Gemtek
Wireless Broadband Anywhere

Gemtek Technology Co., Ltd.

WX-5520A
Dual Band WLAN Access Point

User's Manual

Oct. 15, 2002 (Draft 1.0)

CONTENTS

Introduction

Thank you for purchasing your WX-5520A Dual Band Wireless Access Point.

This user guide will assist you with the installation procedure.

The package you have received should contain the following items:

- WX-5520A Dual Band Wireless AP

- User Guide

- Power Supply / Cord

- Ethernet Cable

Note: if anything is missing, please contact your vendor

Safety Notification

Your Wireless AP should be placed in a safe and secure location. To ensure proper operation, please keep the unit away from water and other damaging elements.

- Please read the user manual thoroughly before you install the device.
- The device should only be repaired by authorized and qualified personnel.
- Please do not try to open or repair the device yourself.
- Do not place the device in a damp or humid location, i.e. a bathroom.
- The device should be placed in a sheltered and non-slip location within a temperature range of +5 to +40 Celsius degree.
- Please do not expose the device to direct sunlight or other heat sources. The housing and electronic components may be damaged by direct sunlight or heat sources.

Hardware Installation

Front Panel

The front panel provides LED's for device status. Refer to the following table for the meaning of each feature.

LED	STATUS	Description
Power	Off	No Power
	On	Power on
Status	Blink	1. Power up 2. firmware upgrade
Ethernet	Off	no Ethernet link detected
	Green On	10/100Mbps Fast Ethernet link detected. No activity.
	Green Blink	Indicates data traffic on the 10/100 Mbps LAN
11a	Blink	Indicates the device is linking or active data through wireless links
11b	Blink	Indicates the device is linking or active data through wireless links

Rear Panel

The rear panel features 1 LAN port and Factory Reset button. Refer to the following table for the meaning of each feature.

Power (DC 5v)	Used to connect to the power outlet. Only use the power adapter provided with the device. Use of an unauthorized power adapter may cause damage to your device and violate your warranty.
Reset	Reset the configuration to default settings. There are two ways to Reset to factory defaults of the Access Point. Briefly press the Reset Button for approximately ten seconds, or use the setup tab of the Web-Based Management Utility.
LAN	The RJ-45 Ethernet ports used to connect your PC, hub, switch or Ethernet network.

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WX-5520A AP Default Settings

The default settings are shown following.

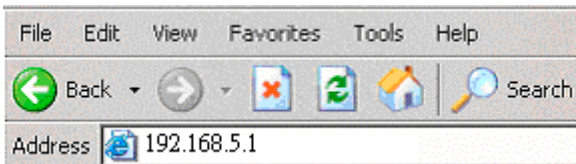| User Name	**admin**	
Password	**1234**	
AP Router IP Address	**192.168.5.1**	
AP Router Subnet Mask	255.255.255.0	
RF ESSID	**Wireless**	
11a RF Channel	52	
11b RF Channel	6	
RF Roaming	Enabled	
Encryption	Disabled	
DHCP client	Disabled	

Web Management Settings

TURN ON POWER SUPPLY

Quick power cycle can caused system corruption. When power on, be careful not to shut down in about 5 seconds, because data is writing to the flash.

START -UP & LOG IN

In order to configure the WX-5520A Wireless AP, please use your web browser (Microsoft Internet Explorer or Netscape) and manually input **192.168.5.1** into the address box (as shown below) and press Enter key.
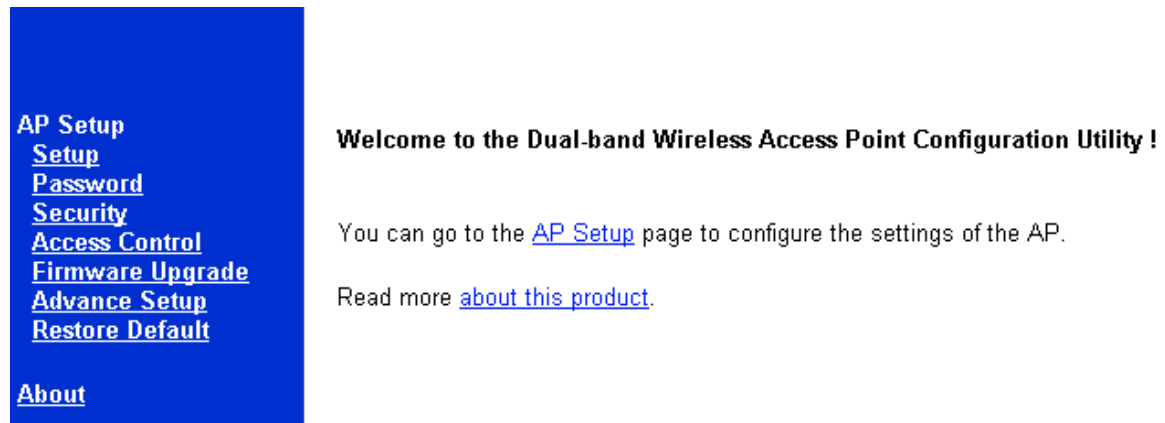

In order to configure the WX-5520A Wireless AP, please input the user-name into the **User Name** box. Enter the password into the **Password** box and press the **OK** button. The default User Name is **admin**, and the default password is **1234**.

Once you have logged-in as administrator, it is a good idea to change the administrator password to ensure a secure connection to the Wireless AP.

MAKE CORRECT NETWORK SETTINGS OF YOUR COMPUTER

To change the configuration, use Internet Explorer (IE) or Netscape Communicator to connect the WEB management **192.168.5.1**.

Main Page

Here allow user to configure basic network settings.

Setup page

The Setup page allow user to configure basic settings. Enter your wireless network's SSID, select the channel at which the network broadcasts its wireless signal, and enter IP address and subnet mask for the Access Point. Press **Apply & Restart** button to save the settings.

IP Address: This IP address must be unique to your network. (The default IP address of 192.168.5.1)

Subnet Mask: The Access Point's Subnet Mask must be same as your Ethernet network.

SSID: The service set identifier (SSID) or network name. It is case sensitive and must not exceed 32 characters, which may be any keyboard character. You shall have selected the same SSID for all the APs that will be communicating with mobile wireless stations.

Channel: Select the appropriate channel from the list provided to correspond with your network settings. You shall assign a different channel for each AP to avoid signal interference.

**Data Rates:** The basic transfer rates should be set depending on the speed of your wireless network.

Password

This page allows you to change the Access Point's password.
Changing the password for the Access Point is as easy as typing the password into the **New Password** field. Then, type it again into the Retype new password field to confirm. Click the **Apply & Restart** button to save the setting.

Use the default password when you first open the configuration pages, and then immediately change the password to avoid a security breach.
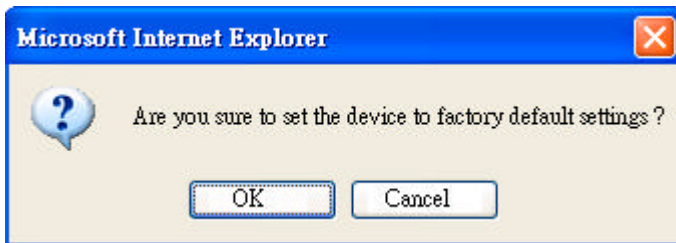
Firmware Upgrade
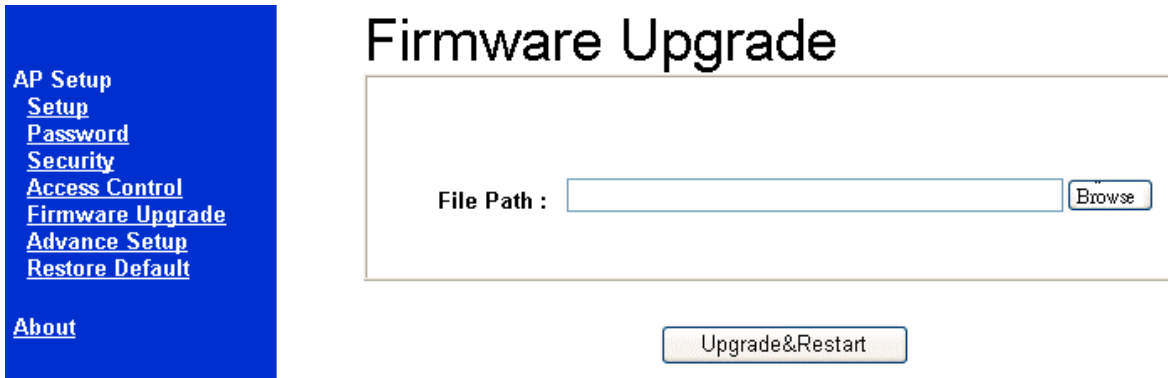
User may download the latest firmware from your vendor's website and store it in local drive.

Find the firmware from local drive and press the **Upgrade & Restart** button.

Restore Default

Press **OK** button will make the AP reset to factory default settings.

Security

Security

Authentication Type:

Open System: The Authentication Type default is set to **Open Syste**m.

It is recommended that you use the default setting.

Shared Key: Shared Key is when both the sender and the recipient share a secret key. All

points on your network must use the same authentication type.

WEP: The WEP Encryption method is **Disable** by default. To enable WEP, click the

Enable radio button.

From the pull-down menu at the top of the screen, select 64-bit, 128-bit, or 152 bit

encryption. The Encryption key is in Hexadecimal format. Hexadecimal characters on your

keyboard are the letters "A-F" and the numbers "0- 9". Click the **Apply & Restart** button

to save the setting.

Access Control

The Access Control tab, allows you to block or allow certain computers by their MAC Address.

To enable filtering of computers by their MAC Addresses, click the **Enable** radio button.

Enter MAC Address and click **Add** button.

Click **Delete** button if you wish to remove the MAC address from the list.

To disable this feature, click the radio button by **Disabl**e.

Click **Apply & Restart** button to save the setting.

Advance Setup

Beacon Interval: This value indicates the frequency interval of the beacon.
A beacon is a packet broadcast by the Access Point to keep the network synchronized.
A beacon includes the wireless LAN service area, the AP address, the Broadcast
destination addresses, a time stamp, Delivery Traffic Indicator Maps, and the Traffic
Indicator Message (TIM).

RTS Threshold: This value should remain at its default setting of 2,346.
Should you encounter inconsistent data flow, only minor modifications are recommended.

Fragmentation Threshold: This specifies the maximum size a data packet will be before
splitting and creating a new packet and should remain at its default setting of 2,346. A
smaller setting means smaller packets, which will create more packets for each
transmission. Only minor modifications of this value are recommended.

DTIM Interval: This value indicates the interval of the Delivery Traffic
Indication Message (DTIM). A DTIM field is a countdown field informing clients of the

next window for listening to broadcast and multicast messages.

When the Access Point has buffered broadcast or multicast messages for associated clients, it sends the next DTIM with a DTIM Interval value.

Access Point Clients hear the beacons and awaken to receive the broadcast and multicast messages.

Preamble Type: The preamble defines the length of the CRC block for communication between the Access Point and a roaming Network Card. (High network traffic areas should use the shorter preamble type.) Select the appropriate preamble type and click the **Apply** button to set it. All wireless points (nodes) on your network should use the same preamble type.

About

The page describes the product briefly.

2.4GHz / 5GHz Dual Band Wireless Access Point
Firmware Version :   1.0.1.3
Regulatory Domain :   FCC
MAC Address :   00:90:4b:02:7c:f6

Dual Band Wireless Access Point conforms to the IEEE 802.11a / 11b Wireless LAN standard. It supports all modes specified in the IEEE standard (up to 54 Mbps), and a Turbo mode which can boost the speed to 72 Mbps.

Dual Band Wireless Access Point comes with advanced security features such as 152-bit WEP, and MAC-based access control.

Troubleshooting

<u>Basic Functions</u>
My Wireless AP will not turn on. No LED's light up.

<u>Cause</u>:

- The power is not connected.

<u>Resolution</u>:

- Connect the power adapter to your AP and plug it into the power outlet.

Note: Only use the power adapter provided with your AP. Using any other adapter may damage your SOHO AP Router.

LAN Connection Problems

I can't access my SOHO AP Router.

<u>Cause</u>:

- The unit is not powered on.
- There is not a network connection.
- The computer you are using does not have a compatible IP Address.

<u>Resolution</u>:

- Make sure your AP is powered on.
- Make sure that your computer has a compatible IP Address. Be sure that the IP Address used on your computer is set to the same subnet as the AP. For example, if the AP is set to 192.168.5.250, change the IP address of your computer to 192.168.5.15 or another unique IP Address that corresponds to the 192.168.5.X subnet.

  Use the Reset button located on the rear of the AP to revert to the default settings.

I can't connect to other computers on my LAN.

<u>Cause</u>:

- The IP Addresses of the computers are not set correctly.
- Network cables are not connected properly.
- Windows network settings are not set correctly.

<u>Resolution</u>:

- Make sure that each computer has a unique IP Address. If using DHCP through the AP , makes sure that each computer is set to "Obtain an IP Address automatically" and restart the computer.
- Make sure that the Link LED is on. If it is not, try a different network cable.
- Check each computer for correct network settings.

Wireless Troubleshooting

I can't access the Wireless AP from a wireless network card

<u>Cause</u>:

- Out of range.
- IP Address is not set correctly.

<u>Resolution</u>:

- Make sure that the Mode, SSID, Channel and encryption settings are set the same on each wireless adapter.
- Make sure that your computer is within range and free from any strong electrical devices that may cause interference.
- Check your IP Address to make sure that it is compatible with the Wireless AP.

Performing a Factory Reset

Follow these steps to perform a Factory Reset using the Reset button on the back of the Wireless AP.

1. With the unit on, press and hold the Reset button with a pen or paper clip.
2. Hold the reset button for about 5 or 6 seconds until the Status LED on the front panel blinks very quickly and then release.
3. Wait a few seconds for the AP to reboot using default settings.

A Factory Reset can also be performed through the web configuration interface. Follow these steps to perform a factory reset using the web configuration interface.

1. Log-in to the Wireless AP web configuration interface.
2. Click on Restore Default.
3. You will be asked if you want to restore to default settings. Click OK to restore settings to default configuration or click Cancel to discard any changes.

Technical Specifications

Standards:

IEEE 802.3 10BASE-T Ethernet

IEEE 802.3u 100BASE-TX Fast Ethernet

IEEE 802.11b

IEEE802.11a

Protocols Supported:

TCP

IP

IPX

DHCP Client

Management:

Web-Based

Ports:

LAN: 10BASE-T/100BASE-TX Fast Ethernet

Wireless AP Specifications

General Wireless Specifications:

IEEE 802.11b /11a Wireless LAN, Wi-Fi Compatible

Access Point Frequency Band:

5GHz (subject to local regulation)

2.4 ~ 2.4835 GHz (subject to local regulation)

Access Point Number of Channel:

11a: USA domain 8 (36,40,44,48,52,52,60,64)

11b:

USA & Canada: 11 (1- 11)

Most European: 13 (1-13)

France   :   4 (10-13)

Japan   :   14 (1-14)

Access Point Data Rate:

11a :

6,9,12,18,24,36,48,54 Mbps.   Turbo: 72 Mbps

11b:

11 Mbps

5.5 Mbps

2 Mbps

1 Mbps

Data encryption:

64/128/152 bit WEP

Power Specifications :

DC power supply

Input: DC 100-250   50-60 Hz 1A

Output: 5V DC 2A

Federal Communication Commission Interference 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 communications. 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 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: To assure continued compliance, (example - use only shielded interface cables when connecting to computer or peripheral devices). Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this 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 RF Radiation Exposure Statement:
This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled   environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.   This device must not be co-located or operating in conjunction with any other antenna or transmitter other than those contained within this device.
The UNII device applying frequency band 5.15-5.25 GHz is restricted to be indoor use only, comply with the rule of FCC15.407(e).

R&TTE Compliance Statement

This equipment complies with all the requirements of the DIRECTIVE 1999/5/EC OF THE EUROPEAN PARLIAMENT AND THE COUNCIL of 9 March 1999 on radio equipment and telecommunication terminal Equipment and the mutual recognition of their conformity (R&TTE).

The R&TTE Directive repeals and replaces in the directive 98/13/EEC (Telecommunications Terminal Equipment and Satellite Earth Station Equipment) As of April 8, 2000 .

Safety

This equipment is designed with the utmost care for the safety of those who install and use it. However, special attention must be paid to the dangers of electric shock and static electricity when working with electrical equipment. All guidelines of this manual and of the computer manufacturer must therefore be allowed at all times to ensure the safe use of the equipment.

EU Countries intended for use

The ETSI version of this device is intended for home and office use in Austria, Belgium, Denmark, Finland, France (with Frequency channel restrictions), Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

The ETSI version of this device is also authorized for use in EFTA member states Iceland, Liechtenstein, Norway and Switzerland.

EU Countries Not intended for use

None.

Potential restrictive use

France: Only channels 10,11,12, and13