - **WEP Mode:** Disabled

---

**Note:** If you only finished the wireless settings and didn't configure the wireless adapter's TCP/IP settings, even your link status indicates a successful connection with the AP, this connection applies to the "physical" network layer only. Your wireless adapter cannot communicate with the AP. Make sure to set the TCP/IP properties as described in previous section.

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### 3.3 Checking Connection with the AP

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You can use the Ping command to verify whether or not your Ethernet/Wireless client has successfully connected to the 54Mbps Wireless Access Point.

To execute the ping command, open the DOS window and ping the IP address of the AP at the DOS prompt. For example:

```
ping 192.168.1.1
```

If the following response occurs:

```
Reply from 192.168.1.1 bytes=32 time=100ms TTL=253
```

Then the connection between the 54Mbps Wireless Access Point and the network has been successfully established.

Otherwise, if you get a failed ping with the response of:

```
Request time out
```

Then the connection is fail. Verify your network setting is correct. For Ethernet client, also check the cable between the AP and the PC.

# 4 Web Configuration

## 4.1 Accessing Web-Based Configuration Utility

Once your PC is properly configured as described in "3. Setting Up Ethernet / WLAN Client", you can proceed as follows for initial configuration:

1. Start your Web browser and type **http://192.168.1.1** in the URL field. This address is the default private IP of your AP.
2. After connecting to the device, you will be prompted to enter the username and password. Leave the username empty and enter the default password of **admin**.



Figure 4-1 Login to Web Configuration Utility

After you login, the **System Overview** page of the 54Mbps Wireless Access Point displays. From now on the Access Point acts as a Web server sending HTML pages/forms on your request. You can click the menu options at the top to start your configuration task.

While working with this Web Configuration Utility, corresponding configuration fields are displayed according to your specific selection to avoid any possible conflicting setting. In addition, should you input invalid values, the utility provides instant prompt to help you recover from error inputs.

## To enable Your Settings

After you have customized the settings and then click the **Apply** button, the device will begin registering your settings. You will be prompted to wait for a few seconds for the AP to commit changes to permanent storage. During this process, it is important not to switch on or off the AP otherwise damage may be caused to the device.

After the settings have been registered, the screen will return to previous page and the settings are effective. You may then proceed with other configuration tasks.

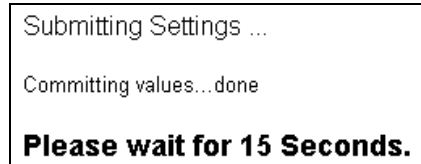


Figure 4-2 Apply Changes



## 4.2 Viewing System Status

Clicking **System Overview** in the menu bar will display the **System Overview** page which shows the basic information of your 54Mbps Wireless Access Point, including the system, LAN interface and Wireless LAN interface information. You may click the **Update** button to update the overall status.

System Overview	LAN	Wireless LAN (2.4G)	Administration
This page displays summary for the router status. Click the button to update. <a href="#">Update</a>			
<b>System</b>		<b>System Time:</b> 05/06/01 08:00:50	
		<b>Firmware Version:</b> 2.02.18	
<b>LAN Interface</b>		<b>MAC Address:</b> 00:00:00:00:00:00	
		<b>IP Address/Subnet Mask:</b> 192.168.1.1/255.255.255.0	
		<b>DHCP Server:</b> Disabled	
<b>Wireless LAN (2.4G) Interface</b>		<b>Access Point Name:</b> 11g AP	
		<b>SSID:</b> 11g AP	
		<b>BSSID:</b> 00:00:00:00:00:00	
		<b>Channel No.:</b> 11	

Figure 4-3 System Overview

## 4.3 LAN Configuration

The LAN configuration page allows you to define the private IP address and DHCP server settings of the AP.

### Manually Specifying an IP Address

If you want to reconfigure the IP information of the AP, just enable the **Manual Config** option and enter your new settings in the provided fields.

**Note:** If you change the IP settings and apply the changes, the PC from which you configure the AP may lose the communication to the AP. To reconnect, you will need to reconfigure your PC to use an IP address compatible with the new IP address.

## Enabling DHCP Server

The AP implements a built-in DHCP server which can be used to dynamically assign IP addresses to the DHCP clients on the LAN/WLAN. It is also probably you already have a DHCP server on your network and you do not enable this function.

---

**Note:** It is not allowed to have two DHCP servers running on one LAN at the same time. If you decide to enable the DHCP on this AP, remember to disable the DHCP function of the other device.

---

To use DHCP server function, make sure you have properly set the AP's IP address, enable the DHCP service, then enter the fields below:

**DHCP Lease Time:** Specify the time that a network device can lease a private IP address before the DHCP server reassigning the IP address.

**IP Pool Range:** Specify the starting and ending IP address of the IP address pool. Whenever a network device requests an Internet session, the AP will allocate an unused IP address from this pool and lease them to the device for a specified amount of time.

## Setting the AP to be DHCP Client

If your network has already deployed a DHCP server, you should set the AP to be a DHCP client. The AP will request an IP Address from the DHCP server when rebooted or powered up.

After you enable the **DHCP client** option and apply the change, your PC will lose the communication to the AP. Since the IP address assigned to the AP could come from a large DHCP address pool, you will need a third-party tool to identify the AP's IP address.

System Overview	LAN	Wireless LAN (WLAN)	Administration
This page configures the LAN interface. It also applies to Wireless LAN interface.			
<b>General</b>		MAC Address: 00:90:96:2c:6c:f1 Protocol: <input checked="" type="checkbox"/> Manual Config <input type="checkbox"/> DHCP Client	
<b>Manual Config</b>		IP Address: 192.168.1.1 Subnet Mask: 255.255.255.0 Default Gateway: 192.168.1.1	
<b>DHCP Server</b>		Servers: <input type="checkbox"/> Enable <input checked="" type="checkbox"/> Disable	
<input type="button" value="Apply"/> <input type="button" value="Cancel"/>			

Figure 4-4 LAN Configuration

### Viewing Current DHCP Assignments

When DHCP server function is enabled on the AP, the AP keeps a record of any machine that has leased IP from the specified IP pool. The DHCP lease table is displayed under **System Overview > LAN Interface**:

<b>LAN interface</b>	<b>MAC Address:</b>	00:90:96:2c:6c:f1									
	<b>IP Address/Subnet Mask:</b>	192.168.1.1 / 255.255.255.0									
	<b>DHCP Server:</b>	Enabled									
	<b>Active DHCP Leases:</b>										
		<table border="1"> <thead> <tr> <th>MAC Address</th> <th>IP Address</th> <th>Expires In</th> </tr> </thead> <tbody> <tr> <td>00:06:5d:a6:3e:e9</td> <td>192.168.1.100</td> <td>46 seconds</td> </tr> <tr> <td>00:90:96:00:45:32</td> <td>192.168.1.101</td> <td>expired</td> </tr> </tbody> </table>	MAC Address	IP Address	Expires In	00:06:5d:a6:3e:e9	192.168.1.100	46 seconds	00:90:96:00:45:32	192.168.1.101	expired
MAC Address	IP Address	Expires In									
00:06:5d:a6:3e:e9	192.168.1.100	46 seconds									
00:90:96:00:45:32	192.168.1.101	expired									

Figure 4-5 DHCP Lease Table

## 4.4 Wireless LAN (2.4G) Configuration

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With the default values, the AP can be easily associated by a wireless client. We suggest that you customize the wireless settings to prevent unauthorized association.

**Access Point Name:** The name used for identifying the Access Point. The default value is **11g AP**.

**SSID:** Service Set ID. It uniquely identifies a logical network domain name of your WLAN. The default value is **11g AP**.

**Network Type:** An “**Open**” AP will periodically broadcast its SSID to allow the wireless clients to recognize their presence. However, this creates a security hole since any wireless station with SSID set to “any” or got the broadcast may associate to your AP. It is recommended to set this option to **Closed** to have your AP only accept stations whose SSIDs are the same as this AP.

**Country:** Select the country where you use this AP. When the country setting is changed, the AP scans only the legal frequency channels allowed in that regulatory domain.

**Channel ID:** The radio frequency used for communication. Available channels vary according to the regulations in the country you specified in the **Country** drop-down list. Select a channel out of the available channels or use the default channel.

### ↳ **Security**

**Data Encryption (WEP Mode):** Select whether to use WEP (Wired Equivalent Privacy), an authentication algorithm which encrypts your data and protects your wireless network against eavesdropping.

- **Off:** The data is not encrypted when it is transferred from one station to another. This is the default. For security concern, we strongly suggest you enable WEP function.
- **On:** The data is encrypted by the default key (with its radio button selected) before being transmitted. If WEP is set to On, you should proceed to enter WEP keys.

**Authentication Mode:** Select **Open System** or **Shared Key** or **Shared Key only**.

Authentication is a process in which the AP validates if wireless clients are qualified to access the AP's service. This happens **prior to** any wireless client can associate to an AP. The IEEE 802.11 defines two types of algorithms in authentication: the "Open System" and "Shared Key".

- **Open System:** The authentication is done through a pseudo process, accepting all kinds of requests, mainly used in cases where connectivity is more important than security.
- **Shared Key:** Utilizes WEP capability to further verify if a wireless client is authorized to share this AP's resource. If the client has the wrong key or no key, it will fail authentication and will not be allowed to associate with the AP.

If you select **Open System** or **Shared Key**, wireless stations with or without correct WEP keys can be authenticated by the AP.

Yet if **Shared Key only** is selected, you must enable WEP function and define your WEP keys. The keys are used both to authenticate wireless clients and encrypt outgoing data.

**WEP Keys:** Enter one to four WEP keys in either ASCII or Hexadecimal format. You can use 64 bits or 128 bits as the encryption algorithm. The higher the bit number, the greater the complexity and the security of the encryption.

Note that when using Hexadecimal format, only digits 0-9 and letters A-F, a-f are allowed. Valid key length for each encryption type is as below:

	<b>HEX Format</b>	<b>ASCII Format</b>
64 Bit	10 hexadecimal digits	5 ASCII characters
128 Bit	26 hexadecimal digits	13 ASCII characters

### Specifying a default key to encrypt outgoing data

Aside from entering your WEP keys, you should select one of the entered keys to encrypt the data before being transmitted. The AP always transmits data encrypted using this WEP Key. The key number (1,2,3,4) is also transmitted. The receiving station will use the key number to determine which key to use for decryption. If the key value does not match with the transmitting station, the decryption will fail. To ensure successful decryption, have your wireless stations set identical key tables.

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**Note:** All Wireless Stations must use identical encryption algorithm level and Key values (same key position in its key table) to ensure successful data transmission.

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### ⌵ Access Control

**MAC Address Access Control:** This AP has the capability to control the wireless client access based on the MAC address of a wireless client. We offer you the flexibility to customize your own control policy based on these options:

- **Allow:** If selected, only the wireless client whose MAC address is in the **Allow List** is allowed to access this AP.
- **Deny:** If selected, only the wireless client whose MAC address is in the list cannot access this AP. Others clients are granted access.
- **Disable:** No access control. All the clients are allowed to access this AP.

When entering MAC address in the list, up to 16 MAC entries are allowed.

### ⌵ Advanced Configuration

We suggest you not to modify the Advanced parameters unless specific requirement is required. The parameters are described as below:

**Beacon Interval:** Defines the periodic interval at which the Access Point sends out a beacon.

**RTS Threshold:** Request to send threshold. It specifies the packet size beyond which the AP invokes its RTS/CTS mechanism. Packets that exceed the specified RTS threshold trigger the RTS/CTS mechanism.

**Fragment Threshold:** It determines whether packets will be fragmented and at what size. On an 802.11 wireless LAN, packets exceed the fragmentation threshold are fragmented, i.e., split into, smaller units suitable for the circuit size. On the other hand, packets smaller than the specified fragmentation threshold value are not fragmented.

**DTIM:** Specifies the Deferred Traffic Indicator Map (DTIM) period. This value determines at which interval the AP will send its broadcast traffic. The default value is 3.

**Rate:** The default setting, **Auto**, allows the AP to automatically use the fastest possible data rate. Selecting a specific rate forces the AP to transmit at a particular speed.

**Basic Rate Set:** The **Default** option uses 1 or 2 Mbps for 802.11b and 6, 12 or 24Mbps for 802.11g as the basic rate of your wireless network. The **All** option uses 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, or 54Mbps. The wireless clients must support the basic rate to successfully associate with the AP.

**54g™ Mode:** 54g is Broadcom's latest wireless technology which offers the fastest possible data rate of 54Mbps under 802.11g draft specification. This item allows you to choose from these communication options:

- **54g Auto:** Both 802.11g and 802.11b clients can communicate with this AP. The data rate will be automatically adjusted.
- **54g Performance:** Only 802.11g wireless clients can communicate with the AP.
- **802.11b Only:** Only 802.11b clients can communicate with the AP.

System Overview	LAN	Wireless LAN E-64	Administration
This page configures the IEEE 802.11g/40MHz Wireless LAN interface.			
<b>Basic</b> <i>Modifications Suggested</i>	Access Point Name: [11gAP] SSID: [11gAP] Network Type: [Open] [v] Country: [Worldwide] [v] Channel ID: [1] [v]		
<b>Security</b>	Data Encryption (WEP): [Off] [v] Authentication Mode: [Open System/Shared Key] [v] WEP Keys: Key 1: [ ] Key 2: [ ] Key 3: [ ] Key 4: [ ]		
<b>Access Control</b>	MAC Address Access Control: Allow List: [ ]	<input type="checkbox"/> Allow <input type="checkbox"/> Deny <input checked="" type="checkbox"/> Deny	
<b>Advanced</b> <i>Modifications Not Suggested</i>	Beacon Interval: [100] (100ms) RTS Threshold: [2347] (Default) Fragment Threshold: [2346] (Default) DTIM Interval: [1] Rate: [Auto] [v] Radio Rate Test: [Default] [v] Sticky Mode: [Sticky Auto] [v]		
<input type="button" value="Apply"/> <input type="button" value="Cancel"/>			

Figure 4-6 Wireless LAN Configuration



## 4.5 Administration

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### ▮ System Clock Configuration

Network administrators may want to synchronize date and time among network devices. This can be done by synchronizing the local clock to an available NTP server or manually specifying the date and time in this AP for your network.

#### **Option 1: Using an existing NTP server.**

1. In **Set by** item, enable the **Network Time Protocol** option.
2. In **NTP Server** field, enter the IP address of the NTP server.
3. In **Update Interval** item, select your update interval as **1, 2 or 7 days**.
4. In **Time Zone** field, select a time zone according your geographic location.

#### **Option 2: Specifying the AP as your network NTP server.**

1. In **Set by** item, enable the **Manual Setup** option.
2. Manually enter the date and time information in respective fields.

### ▮ Management Setup

**Username&Password:** For administration security, specify required **User Name** and **Password** and re-enter password in corresponding field for confirmation. This setting limits your Web-based manager access to users with the correct credentials. By default, the user name is empty and the password is **admin**.

### ▮ Firmware Upgrade

This option allows you to upgrade the 54Mbps Wireless Access Point with new firmware. After upgrading, your customized configuration will still exist and not reset to the factory defaults. To upgrade, download required firmware file to your host PC and follow the steps below:

1. In the **Locate New Firmware** field, click **Browse** to locate the firmware file.
2. Click the **Upgrade** button to start upgrade and then wait for a few minutes as the utility prompts. You will return to the Administration page while the process is complete.

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**Note:** Do not interrupt the upgrade process otherwise it might cause damage to your 54Mbps Wireless Access Point.

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After upgrade, you can see the new firmware version in **Current Firmware version** field.

#### ↳ **User Configurations**

**Save Current Configurations:** Allows you to save your customized settings to the device. Once your router is properly configured, you may wish to save current settings. The saved settings can be retrieved easily if required, even after you reload factory defaults.

**Retrieve User Configurations:** If you have loaded factory defaults (either via the Load Default button on the back panel or via the Restore button in this group), you can restore your settings by clicking the **Retrieve** button.

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**Important:** After retrieving your desired configuration file, you must reboot the device to enable the retrieved settings.

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**Restore Factory Defaults:** To restore factory defaults, click the **Restore** button and then wait for a few seconds as the utility prompts. You will return to the Administration page while the process is complete. This feature is basically the same as resetting via the Load Default button (see "Rear Panel and Connectors") on the device but it allows you to remotely perform the reset task.

#### ↳ **System**

**Reboot:** This option allows to you remotely reboot the device.

System Overview	LMI	Windows LMI 6.9.0	Administration
This page is for system administration.			
<b>System Check</b>	Current Time:	18/10/2011 00:13:38	<input type="button" value="Refresh"/>
	Set By:	<input type="checkbox"/> Approach Time Control <input type="checkbox"/> Manual Setup	
	Date:	<input type="text" value="Year (eg 2010)"/> <input type="text" value="Month (eg 01)"/> <input type="text" value="Date (eg 22)"/>	
	Time:	<input type="text" value="Hour (eg 10)"/> <input type="text" value="Minute (eg 00)"/>	
<b>Management Setup</b>	Username:	<input type="text"/>	
	Password:	<input type="password"/>	
	Re-enter Password:	<input type="password"/>	
<input type="button" value="Apply"/> <input type="button" value="Cancel"/>			
<b>Firmware Upgrade</b>	Current Firmware Version:	2.03.01	
	Current Hardware Version:	1.03.01	
	Locate New Firmware:	<input type="text"/>	<input type="button" value="Browse"/> <input type="button" value="Upgrade"/>
<b>User Configuration</b>	Save Current Configuration:	<input type="button" value="Save"/>	
	Restore Configuration:	<input type="text"/>	<input type="button" value="Browse"/> <input type="button" value="Restore"/>
	Restore Factory Defaults:	<input type="button" value="Factory"/>	
<b>System</b>	Refresh:	<input type="button" value="Refresh"/>	

Figure 4-7 Administration



# 5 Specification

## 5.1 Hardware

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- 125MHz MIPS CPU
- 16MB SDRAM
- 4MB Flash Memory
- 802.11g: Broadcom (BCM4306, BCM2050)
- Two external antennas for wireless technology

### Interface

- One RJ-45 LAN port for 10/100Base-Tx Ethernet; HP Auto-MDIX Support
- 802.11g wireless LAN
- Two external antennas for wireless technology

### Physical

- Front Panel: 3 LEDs ( Power x 1, WLAN x 1, LAN x 1)
- Back Panel: Reset button, Power Jack, RJ-45 LAN Port
- Dimensions: 145 mm(L) x 210 mm(W) x 40 mm(H)
- Case types: Lay down

### Power Adapter and Environmental Requirement

- DC Adaptor: Output 5V DC, 2A
- Temperature: 0 to 40°C (operation), -20 to 70 °C (storage)
- Relative Humidity: 5% to 90% (non-condensing)

### Electromagnetic Compliance

- FCC Part 15 Class B
- CE
- EMI/Immunity: VCCI class B

## 5.2 Software

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### LAN Port Features

- DHCP Server
- Settable and Changeable IP Address

### Security Features

- PAP and CHAP Authentication
- ASCII/HEX Format 64/128 Bit WEP Key for Wireless LAN
- Allow/Deny List for Wireless LAN

### Wireless LAN Features

- Fully compatible to 802.11g standard
- Direct Sequence Spread Spectrum (DSSS) technology exploitation
- Seamless roaming within wireless LAN infrastructure
- Low power consumption via efficient power management

### Configuration and Management Features

- Configurable through Web Browser
- Software Upgrade
- DHCP Server function for IP distribution to local network users
- NTP/Manual System Clock
- Configuration Saving/Retrieving