802.11b/g Adjustable WiFi Signal Booster

HWBA54G

Wireless Access Point

&

HSB1 Signal Booster

User Manual

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LIMITED WARRANTY

LIMITED WARRANTY

Hawking Technology Co., Ltd guarantees that the Hawking HWBA54G (Wireless Access Point),HSB1(Signal Booster), and the RF Cable(HPP Cable) Three units will be sold as a kit to the market in the future

Hawking Technology guarantees that every HSB1 WiFi 802.11b/g Adjustable WiFi Signal Booster and HWBA54G are free from physical defects in material and workmanship under normal use for two (2) years from the date of purchase.

If the product proves defective during this two-year warranty period, call Hawking Customer Service in order to obtain a Return Authorization number. Warranty is for repair or replacement only. Hawking Technology does not issue any refunds. BE SURE TO HAVE YOUR PROOF OF PURCHASE. RETURN REQUESTS CAN NOT BE PROCESSED WITHOUT PROOF OF PURCHASE. When returning a product, mark the Return Authorization number clearly on the outside of the package and include your original proof of purchase.

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Warning Statement:

**Federal Communication
Commission Interference Statement
Federal Communications
Commission (FCC) Requirements,
Part 15**

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.
   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 Caution:

FCC RF Exposure Statement:
This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. 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. Unauthorized antenna, modification, or attachments could damage the transmitter and may violate FCC regulations.

Regulatory information/Disclaimers:

Any changes or modifications (including the antennas) made to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment.

Introduction

This product is an access point with a singal booster for IEEE 802.11g/b 2.4GHz wireless network. You can use this access point to build up a wireless LAN with better coverage area.

The Access Point supports WPA-PSK, WEP, ESSID and MAC address filter functions to consolidate the wireless network security. With ESSID authentication, WPA-PSK, 64/128-bit WEP encryption and MAC address filtering you can prevent unauthorized wireless stations from accessing your wireless network.

The Access Point's dipole antenna is detachable by connecting to a RP-SMA connector. By removing the dipole antenna from the Access Point and simply using a HPP cable that includes in the package to connect the Access Point to the Signal Booster, it significantly extends the coverage area to improve the overall network performance.

The Signal Booster offers 100/200/500mW selections. Users are free to select desired output power by adjusting the "mode" switch on the side of the Signal Booster unit. The output power is up to 25dBm when the 500mW output power is selected.

With the versatile of features, this product is the best choice for you to integrate your wireless and wired network seamlessly.

The Access Point includes the following items:

- One Access Point
- One Power Adapter
- One User' s Manual

The Signal Booster includes the following items:

- One Signal Booster
- One Power Adapter
- One Dipole Antenna
- One Connector Cable
- One Wall Mounting Kit
- One Quick Installation Guide

Access Point

- Complies with the IEEE 802.11g/b 2.4GHz specification.
- High data rate 54, 48, 36, 24, 18, 12, 11, 5.5, 2 and 1Mbps network speed.
- Seamlessly integrate wireless and wired Ethernet LAN networks.
- Auto rate fallback in case of obstacles or interferences.
- Provide 64/128-bit WEP Data Encryption function to protect the wireless data transmissions.
- Supports Web-based configuration.

Signal Booster

- Work with IEEE 802.11b/g wireless LAN devices.
- Stronger output power improves the link quality and coverage distance of WLAN devices significantly.
- 500/200/100mW output power changeable enables the booster to be used for various environments.
- Wall mountable.

Access Point

- Standards: IEEE 802.11g/b (Wireless), IEEE 802.3 (Wired)
- Data Rate: 54/48/36/24/18/12/11/5.5/2/1Mbps auto fallback
- Security: 64/128-bit WEP Data Encryption
- Frequency Band: 2.400~2.4835GHz (Industrial Scientific Medical Band)
- Antenna: External detachable dipole antenna (with RP-SMA connector)
- Connectors: 10/100Mbps RJ-45 x 1
- Power: 12VDC, 0.5A
- Output Power: 8-18 dBm max.
- LEDs: Power, LAN Link/Activity, Wireless Activity
- Dimension: 30(H) x 127(W) x 87(D) mm
- Temperature:
  - Operating: 32~131°F (0~55°C)
  - Storage: -4~158°F(-20~70°C)
- Humidity: 10-90% (Noncondensing)

802.11b/g Adjustable WiFi Signal Booster

- Standards: IEEE 802.11b/g
- Output Power: 23dBm ±2dBm
- Input Power: 8dBm (Min.) ~ 18dBm(Max.)
- Receiver Gain: >10dBm
- Antenna Connector: RP-SMA x 2
- Antenna: 2dBi Dipole Antenna
- Power: 12VDC, 1.25A

Front Panel

On the Access Point's front panel there are LED lights that inform you of the Access Point's current status. Below is an explanation of each LED.

LED	Color	Status	Description
Power	Green	Lit	Power is supplied.
		Off	No Power.
Wireless Activity	Green	Flash	Antenna is transmitting or receiving data.
		Off	Antenna is not transmitting or receiving data.
LAN Link/Activity	Green	On	A valid link is established.
		Flash	It is transmitting or receiving data.
		Off	No link is established.

Back Panel

Access Point's connection ports are located on the back panel. Below is the description of each connection port.
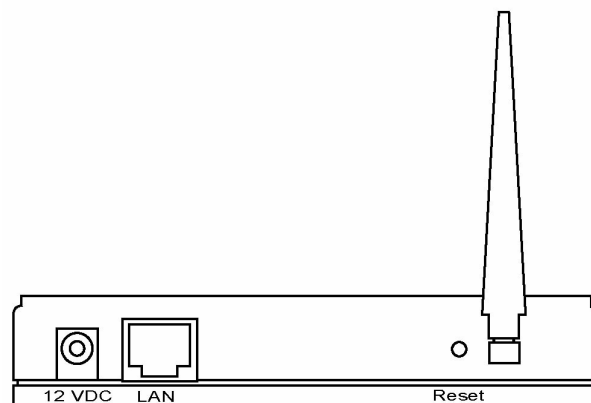
1 Antenna Connector
   This round connection is Reverse SMA connector that antennas with Reverse SMA connector can connect to the Access Point.

2 DC Adapter Port

Insert the power jack of the power adapter into this port.

3 LAN Port

The Access Point's LAN port is where you connect to your LAN's network devices.

4 Reset

The Reset button allows you to do one of two things.

1) If problems occur with your Access Point, press the reset button with a pencil tip (for less than 5 seconds) and the Access Point will re-boot itself, keeping your original configurations.

2) If problems persist or you experience extreme problems or you forgot your password, press the reset button for longer than 5 seconds and the Access Point will reset itself to the factory default settings (warning: your original configurations will be replaced with the factory default settings).

Install Access Point with Signal Booster

To connect the Access Point with the Signal Booster, please follow the ways described below.

1. Connect the Access Point to one side of the connector cable in the package.
2. Connect the other side of the connector cable to the signal booster.
3. Screw the dipole antenna in the package to the signal booster.
4. Power on the signal booster.
5. Adjust the output power range from the switch in the booster for the best signal strength.

1   2   3

❶Access Point
❷Connector Cable Reverse SMA to Reverse SMA
❸Signal Booster
❹Antenna
❺Power Adapter of the Signal Boostr

Wireless LAN Access Point Connection

1. **Locate an optimum location for the Wireless LAN Access Point.**
   The best location for your Access Point is usually at the center of your wireless network, with line of sight to all of your mobile stations.

2. **Connect the Wireless LAN Access Point to your router, hub or switch.**
   Connect one end of standard UTP cable to the Access Point's LAN Port and connect the other end of the cable to a switch, a router or a hub. The Access Point will then be connected to your existed wired LAN Network.

3. **Connect the DC Power Adapter to the Wireless LAN Access Point's Power Socket.**
   Only use the power adapter supplied with the Access Point. Using a different adapter may damage the product.

The Hardware Installation is completely also you can start to enjoy the wireless network environment.

Please follow below step to access the UI to configure the more function.

Wireless LAN Access Point Configuration
Getting Started

This Access Point provides web-based configuration tool allowing you to configure from wired or wireless stations. Follow the instructions below to get started configuration.

From Wired Station

1. Make sure your wired station is in the same subnet with the Access Point. The default IP Address and Sub Mask of the Access Point is:
   Default IP Address: 192.168.2.1
   Default Subnet: 255.255.255.0

   Configure your PC to be in the same subnet with the Access Point.
   1a) Windows 95/98/Me
   1. Click the *Start* button and select *Settings*, then click *Control Panel*. The *Control Panel* window will appear.
   2. Double-click *Network* icon. The *Network* window will appear.
   3. Check your list of *Network Components*. If TCP/IP is not installed, click the *Add* button to install it now. If TCP/IP is installed, go to **step 6**.
   4. In the *Network Component Type* dialog box, select *Protocol* and click *Add* button.
   5. In the *Select Network Protocol* dialog box, select *Microsoft and TCP/IP* and then click the *OK* button to start installing the TCP/IP protocol. You may need your Windows CD to complete the installation.
   6. After installing TCP/IP, go back to the *Network* dialog box. Select *TCP/IP* from the list of *Network Components* and then click the *Properties* button.

7. Check each of the tabs and verify the following settings:

　　h**Bindings**: Check *Client for Microsoft Networks* and *File and printer sharing for Microsoft Networks*.

　　h**Gateway**: All fields are blank.

　　h**DNS Configuration**: Select *Disable DNS.*

　　h**WINS Configuration**: Select *Disable WINS Resolution.*

　　h**IP Address**: Select *Specify an IP Address.* Specify the IP Address and Subnet Mask as following example.

　　　1　IP Address: 192.168.2.3 (any IP address within 192.168.2.2~192.168.2.254 is available, **do not setup 192.168.2.1**)

　　　2　Subnet Mask: 255.255.255.0

8. Reboot the PC. Your PC will now have the IP Address you specified.

1b) Windows 2000

1. Click the *Start* button and select *Settings*, then click *Control Panel*. The *Control Panel* window will appear.

2. Double-click *Network and Dial-up Connections* icon. In the *Network and Dial-up Connection* window, double-click *Local Area Connection* icon. The *Local Area Connection* window will appear.

3. In the *Local Area Connection* window, click the *Properties* button.

4. Check your list of *Network Components*. You should see *Internet Protocol [TCP/IP]* on your list. Select it and click the *Properties* button.

5. In the *Internet Protocol (TCP/IP) Properties* window, select *Use the following IP address* and specify the IP Address and Subnet mask as following.

　　IP Address: 192.168.2.3 (any IP address within 192.168.2.2~192.168.2.254 is available, **do not setup 192.168.2.1**)

　　Subnet Mask: 255.255.255.0

6. Click *OK* to confirm the setting. Your PC will now have the IP Address you specified.

1c) Windows NT

1. Click the *Start* button and select *Settings*, then click *Control Panel*. The *Control Panel* window will appear.

2. Double-click *Network* icon. The *Network* window will appear. Select the *Protocol* tab from the *Network* window.

3. Check if the *TCP/IP Protocol* is on your list of *Network Protocols*. If *TCP/IP* is not installed, click the *Add* button to install it now. If *TCP/IP* is installed, go to **step 5**.

4. In the Select *Network Protocol* window, select the *TCP/IP Protocol* and click the *Ok* button to start installing the *TCP/IP protocol*. You may need your Windows CD to complete the installation.

5. After you install *TCP/IP*, go back to the *Network* window. Select *TCP/IP* from the list of *Network Protocols* and then click the *Properties* button.

6. Check each of the tabs and verify the following settings:

   h**IP Address:** Select *Specify an IP address.* Specify the IP Address and Subnet Mask as following example.
   3   IP Address: 192.168.2.3 (any IP address within 192.168.2.2~192.168.2.254 is available, **do not setup 192.168.2.1**)
   4   Subnet Mask: 255.255.255.0
   - **DNS:** Let all fields are blank.
   - **WINS:** Let all fields are blank.
   - **Routing:** Let all fields are blank.

7. Click *OK* to confirm the setting. Your PC will now have the IP Address you specified.

2. Enter **192.168.2.1** from Web Browser to get into the Access Point's configuration tool.

3. A screen will be popped up and request you to enter user name and password. The default user name and password is as follows.
   User Name: Admin
   Password: 1234
   Enter the default user name and password, then press **OK** button directly.

4. You can start configuring the Access Point.

From Wireless Station
1. Make sure your wireless station is in the same subnet with the Access Point.
   Please refer to the **step 1** above for configuring the IP Address and Sub
   Mask of the wireless station.

2. Connect to the Access Point.
   The Access Point's ESSID is "**default**" and the WEP Encryption function
   is disabled. Make sure your wireless station is using the same ESSID as the
   Access Point and associate your wireless station to the Access Point.
3. Enter **192.168.2.1** from Web Browser to get into the Access Point's
   configuration tool.
4. Enter the user name and password and then press **OK** button and you are
   available to configure the Access Point now.

This Access Point supports Client, AP, Repeater and Bridge modes. "Client Mode" is used to let a network device with only wired Ethernet function to have wireless LAN communication capability. It provides both Ad Hoc and Infrastructure modes for the "Station Mode". With "Station-Ad Hoc mode", it can let your network device join a wireless LAN with peer-to-peer communication. With "Station-Infrastructure mode", it can let your network device join a wireless LAN through an access point. "AP Mode" provides pure access point function. The simplest way to build up a wireless LAN is to use "AP Mode". If you want an access point to bridge wired Ethernet network and provide connection service for other wireless station at the same time, you have to set the access point to "Repeater mode". Simply speaking, "Repeater mode" function is the combination of "AP mode" and "PMP mode". "AP Bridge Mode" provides the function to bridge more than 2 wired Ethernet networks together by wireless LAN. You can use two access points with "P2P mode" to bridge two wired Ethernet networks together. If you want to bridge more than two wired Ethernet networks together, you have to use enough access points with "PMP mode". An access point with "P2P mode" or "PMP mode" can only be used to bridge wired Ethernet networks together. It can't accept connection from other wireless station at the same time.
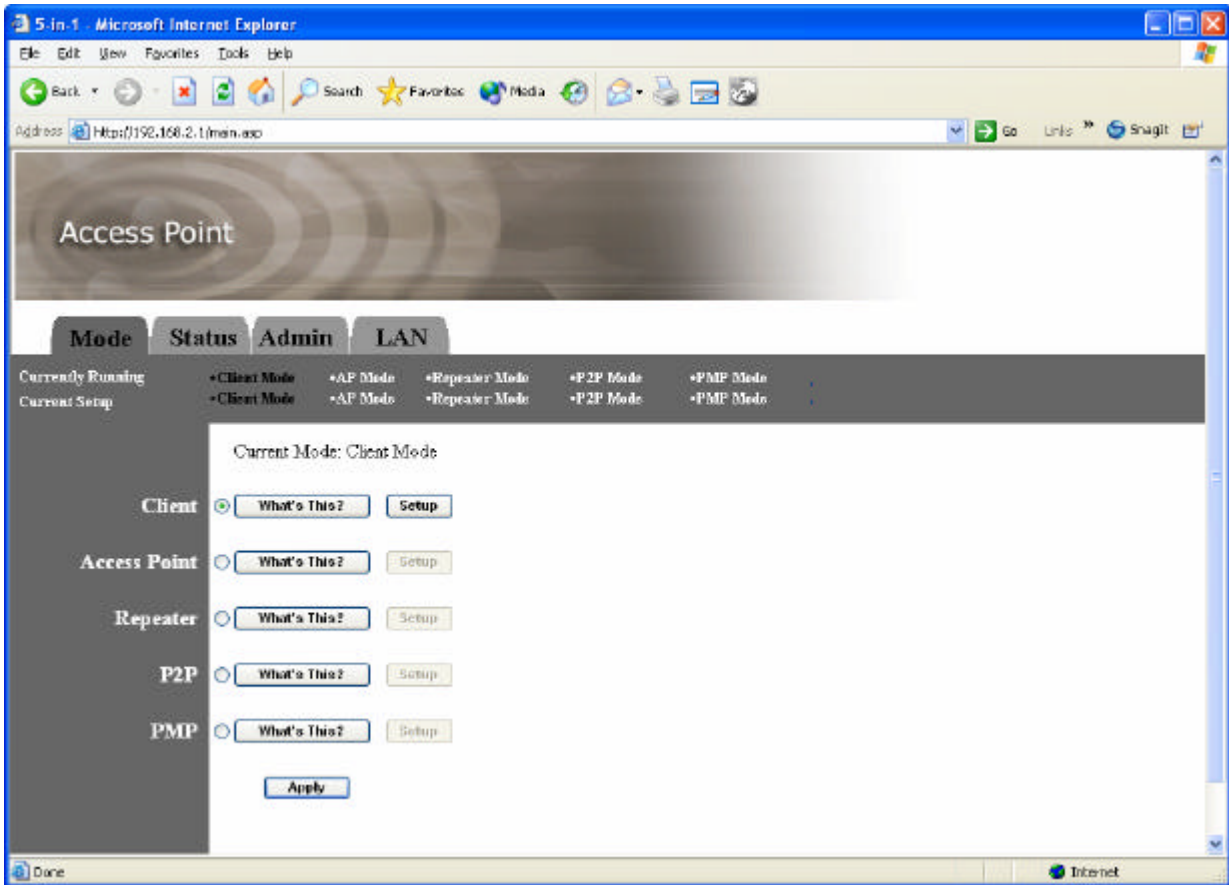
Client Mode configuration

It is used to let a network device with only wired Ethernet function to have wireless LAN communication capability. It provides both Ad Hoc and Infrastructure modes for the "Client Mode". With "Ad Hoc mode", it can let your network device join a wireless LAN with peer-to-peer communication. With "Infrastructure mode", it can let your network device join a wireless LAN through an access point.
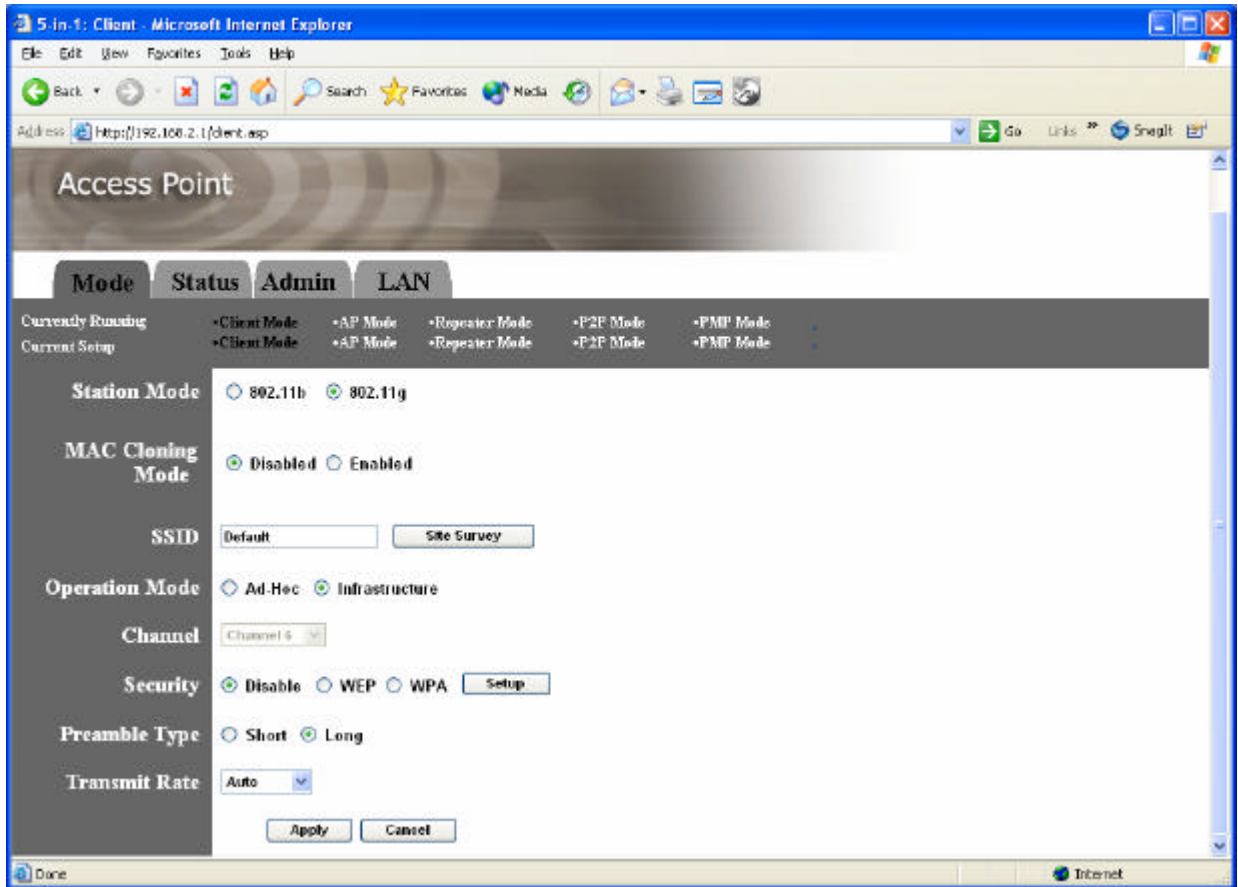
Parameter	Description
Station Mode	802.11b mode: It allows to select the transmit rate up to 11Mbps 802.11g mode: It allows to select the transmit rate up to 54Mbps
MAC Cloning Mode	Disabled: It will use it's own MAC address to access the wireless LAN. Enabled: It will use PC's MAC address to access the wireless LAN.
SSID	The SSID (up to 32 printable ASCII characters) is the unique name identified in a WLAN. The ID prevents the unintentional merging of two co-located WLANs. Please make sure that the SSID of all stations in the same WLAN network are the same. The default SSID is "**default**".
Site Survey	Click "Site Survey" button, then a "Wireless Site Survey Table" will pop up. It will list all available access points near by. You can select one access point in the table and it will join wireless LAN through this access point.
Operation Mode	**AD-Hoc:** It can let your network device join a wireless LAN with peer-to-

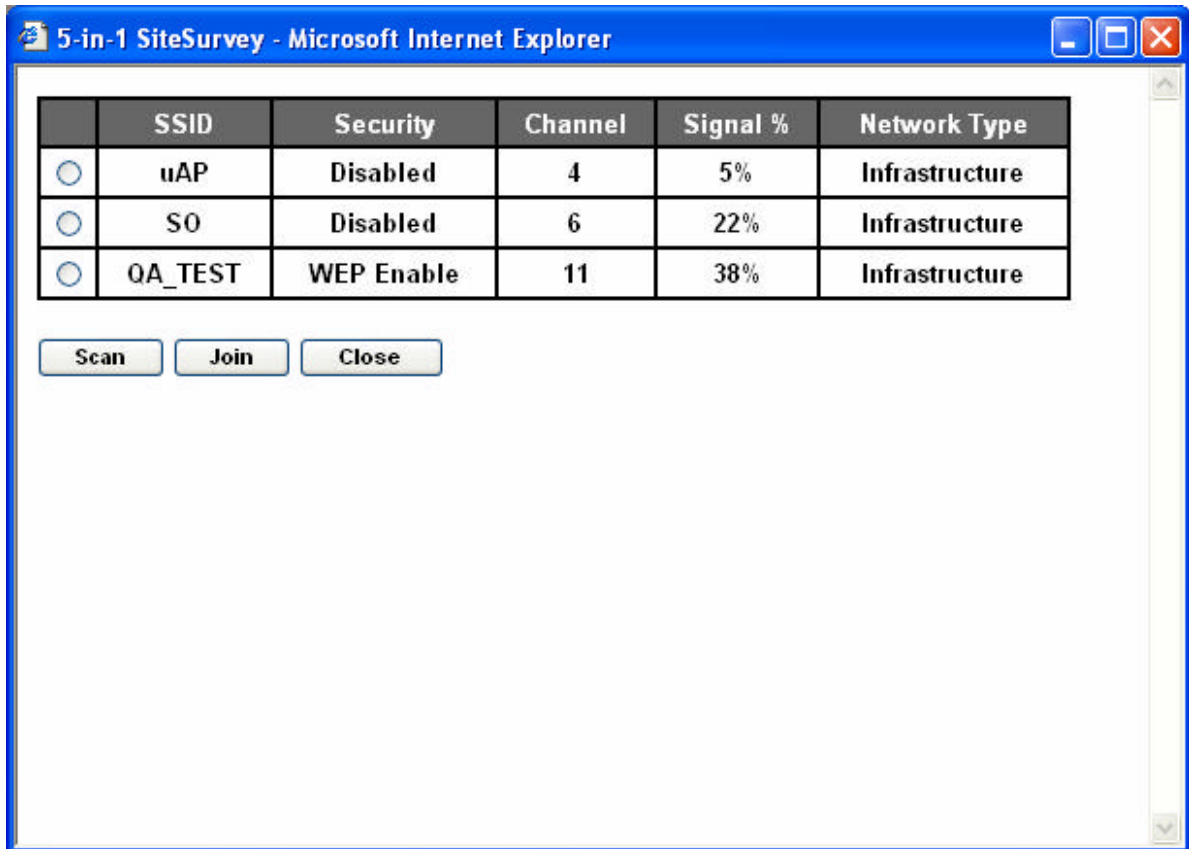|	
	peer communication.
	Infrastructure: It can let your network device join a wireless LAN through an access point.
Channel	Select the appropriate channel from the list provided to correspond with your network settings. Channels differ from country to country. Channel 1-11 are available in North America.
Security	**Disable:** Disable the security function.
	WEP: WEP is an authentication algorithm, which protects authorized Wireless LAN users against eavesdropping. The Authentication type and WEP key of wireless stations must be the same with the Access Point. This Access Point supports 64/128 -bit WEP Encryption function. With this function, your data will be transmitted over the wireless network securely. # You can refer to the detail setting from chapter 3.2.6.
	WPA: You can use a pre-shared key to authenticate wireless stations and encrypt data during communication. When you enabled WPA mode, you can not use WEP encryption. # You can refer to the detail setting from chapter 3.2.7.
Preamble Type	Preamble type defines the length of preamble block in the frames during the wireless communication.
	Auto select: It will auto switch to the more suitable method.
	Short: It is suitable for high traffic wireless network
	Long: It can provide more reliable communication
Transmit Rate	When you enable the station mode selection to "802.11b" and it allows you to select the speed of 1-11Mbps. When you enable the station mode selection to "802.11g" and it allows you to select the speed of 1-54Mbps.

Click **Apply** button at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the Access Point.

Site Survey table:

When this access point is in "Client-Infrastructure mode", it should associate with an access point and connect to your wireless LAN through the associated
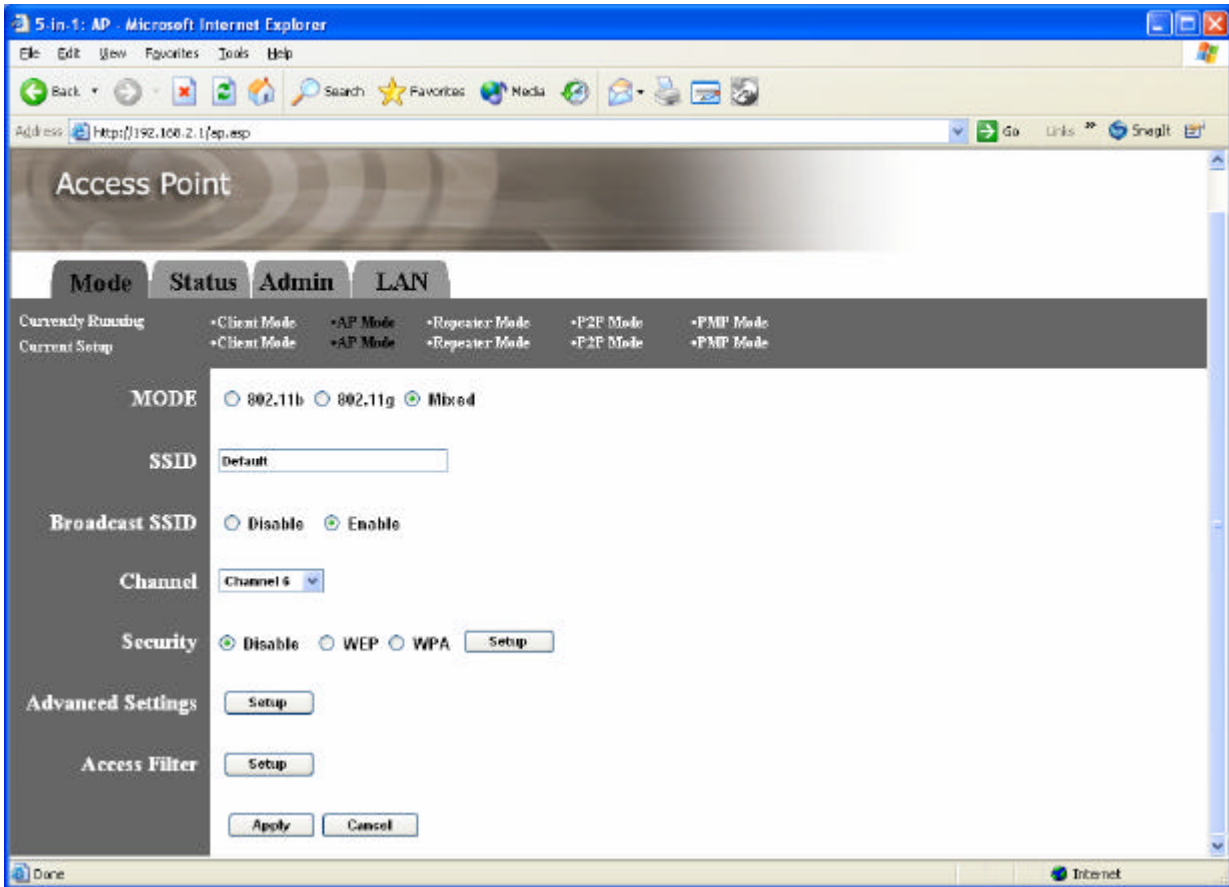
access point. "Wireless Site Survey" searches for all available access points near by. You can select one access point listed in this table.

AP Mode configuration

This Access Point supports AP modes. "AP Mode" provides pure access point function. The simplest way to build up a wireless LAN is to use "AP Mode".
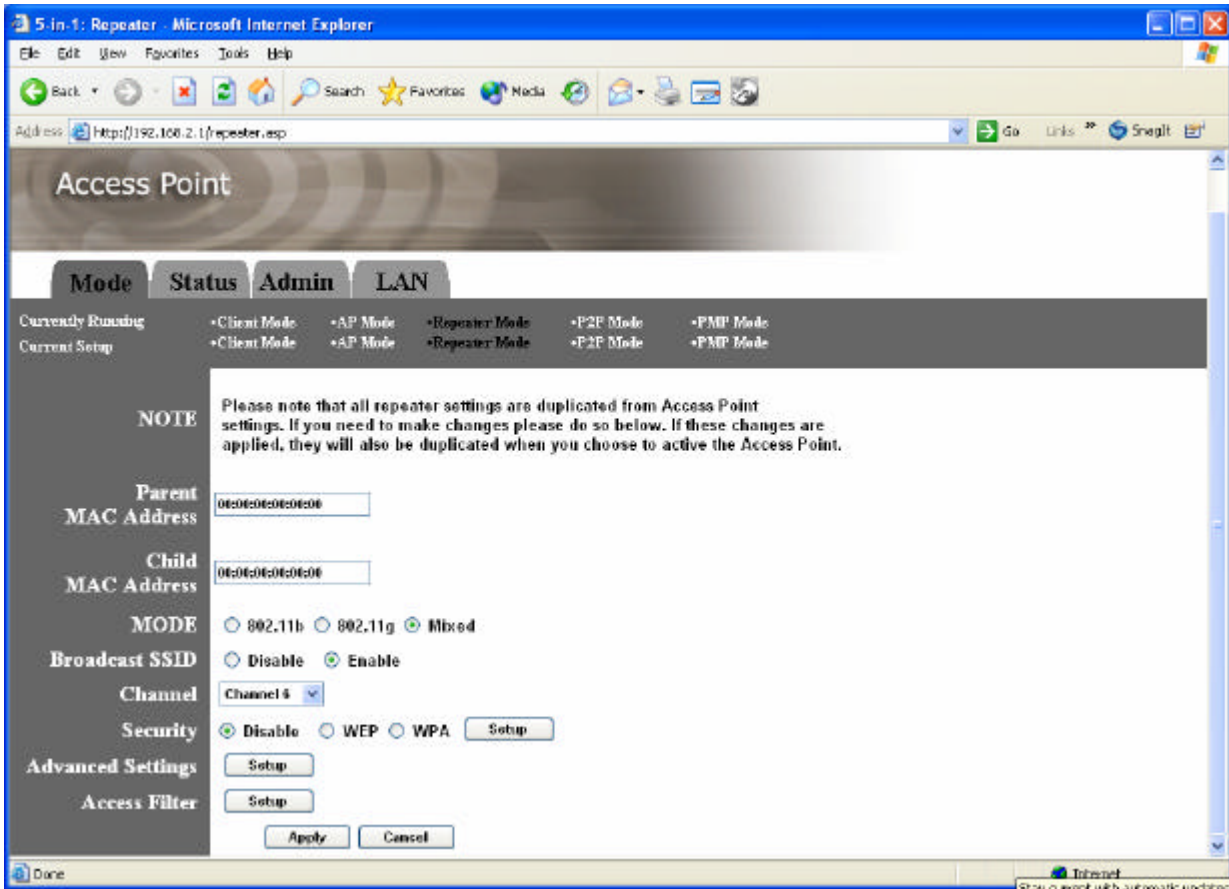
Parameter	Description
Mode	**802.11b mode:** It allows to select the transmit rate up to 11Mbps **802.11g mode:** It allows to select the transmit rate up to 54Mbps **Mixed mode:** It provides best performance for 11g transmission when you enable the AP mode selection to "Mixed mode".
SSID	The SSID (up to 32 printable ASCII characters) is the unique name identified in a WLAN. The ID prevents the unintentional merging of two co-located WLANs. Please make sure that the SSID of all stations in the same WLAN network are the same. The default SSID is "**default**".
Broadcast SSID	It will respond to Broadcast SSID requests. If you enable this function, every wireless station located within the coverage of this access point can discover this access point easily. If you are building a public wireless network, enabling this feature is recommended. Disabling "Response to Broadcast ESSID requests" can provide better security.

Channel	Select the appropriate channel from the list provided to correspond with your network settings. Channels differ from country to country. Channel 1-11 are available in North America.
Security	**Disable:** Disable the security function. **WEP:** WEP is an authentication algorithm, which protects authorized Wireless LAN users against eavesdropping. The Authentication type and WEP key of wireless stations must be the same with the Access Point. This Access Point supports 64/128-bit WEP Encryption function. With this function, your data will be transmitted over the wireless network securely. # You can refer to the detail setting from chapter 3.2.6. **WPA:** You can use a pre-shared key to authenticate wireless stations and encrypt data during communication. When you enabled WPA mode, you can not use WEP encryption. # You can refer to the detail setting from chapter 3.2.7.
Advance setting	It provides more powerful features for you to configuring. # You can refer to the detail setting from chapter 3.2.8.
Access Filter	This Access Point allows you to provide a Filter List of MAC addresses that are allowed associating with this AP. # You can refer to the detail setting from chapter 3.2.9.

Click **Apply** button at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the Access Point.

Repeater Mode Configuration

If you want an access point to bridge wired Ethernet network and provide connection service for other wireless station at the same time, you have to set the access point to "Repeater mode". Simply speaking, "Repeater mode" function is the combination of "AP mode" and "PMP mode".
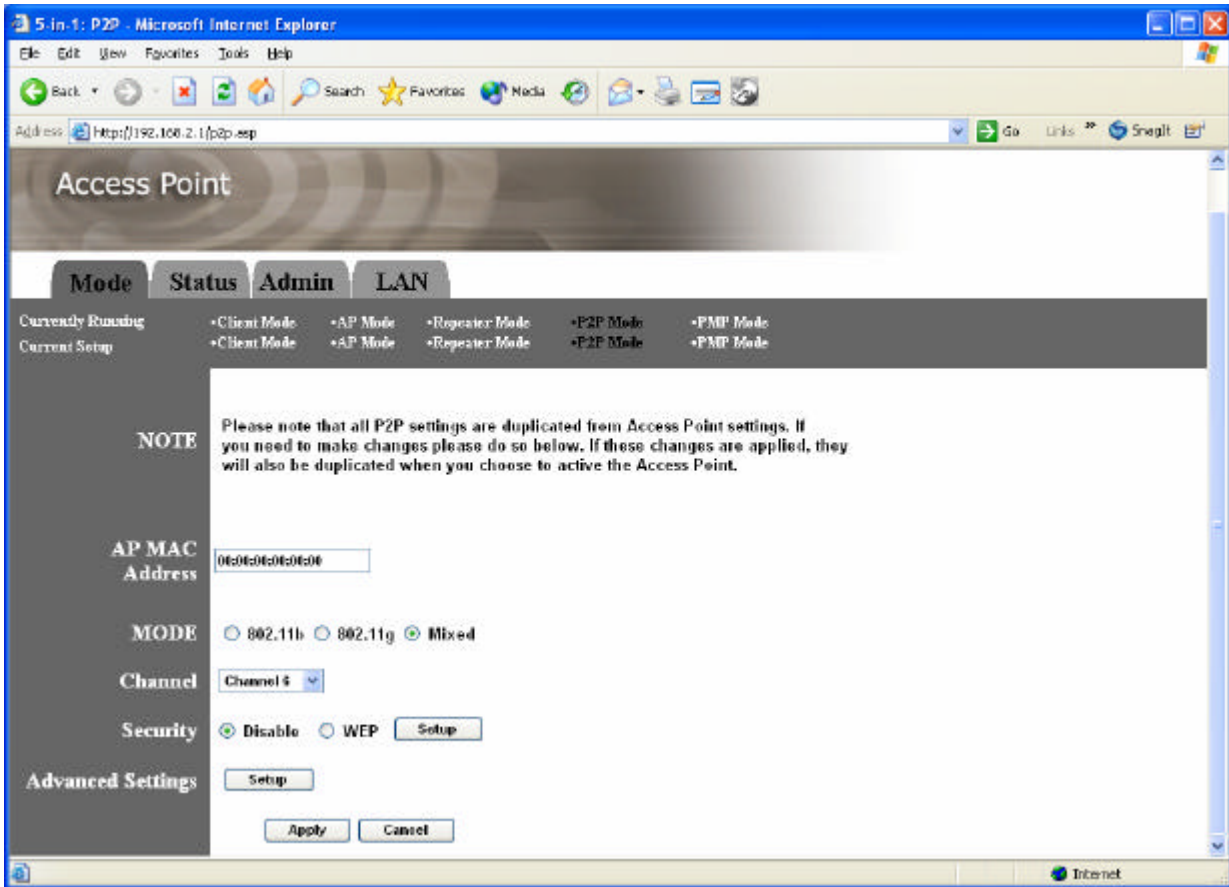
Parameter	Description
Parent MAC Address	You have to enter the MAC addresses of other access points that join the bridging work.
Child MAC Address	You have to enter the MAC addresses of other access points that join the bridging work.
Mode	**802.11b mode:** It allows to select the transmit rate up to 11Mbps **802.11g mode:** It allows to select the transmit rate up to 54Mbps **Mixed mode:** It provides best performance for 11g transmission when you enable the AP mode selection to "Mixed mode".
Broadcast SSID	It will respond to Broadcast SSID requests. If you enable this function, every wireless station located within the coverage of this access point can discover this access point easily. If you are building a public wireless network, enabling this feature is recommended. Disabling "Response to Broadcast ESSID requests" can provide better security.

Channel	Select the appropriate channel from the list provided to correspond with your network settings. Channels differ from country to country. Channel 1-11 are available in North America.
Security	**Disable:** Disable the security function. **WEP:** WEP is an authentication algorithm, which protects authorized Wireless LAN users against eavesdropping. The Authentication type and WEP key of wireless stations must be the same with the Access Point. This Access Point supports 64/128-bit WEP Encryption function. With this function, your data will be transmitted over the wireless network securely. # You can refer to the detail setting from chapter 3.2.6. **WPA:** You can use a pre-shared key to authenticate wireless stations and encrypt data during communication. When you enabled WPA mode, you can not use WEP encryption. # You can refer to the detail setting from chapter 3.2.7.
Advance setting	It provides more powerful features for you to configuring. # You can refer to the detail setting from chapter 3.2.8.
Access Filter	This Access Point allows you to provide a Filter List of MAC addresses that are allowed associating with this AP. # You can refer to the detail setting from chapter 3.2.9.

Click **Apply** button at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the Access Point.

P2P Mode configuration

This function provides to bridge more than 2 wired Ethernet networks together by wireless LAN. You can use two access points with "P2P mode" to bridge two wired Ethernet networks together.

Parameter	Description
AP MAC Address	You have to enter the MAC addresses of other access points that join the bridging work.
Mode	**802.11b mode:** It allows to select the transmit rate up to 11Mbps **802.11g mode:** It allows to select the transmit rate up to 54Mbps **Mixed mode:** It provides best performance for 11g transmission when you enable the AP mode selection to "Mixed mode".
Channel	Select the appropriate channel from the list provided to correspond with your network settings. Channels differ from country to country. Channel 1-11 are available in North America.
Security	**Disable**: Disable the security function. **WEP**: WEP is an authentication algorithm, which protects authorized Wireless LAN users against eavesdropping. The Authentication type and WEP key of wireless stations must be the same with the Access Point.

This Access Point supports 64/128-bit WEP Encryption function. With this function, your data will be transmitted over the wireless network securely.

You can refer to the detail setting from chapter 3.2.6.
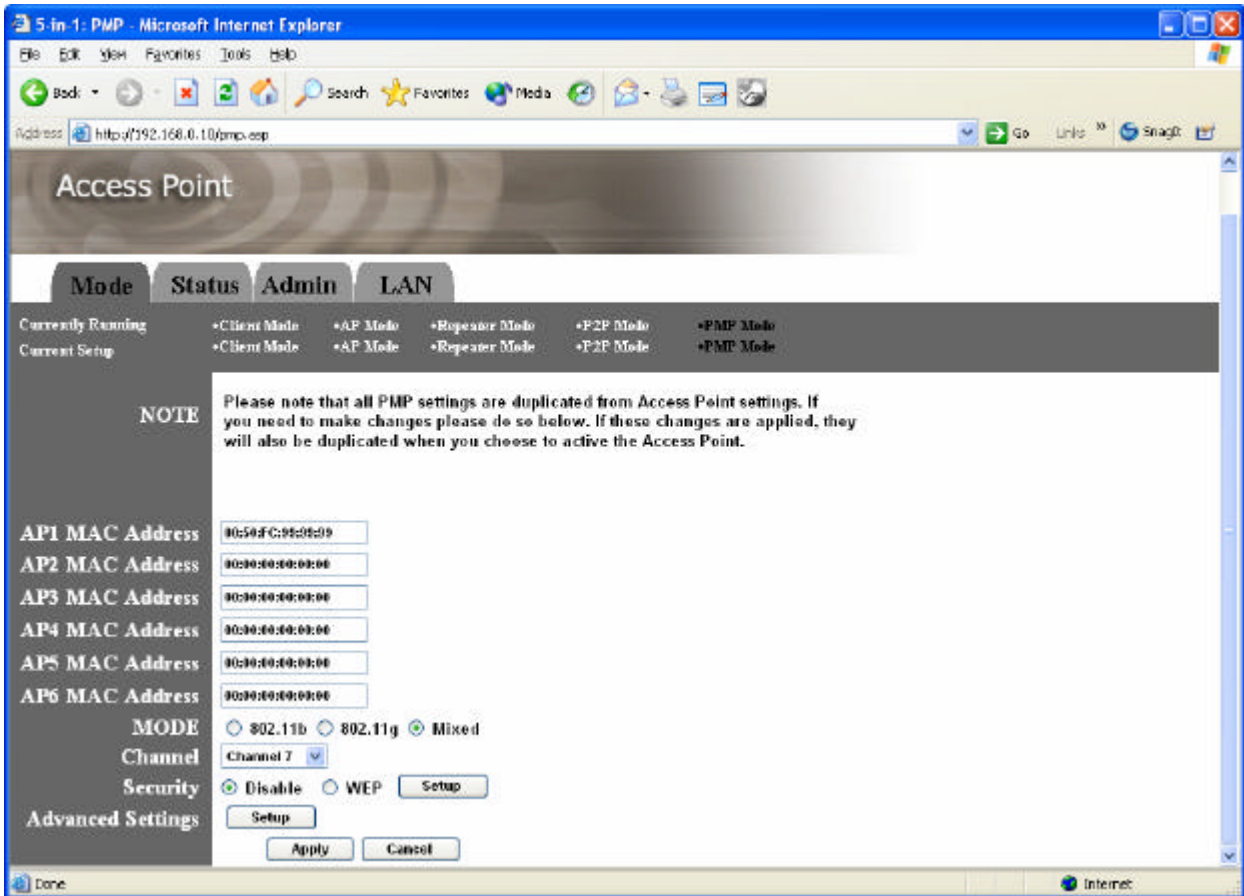
Advance setting   It provides more powerful features for you to configuring.

You can refer to the detail setting from chapter 3.2.8.

Click **Apply** button at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the Access Point.

PMP Mode Configuration

This function provides to bridge more than 2 wired Ethernet networks together by wireless LAN. You can use two access points with "P2P mode" to bridge two wired Ethernet networks together.

Parameter	Description
AP MAC Address	If you want to bridge more than one wired Ethernet networks together with wireless LAN, you have to enter the MAC addresses of other access points that join the bridging work.
Mode	**802.11b mode:** It allows to select the transmit rate up to 11Mbps **802.11g mode:** It allows to select the transmit rate up to 54Mbps **Mixed mode:** It provides best performance for 11g transmission when you enable the AP mode selection to "Mixed mode".
Channel	Select the appropriate channel from the list provided to correspond with your network settings. Channels differ from country to country. Channel 1-11 are available in North America.
Security	**Disable:** Disable the security function. **WEP:** WEP is an authentication algorithm, which protects authorized Wireless LAN users against eavesdropping. The Authentication type and

WEP key of wireless stations must be the same with the Access Point.
This Access Point supports 64/128-bit WEP Encryption function. With this function, your data will be transmitted over the wireless network securely.
You can refer to the detail setting from chapter 3.2.6.

Advance setting   It provides more powerful features for you to configuring.
You can refer to the detail setting from chapter 3.2.8.

Click **Apply** button at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the Access Point.

WEP Setting

Parameter	Description
WEP Length	**WEP-64:** input 10-digit Hex values (in the "A-F", "a-f" and "0-9" range) or 5-digit ASCII character as the encryption keys. **WEP-128:** input 26-digit Hex values (in the "A-F", "a-f" and "0-9" range) or 13-digit ASCII characters as the encryption keys.
Mode	**HEX:** input Hex values (in the "A-F", "a-f" and "0-9" range) **ASCII:** input alphanumeric format.
Passphrase	Enter passphrase and click "Generate", then the access point will automatically generate WEP keys by the passphrase for you.
Key 1 - Key 4	To entry 10 Hex digits for 64 bit key, 26 Hex digits for 128 bit key.
Default TX Key	Select the WEP key used to encrypt data transmitted in the wireless network.

Click **Apply** button at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the Access Point.
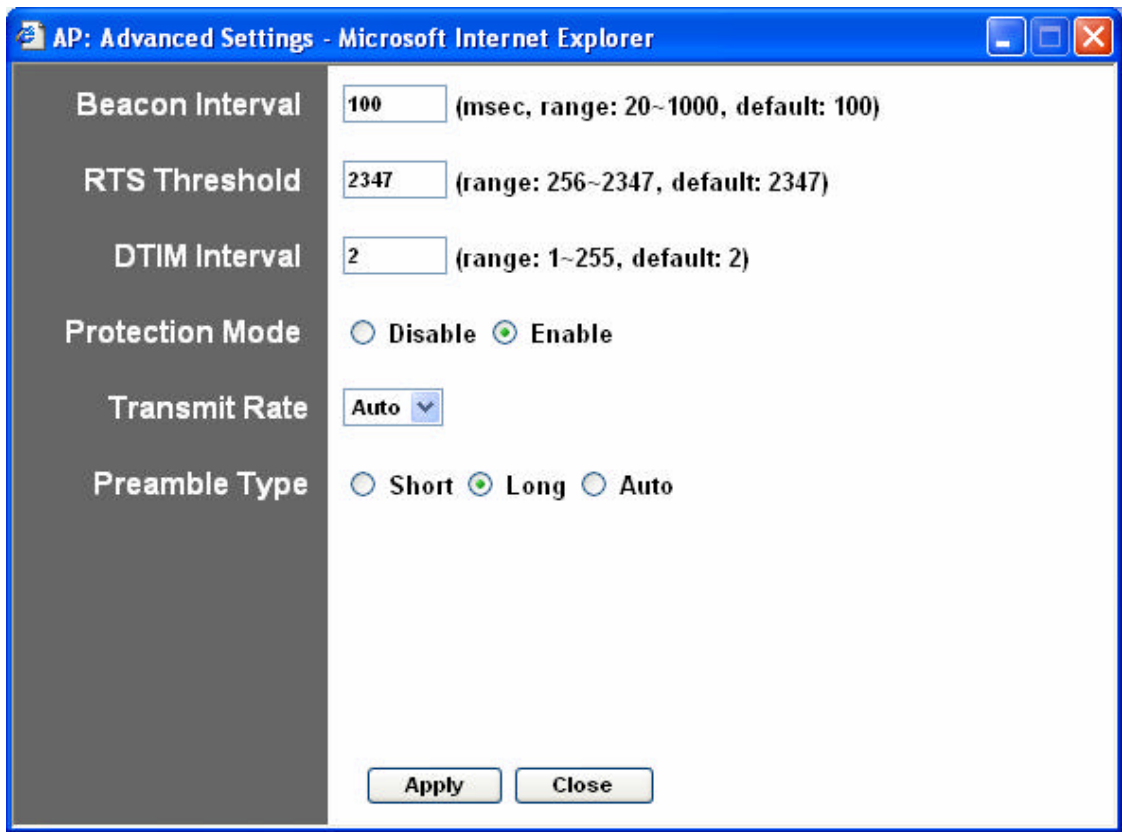
WPA Setting
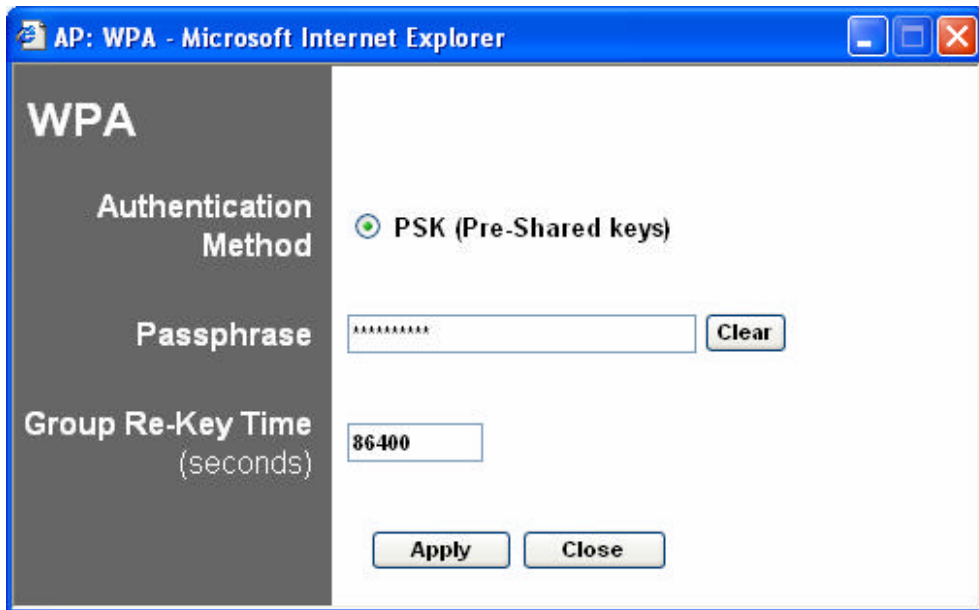
Parameter	Description
Authentication Type	The Pre-shared key is used to authenticate and encrypt data transmitted in the wireless network.
Passphrase	To entry at least 8 characters pass phrase as the pre-shared keys.
Group Re-Key Time (second)	It will auto re-gererate the Key after the defult time (86400) has passed, or you can change the default time by yourself.

Click **Apply** button at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the Access Point.
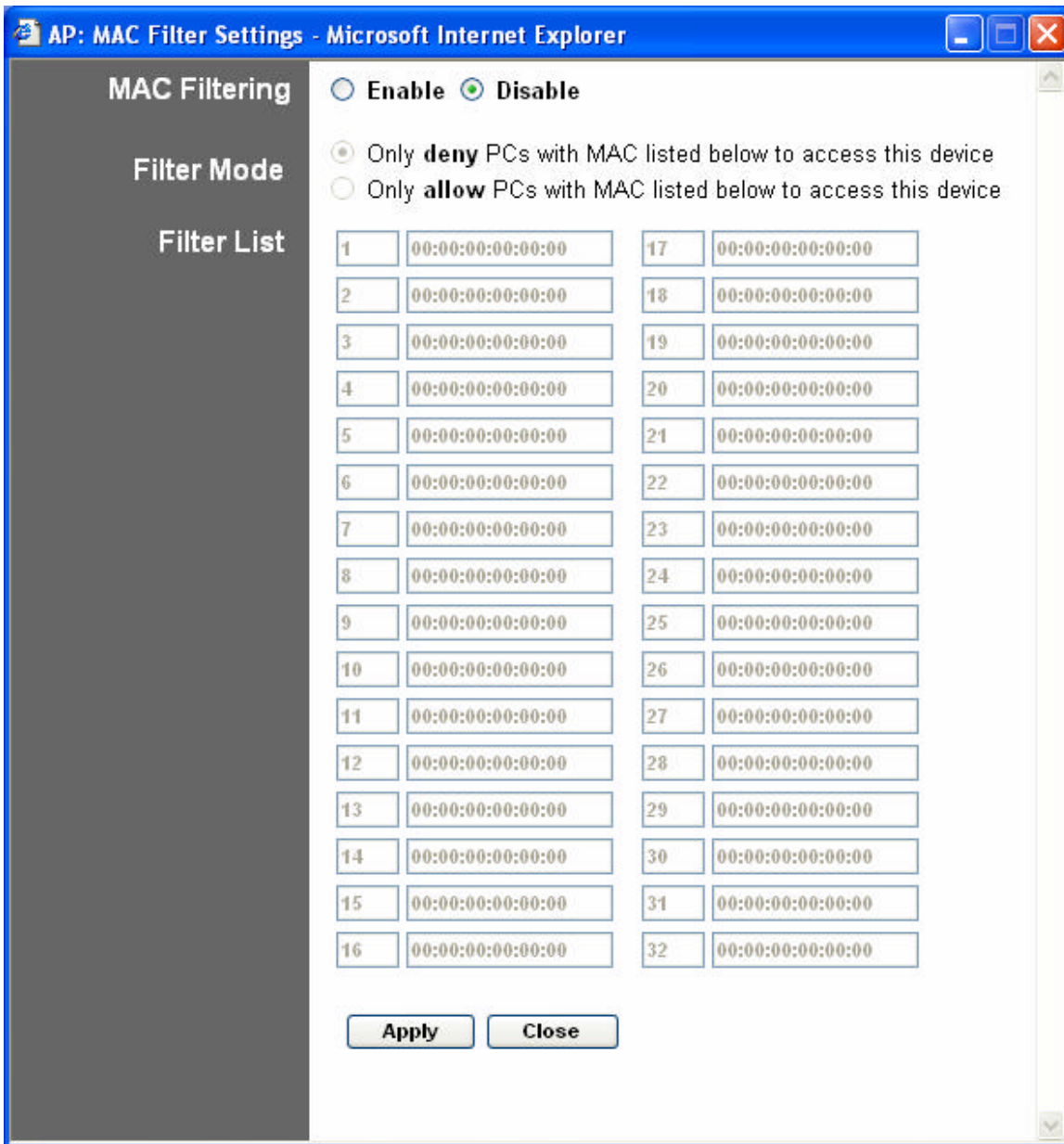
Advanced Setting

Parameter	Description
Beacon Interval (20-1000)	The period of time that this access point broadcast a beacon. Beacon is used to synchronize the wireless network.
RTS Threshold (256-2432)	When the packet size is smaller the RTS threshold, the access point will not use the RTS/CTS mechanism to send this packet.
DTIM Period (1-255)	This is the interval of the Delivery Traffic Indication Message (DTIM). A DTIM field is a countdown field informing stations of the next window for listening to broadcast and multicast messages. When the Access Point has buffered broadcast or multicast messages for associated stations, it sends the next DTIM with a DTIM Interval value. Stations for the Access Point hear the beacons and awaken to receive the broadcast and

	multicast messages.
Protection Mode	It provides best performance for 11g transmission when you enable it.
Transmit Rate	When you enable the station mode selection to "802.11b" and it allows you to select the speed of 1-11Mbps. When you enable the station mode selection to "802.11g" and it allows you to select the speed of 1-54Mbps.
Preamble Type	Preamble type defines the length of preamble block in the frames during the wireless communication.
	Auto select: It will auto switch to the more suitable method.
	Short: It is suitable for high traffic wireless network
	Long: It can provide more reliable communication

Click **Apply** button at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the Access Point.

Access Filter

This Access Point allows you to provide a Filter List of MAC addresses that are allowed/denied associating with this AP.

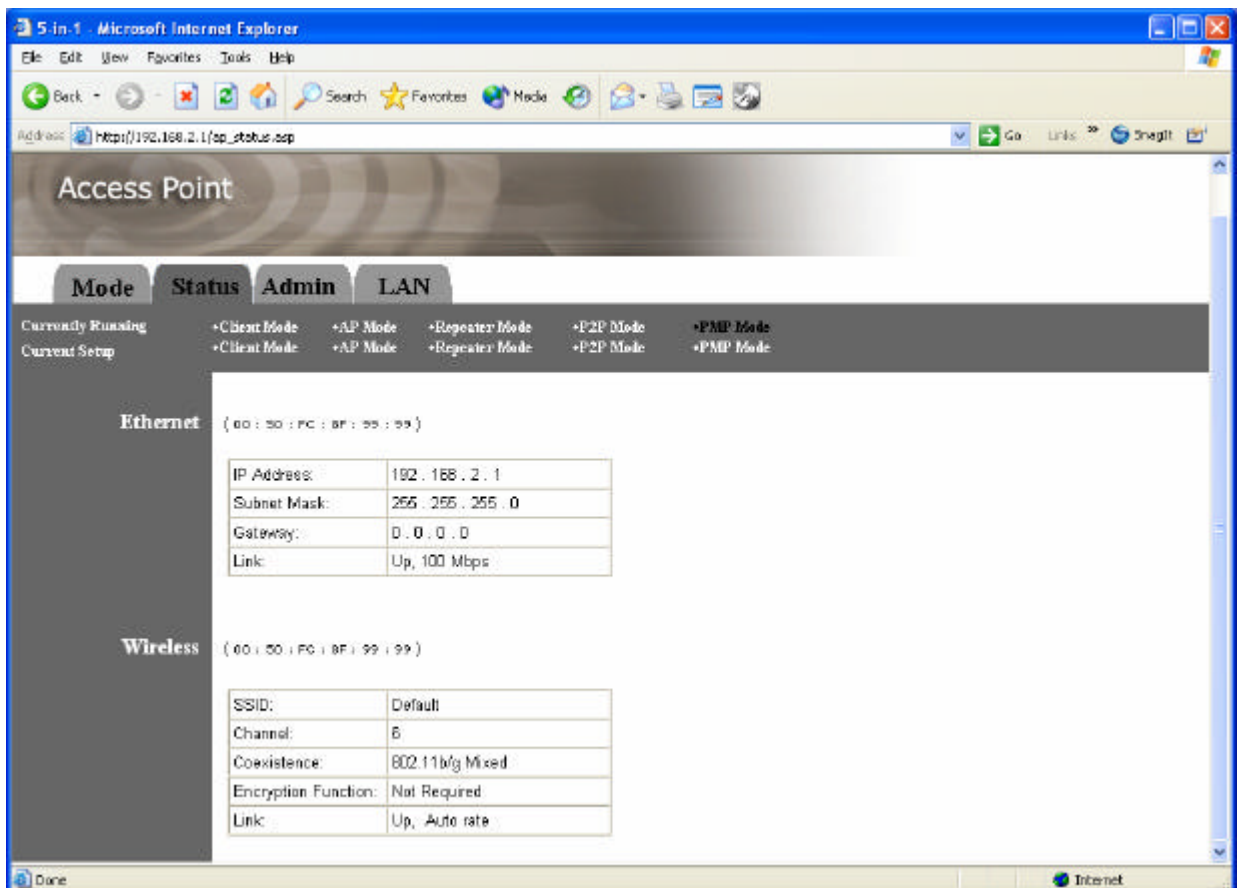| Parameter	Description
MAC Filtering	You can enable or disable the MAC Filtering function.
Filter Mode	If you select "Only deny PCs with MAC listed below to access this device", then all the PCs in the list will be denied to access and all other PCs will be allowed to access. If you select "Only allow PCs with MAC listed below to access this device", then all PCs in the list will be allowed

| | to access but all other PCs will be denied to access. |
| Filter List | Enter the MAC address of PC that will be managed by the MAC Filtering rule. |

Click **Apply** button at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the Access Point.

Status Setup

Parameter	Description
Ethernet	It shows the default IP address, Subnet Mask, Gateway and Link status information.
Wireless	It shows the current Wireless information.

Admin Setup
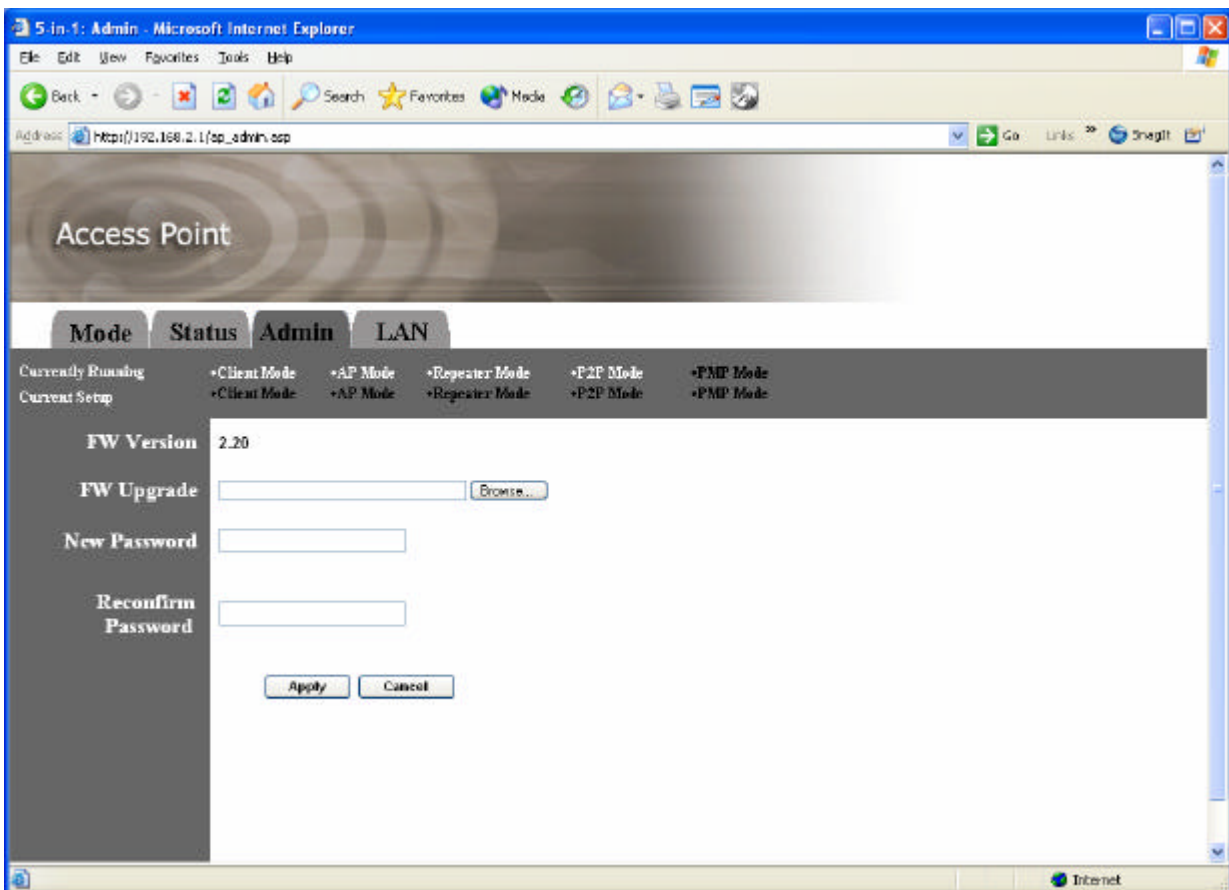
Parameter	Description

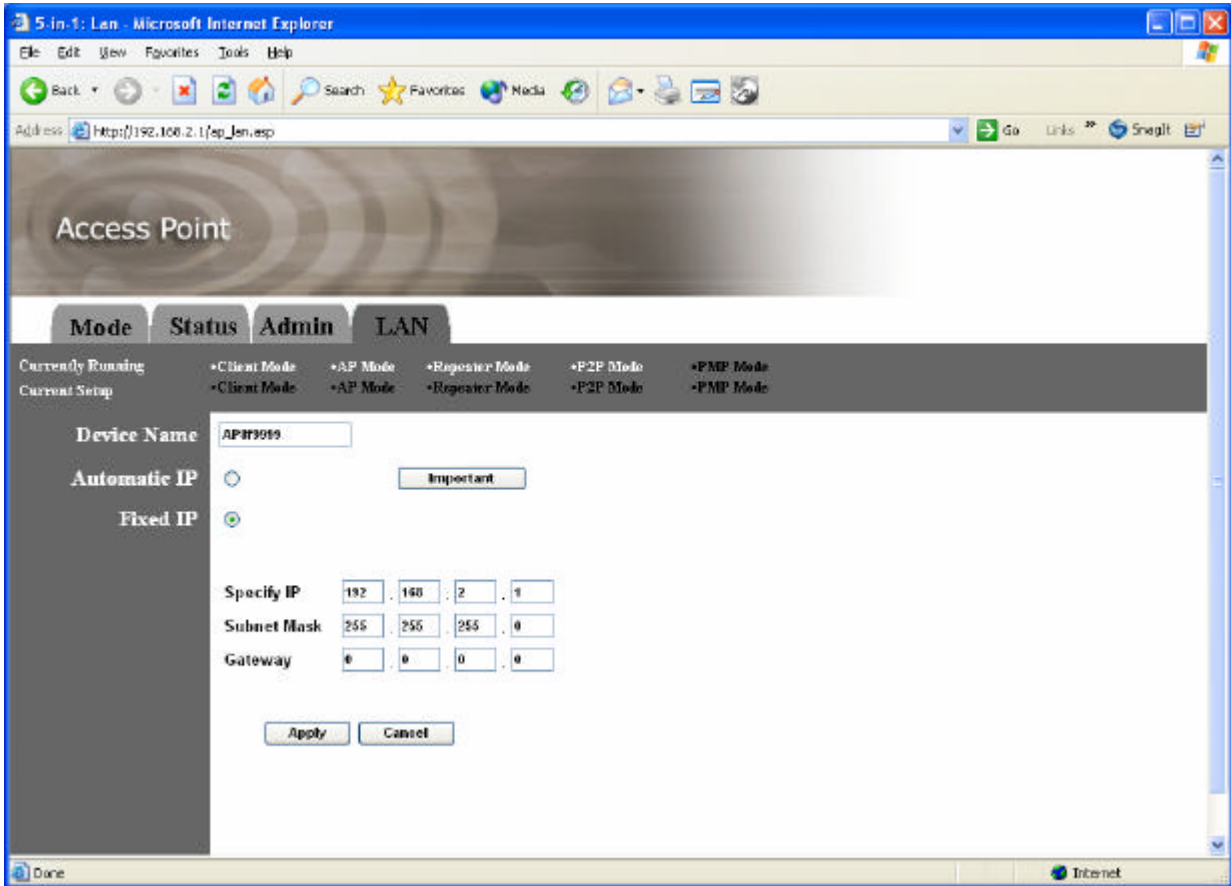|	
FW Version	It shows current FW version.
FW Upgrade	This tool allows you to upgrade the Access Point's system firmware. To upgrade the firmware of your Access Point, you need to download the firmware file to your local hard disk, and enter that file name and path in the appropriate field on this page. You can also use the **Browse** button to find the firmware file on your PC. Please reset the Access Point when the upgrade process is complete.
New Password	Enter the password (up to 32-digit alphanumeric string) you want to login to the Access Point. Note that the password is case-sensitive.
Reconfirm Password	Reconfirm the password (up to 32-digit alphanumeric string) you want to login to the Access Point. Note that the password is case-sensitive.

Click **Apply** button at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the Access Point.

LAN Setup

Parameter	Description
Device Name	It shows current FW version.
Automatic IP	Selecting this option is not advised unless you have direct access to the device that provides the IP address.
Fixed IP	Specify IP: Designate the Access Point' s IP Address. This IP Address should be unique in your network. The default IP Address is **192.168.2.1**. Subnet Mask: Specify a Subnet Mask for your LAN segment. Gateway: Specify the default gateway IP of this Access Point.

Click **Apply** button at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the Access Point.

This chapter provides solutions to problems usually encountered during the installation and operation of the Access Point.

1. How to manually find your PC's IP and MAC Address?

   1) In Windows, open the Command Prompt program

   2) Type **Ipconfig /all** and **Enter**

      1   Your PC's IP address is the one entitled **IP address**

      2   Your PC's MAC Address is the one entitled **Physical Address**

2. What is BSS ID?

A group of wireless stations and an Access Point compose a Basic Service Set (BSS). Computers in a BSS must be configured with the same BSSID.

3. What is ESSID?

An Infrastructure configuration could also support roaming capability for mobile workers. More than one BSS can be configured as an Extended Service Set (ESS). Users within an ESS could roam freely between BSSs while maintaining a continuous connection to the wireless network stations and the Wireless LAN Access Points.

4. Can data be intercepted while transmitting through the air?

WLAN features two-fold protection in security. On the hardware side, as with Direct Sequence Spread Spectrum technology, it has the inherent scrambling security feature. On the software side, the WLAN series offers the encryption function (WEP) to enhance security and access control.

5. What is WEP?

WEP stands for Wired Equivalent Privacy, a data privacy mechanism based on a 64(40)-bit shared key algorithm.

6. What is a MAC Address?

The Media Access Control (MAC) address is a unique number assigned by the manufacturer to any Ethernet networking device, such as a network

adapter, that allows the network to identify it at the hardware level. For all practical purposes, this number is usually permanent. Unlike IP addresses which can change every time a computer logs on to the network, the MAC address of a device stays the same, making it a valuable identifier for the network.

Appendix Signal Booster Quick Installation Guide

HSB1

Hi-Gain 802.11b/g
Adjustable WiFi Signal Booster

This QiG Will Guide You Through
the Initial Setup of your Product

Check Your Package Contents:

Hi-Gain Adjustable
Signal Booster
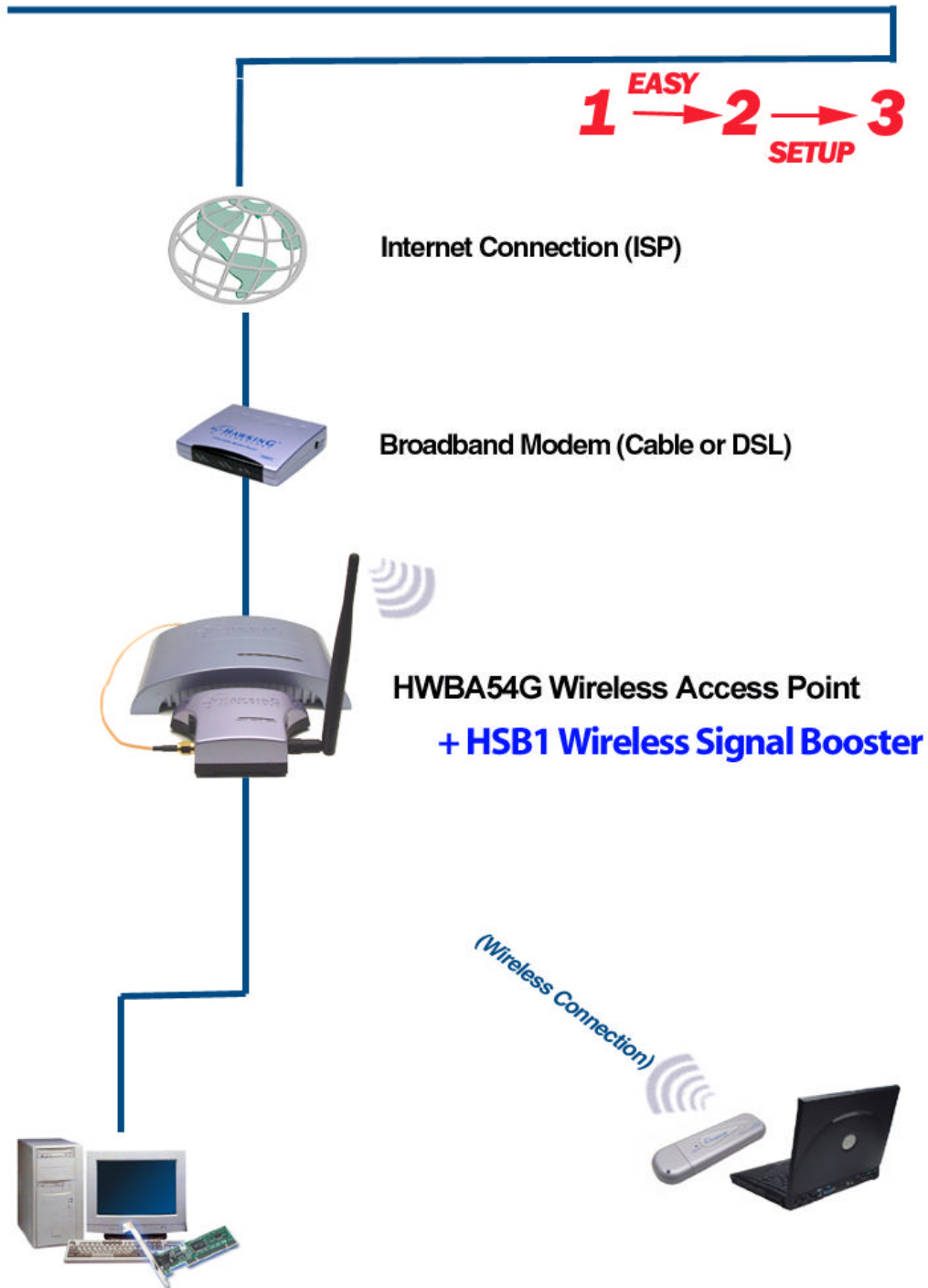
Wireless Antenna

Power Adapter

Booster Connector
Cable

(Reverse SMA to
Reverse SMA)

Mounting Screws

The operating frequency channel will be restricted to the country user located by software before importing.

TYPICAL NETWORK DIAGRAM for the HSB1

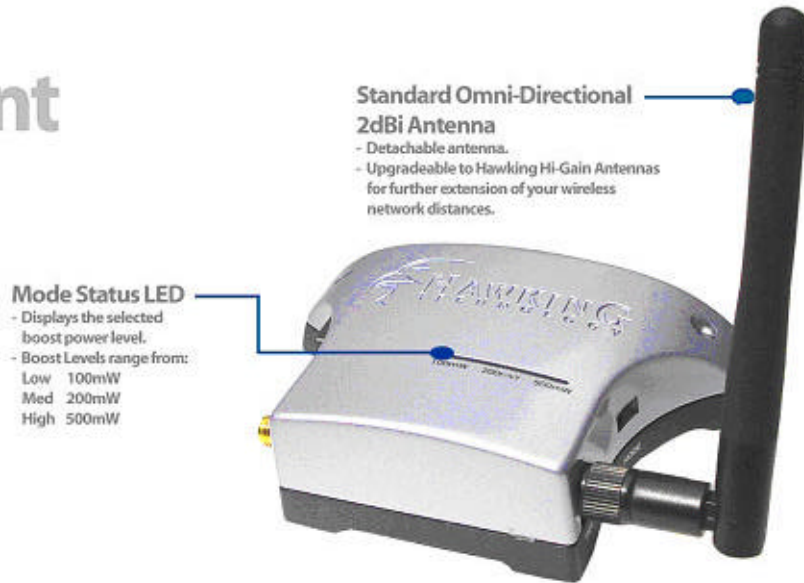**1** EASY →**2** →**3** SETUP

Internet Connection (ISP)

Broadband Modem (Cable or DSL)

HWBA54G Wireless Access Point

+ HSB1 Wireless Signal Booster

(Wireless Connection)

Each computer/laptop must have a network adapter to connect with the router.

Product Overview

Front

Standard Omni-Directional 2dBi Antenna
- Detachable antenna.
- Upgradeable to Hawking Hi-Gain Antennas for further extension of your wireless network distances.

Mode Status LED
- Displays the selected boost power level.
- Boost Levels range from:
  Low   100mW
  Med   200mW
  High   500mW

Left Side

Right Side

Power Adapter
- DC Plug input

Input Connector
- Connects Wireless Device to the Signal Booster.
- Use the provided Connector Cable to connect the Signal Booster to the antenna port of the wireless device.

Antenna Connector
- Reverese SMA Antenna Connector

Mode Selection Switch
- Adjusts the boost power level of the signal booster.
- Boost Levels range from:
  Low   100mW
  Med   200mW
  High   500mW

2

Connecting the Signal Booster

1 **Remove** the original antenna from the wireless device that you plan to use the Signal Booster with. The wireless device must have a detachable antenna to work with the Signal Booster. To remove the antenna, unscrew from the base of the antenna in a counter clockwise motion until the antenna is completely removed.

2 **Connect** the Signal Booster to the wireless device using the included color coded Connector Cable. Connect the grey end to the **INPUT** connector on the left side of the Signal Booster. Connect the **white** end to the antenna connector on the wireless device.

Note: The Connector Cable provided is designed for optimal connection and use with Hawking Technologies HWBA54G Wireless-G Access Point.

White

Wireless Device   Connector Cable   Signal Booster (INPUT)

After you have connected the Signal Booster to the Wireless Device, find the included Wireless Antenna from the package contents and connect it to the Antenna Connector on the right side of the Signal Booster. Screw the antenna base in clockwise until the antenna is firmly connected to the Booster.
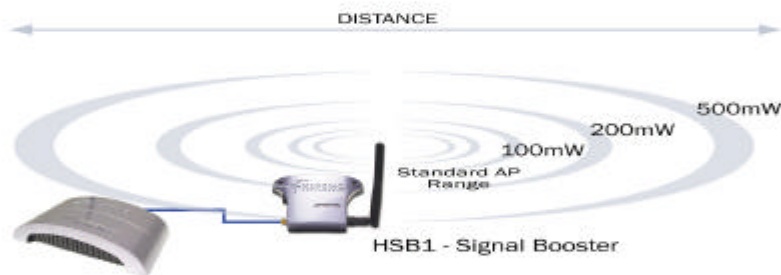
(ANTENNA)

3 **Power** on the Signal Booster by connecting the Power Adapter to the DC Plug port on the HSB1.

Connect to Available Power Outlet

4 **Adjust** the Boost Level of the Signal Booster according to your application.

DISTANCE

500mW
200mW
100mW
Standard AP Range
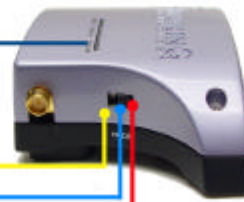
HSB1 - Signal Booster

Hawking Wireless-G Access Point

On the right side of the Signal Booster there is a switch that lets you select the Mode of your signal booster. The Modes range from:

HSB1
100mW 200mW 500mW

(Boost Level LED Readout)

100mW - Low Boost Level
200mW - Medium Boost Level
500mW - Maximum Boost Level

After you have selected your Power Mode, place the Signal Booster in the highest location possible for the best signal. You may also choose to mount it on a wall using the included mounting screws.

Product Specifications

HSB1

Network/Operating Range:

IEEE 802.11b WLAN Standard
IEEE 802.11g WLAN Standard
2400 - 2500 MHz

Frequency Response: +/- 1 dB

Output Power: 23dBm ± 2dBm

Input Power:
8-18 dBm max.
Receiver Gain: 10-13 dBm, 12 dBm Typical
Noise Figure: 3.5 dB typical

Connectors:
 Input: Reverse SMA Jack
 Antenna: Reverse SMA Jack

Power: External Power Adapter
DC Surge Protection: Available

Cable Type, Length: HPP, 80cm

Networking Terms

HSB1

Ethernet

A networking standard using cables (Category 5) to create a network.

Network Adapter - Also known as a NIC (Network Interface Card). Used to provide PC' s or laptops with an Ethernet port or wireless access to the network.

Broadband Modem - A device that allows broadband connection to the internet. Broadband connections include speeds faster than 56k (dial up modem speed). The two most common types of Broadband connections are DSL and Cable. Cable modem relies on the bandwidth of cable television lines while DSL modems rely on the telephone lines operating at DSL speeds.

Router - A device used to share internet access from one user to multiple users. By taking one IP address (Addresses used by ISP' s to assign broadband services to your computer) the Router distributes the services of your broadband access among multiple users and IP' s.

Wireless

Wireless Device – Any WiFi device (802.11b/g) that communicates wirelessly using the IEEE802.11 wireless standard.   These devices can range from wireless access points to wireless routers to wireless PCI client cards.

IEEE 802.11 – Wireless Network Specifications

- **802.11** -- applies to wireless LANs (Networks) and provides 1 or 2 Mbps transmission in the 2.4 GHz band using either frequency hopping spread spectrum (FHSS) or direct sequence spread spectrum (DSSS).
- **802.11b** (also referred to as *802.11 High Rate* or *Wi-Fi*) -- an extension to 802.11 that applies to wireless LANs and provides 11 Mbps transmission (with a fallback to 5.5, 2 and 1 Mbps) in the 2.4 GHz band. 802.11b uses only DSSS. 802.11b was a 1999 ratification to the original 802.11 standard, allowing wireless functionality comparable to Ethernet.
- **802.11g** -- applies to wireless LANs and provides 54 Mbps in the 2.4 GHz band. Backwards compatible with IEEE 802.11b products.

Hi-Gain WiFi Antenna

High powered antenna to increase the distance of your WiFi device.

dBi (decibel) - A unit of measurement used to determine the gain level of wireless antennas.

mW (MilliWatt) - A unit of measurement used to determine the power level of wireless devices.

HSB1 - WiFi Signal Booster

Customer Satisfaction and Support

If you are having technical difficulties using the product, Hawking Technologies offers free technical support to assist you.

Technical Support (For US and Canada):

Phone: 949-790-0810
Email :   techsupport@hawkingtech.com
Website: http://www.hawkingtech.com/servicesupport.php

RMA Information (For Warranty Issues / Returns)

Website: http://www.hawkingtech.com/rma.php

Thank You for choosing Hawking Technologies.