



## ***22Mbps Wireless Access Point /Bridge***

**WAP-1965**

**User's Manual**



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## 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 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 or more of the following measures:

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 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 the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the Following two conditions: (1) This device may not cause harmful interference, and (2 ) this Device must accept any interference received, including interference that may cause undesired operation.

## **Federal Communication Commission (FCC) Radiation Exposure Statement**

This equipment complies with FCC radiation exposure set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20 cm(8 inches) during normal operation.

## **R&TTE Compliance Statement**

This equipment complies with all the requirements of DIRECTIVE 1999/5/CE 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 and of the computer manufacture must therefore be allowed at all times to ensure the safe use of the equipment.

## **Revision**

User's Manual for PLANET Wireless Access Point

Model: WAP-1965

Rev: 1.0 (October, 2002)

Part No. EM-WAP1965v1

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# Chapter 1 Introduction

Thank you for purchasing WAP-1965. This device features the latest innovation wireless technology making the wireless networking world happened. This manual guides you on how to install and properly use the WAP-1965 in order to take full advantage of its features.

## 1.1 Package Contents

Make sure that you have the following items:

- One WAP-1965
- One AC Power Adapter
- One User's Manual and Utility CD
- One Quick Installation Guide

<b>Note:</b>	If any of the above items are missing, contact your supplier as soon as possible.
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## 1.2 System Requirements

Before installation, please check the following requirements with your equipment.

- Pentium Based (And Above) IBM-Compatible PC System
- CD-ROM drive
- Windows 98/ME/2000/XP Operating System with TCP/IP protocol

## 1.3 Features

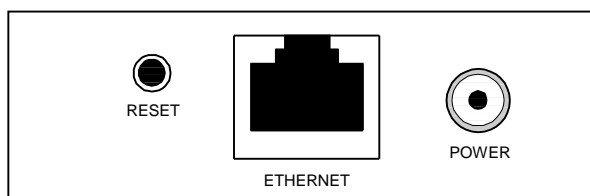
- Four operation modes selectable: AP / AP Client / Point to Point / Point to Multipoint
- Utilize Direct Sequence Spread Spectrum (DSSS) technology and support the modulation of Packet Binary Convolutional Code (PBCC) mode to provide robust, interference-resistant solution in a multi-user environment
- Wireless LAN IEEE802.11b compliant
- Auto Fall-Back Data Rate for Long-Distance Communication and Noisy Environments
- High-speed data transfer rate up to 22 Mbps
- Features Roaming, Best Access Point Selection, Load Balancing, and Network Traffic Filtering
- 64bit, 128bit and 256bit WEP (Wired Equivalent Privacy)
- Support 63 clients to connect the network. (For best performance, the suggested maximum clients number of one WAP-1965 in AP mode is 25.)
- Provide Windows-base configuration utility and Web Configuration
- Support DHCP Server and Client
- Support MAC Filter

## 1.4 Specification

Standard	IEEE 802.11b Compliant
Signal Type	DSSS (Direct Sequence Spread Spectrum)
Modulation	QPSK / BPSK / CCK / PBCC
Port	One 10/100BASE-TX
Antenna	Dual Dipole Antenna
Data Encryption	64 bit / 128 bit / 256bit WEP encryption
Frequency	2.4GHz - 2.4835GHz
Channel	11 Channels (US, Canada) 13 Channels (Europe) 14 Channels (Japan)
Data Rate	Up to 22Mbps(with automatic scale back)
LED Indicators	Power, TX/RX (wireless), Link (wired)
Power Requirement	5V DC, 2A
Temperature	Operating :0 ~ 55 degree C Storage: -20 ~ 70 degree C
Humidity	Operating: 0 ~ 70% Storage: 0 ~ 90% Non-Condensing
Dimensions	140 x 90 x 40mm
Output Power	17dBm±1dBm
Antenna Gain	2dBi
Antenna Connector	Reversed Polarity SMA Male

## Chapter 2 Hardware Installation

Before you proceed with the installation, it is necessary that you have enough information about the WAP-1965.



- 1. Locate an optimum location for the WAP-1965.** The best place for your WAP-1965 is usually at the center of your wireless network, with line of sight to all of your mobile stations.
- 2. Assemble the antennas to WAP-1965.** Try to place them to a position that can best cover your wireless network. The antenna's position will enhance the receiving sensitivity.
- 3. Connect RJ-45 cable to WAP-1965.** Connect this WAP-1965 to your LAN switch/hub or a single PC.
- 4. Plug in power adapter and connect to power source.** After power on, WAP-1965 will start to operate.

**Note:** ONLY use the power adapter supplied with the WAP-1965. Otherwise, the product may be damaged.

If you want to reset your WAP-1965 to default settings, press the Reset button 5 second. And then wait for 10 seconds for WAP-1965 to reboot.

# Chapter 3 Configuring the Wireless Access Point

## 3.1 Configure through Web Browser

Web configuration provides a user-friendly graphical user interface (web pages) to manage your WAP-1965. An AP with an assigned IP address (e.g. <http://192.168.1.1>) will allow you to monitor and configure via web browser (e.g., MS Internet Explorer or Netscape).

1. Open your web browser.
2. Enter the IP address of your WAP-1965 in the address field (default IP address is <http://192.168.1.1>). Please note that your PC's IP address should be on the same IP subnet of the WAP-1965. For example, you can configure your PC's IP address to 192.168.1.2 if WAP-1965 is with IP 192.168.1.1.
3. A User Name and Password dialog box will appear. Please enter your User Name and Password here. Default User Name and Password are both "admin". Click Ok.



4. Then you will see the WAP-1965 web configuration page.



### 3.1.1 Status:

You can check your WAP-1965 settings and status in this screen.

The screenshot shows the 'Status' page of a WAP-1965 device. The page has a blue header with '22 Mbps >>' and 'Access Point'. Below the header is a navigation menu with 'Status' highlighted. The main content area is divided into two sections: LAN and Wireless. The LAN section shows the following details: Firmware Version: 03.01.0h, LAN MAC: 00-30-4F-04-65-89, IP Address: 203.70.249.133, Subnet Mask: 255.255.255.0, Gateway: 0.0.0.0, Send: 425, and Receive: 802. The Wireless section shows: Wireless MAC: 00-30-4F-04-CB-4C, ESSID: AP046589, Encryption Function: Disable, Channel: 6, Send: 679, and Receive: 0. At the bottom of the Wireless section is a 'View Log' button. Below the status information are two tabs: 'Connection Time' and 'Wireless Station'.

You can click the “View Log” button, and then the screen below will appear. You can view the logged message here. You can also clear or refresh the log record.

The screenshot shows the 'View Log' page of a WAP-1965 device. The page has a blue header with '22 Mbps >>' and 'Access Point'. Below the header is a navigation menu with 'View Log' highlighted. The main content area is a table with two columns: 'Time' and 'Message'. The first entry in the table is 'Oct/25/2002 15:14:31' and 'System started'. Above the table are several navigation buttons: 'First Page', 'Last Page', 'Previous Page', 'Next Page', 'Clear Log', and 'Refresh'.

### 3.1.2 Basic Settings:

You can set the AP Name, ESSID, Channel and WEP function to this Access Point. After configuration, please click Apply to save your settings.



The screenshot displays the 'Basic Setting' interface for an Access Point. At the top, there is a navigation bar with 'Status', 'Basic Setting', 'IP Setting', 'Advanced Setting', 'Security', and 'Tools'. The 'Basic Setting' tab is active. The main content area includes the following fields and options:

- AP Name:** A text input field containing 'AP045589'.
- SSID:** A text input field containing 'Planet'.
- Channel:** A dropdown menu showing '6' with '(Domain: ETSI)' below it.
- WEP Key:** Radio buttons for 'Disable', '64bits', '128bits', and '256bits'. 'Disable' is selected.
- Mode:** A dropdown menu showing 'HEX'.
- WEP Keys:** Four radio buttons labeled '1.', '2.', '3.', and '4.', each followed by an empty text input field. '1.' is selected.
- Buttons:** 'Apply', 'Cancel', and 'Help' buttons at the bottom.

**Device Name:** The host name of the WAP-1965. This can be any name for you to easily identify this access point.

**SSID:** The SSID is the name shared among all points in the wireless network system, must be identical for all points.

**Channel:** The value of channel can be selected from channel 1 to 11 for FCC domain, channels 1 to 13 for ETSI domain and 1 to 14 for Japan domain.

**WEP:** Wired Equivalent Privacy (WEP) is an encryption scheme used to protect wireless data communication. To enable the icon will prevent other stations without the same WEP key from linking with the AP.

### 3.1.3 IP Settings:

You can set the IP, Gateway, DHCP and DNS to this Access Point on this field. After configuration, please click Apply to save your settings.



**IP address:** This address is an unique numbers that identifies a computer or device on the WAN or LAN. These numbers are usually shown in groups separated by periods, for example: 123.123.23.2.

**Subnet Mask:** Subnets allow network traffic between hosts to be separated based on the network's configuration. In IP networking, traffic takes the form of packets. IP subnets advance network security and performance to some level by organizing hosts into logical groups. subnet masks contain four bytes and usually appear in the same "dotted decimal" data. For example, a very common subnet mask in its binary demonstration 11111111 11111111 11111111 00000000 will usually be shown in the corresponding, more readable form as 255.255.255.0.

**Gateway:** A gateway is a piece of software or hardware that passes information between networks. You'll see this term most often when you either log in to an Internet site or when you're transient email between different servers.

**DHCP:** DHCP is a protocol for dynamically assigning IP addresses to networked computers. With DHCP, a computer can automatically be given an exclusive IP address each time it logs on to a network--making IP address management an easier job for network administrators. When a computer connects to the network, the DHCP server selects an IP address from a master list and assigns it to the system. The device must set to "Obtain the IP address automatically". The Wireless Access Point Gateway's DHCP server is enabled by default. If you would like to disable the DHCP server, click on the "Off" bottom.

**DNS:** When you send email or position a browser to an Internet domain such as xxxxx.com, the domain name system translates the names into IP addresses. The term refers to two things: the conventions for naming hosts and the way the names are control across the Internet.

If your network has a DHCP server, you can select Obtain IP Automatically to get the IP address from your DHCP server. Or you can select Fixed IP to set the IP settings manually.

WAP-1965 has build-in DHCP server. By default is "On". If you have a DHCP server in your network already, please set the DHCP server function to Off. When you assign an IP address to this access point, please ensure this IP address is on the same IP range as DHCP Server settings.

**Note:** When you select Obtain IP Automatically, DHCP Sever will be disabled automatically.

### 3.1.4 Advanced Settings:

You can set the WAP-1965 operation mode and relative settings. After configuration, please click Apply to save your settings.



**AP Mode:** WAP-1965 has four operation modes. By default, it is set to AP mode.

**Access Point:** This mode is set to WAP-1965 by default. This connects your wireless PCs to a wired network. In most cases, no change is necessary. Up to 63 wireless clients can be connected through WAP-1965.

**Access Point Client:** A WAP-1965 set to AP Client mode is able to talk to one WAP-1965 functioning in AP mode and wireless client within its range. This mode allows your WAP-1965 client to be the wirelessly bridged to the main WAP-1965. When you select this mode, please enter the MAC address of the main WAP-1965 into “Remote AP BSS ID” field.

**Wireless Bridge:** This mode connects two physically separated LAN segments by using two WAP-1965s. The remote WAP-1965 also needs to be set up as a Wireless Bridge. The designated access point with which it communicates is identified by the “Remote Bridge MAC”. It corresponds to the MAC Address of the remote Wireless Bridge.

**Multiple Bridge:** This mode allows you to construct a network that has multiple WAP-1965s bridging multiple LANs wirelessly. For all bridged WAP-1965s, configure them in Multiple Bridge mode and all the WAP-1965s must be configured on the same channel. You can have up to 14 WAP-1965 to be bridged together.

**Beacon Interval:** Specify the Beacon Interval value. Enter a value between 1 and 1000. Beacons are packets sent by an Access Point to synchronize a wireless network.

**RTS Threshold:** Use this field to specify a value for the RTS Threshold. Enter a value between 256 and 2432. This value should remain at its default setting of 2,432. Should you encounter inconsistent data flow, only minor modifications are recommended.

**Fragmentation Threshold:** This field is used to specify the fragmentation threshold. Enter a value between 256 and 2346. If you experience a high packet error rate, try to slightly increase your Fragmentation Threshold. The value should remain at its default setting of 2,346. Setting the Fragmentation Threshold too low may result in poor performance.

**DTIM Interval (Beacon Rate):** Specify the Beacon Rate. Enter a value between 1 and 65535 that specifies the Delivery Traffic Indication Message (DTIM). A DTIM is a countdown informing clients of

the next window for listening to broadcast and multicast messages. When the AP has buffered broadcast or multicast messages for associated clients, it sends the next DTIM with a DTIM Interval value. AP Clients hear the beacons and awaken to receive the broadcast and multicast messages.

**Authentication Type:** The authentication type defines configuration options for the sharing of wireless networks to verify identity and access privileges of roaming network cards. You may choose between Open System, Shared Key, and Both.

**Open System:** Open System authentication is the simplest of the available authentication algorithms. Essentially it is a null authentication algorithm. Any station that requests authentication with this algorithm may become authenticated if Authentication Type at the recipient station is set to Open System authentication. Open System authentication is the default authentication algorithm.

**Shared Key:** Shared Key authentication supports authentication of STAs as either a member of those who know a shared secret key or a member of those who do not.

**Preamble:** The preamble defines the length of the CRC block for communication between the Access Point and roaming Network Card. Long preamble ensure the network card to communicate with access point more reliably. Verify that you have selected the appropriate preamble type and click the Apply button to set it. **Note:** High network traffic areas should use the short preamble type.

**Basic Rate:** The basic transfer rates should be set depending on the speed of your wireless network. Slower wireless networks should be set at 1-2 or 1-2-5.5-11(Mbps) while a faster wireless network should be set at 1-2-5.11-22 (Mbps).

**Antenna Selection:** These settings determine whether either or both antennas will be used to receive data. The default setting is Diversity. This setting is uses both antennae to help overcome multi-path distortion.

### 3.1.5 Security:

You can change Administrator ID, Password and set the MAC Filter settings in this option.

The screenshot shows the 'Security' configuration page of an Access Point. The page has a blue sidebar on the left with the word 'Security' and a top navigation bar with '22 Mbps' and 'Access Point'. The main content area is divided into two sections. The first section is for password configuration, with fields for 'Administrator id' (set to 'admin'), 'AP Password New', and 'Confirm'. The second section is for MAC Filter configuration, with radio buttons for 'Enabled' and 'Disabled' (the 'Disabled' option is selected). Below the radio buttons are two options: 'Only deny PCs with MAC listed below to access device' and 'Only allow PCs with MAC listed below to access device' (the 'Allow' option is selected). There is a dropdown menu for '1-10' and a table of 10 MAC address fields, each labeled 'MAC 1' through 'MAC 10'. At the bottom of the page are 'Apply', 'Cancel', and 'Help' buttons.

**Password:** Enter the new password in the "AP Password New" field and again in the next field to confirm. Click on "Apply" to execute the password change. The Password is case-sensitive, and can be made up of any keyboard characters. The new password must be between 0 and 15 characters in length.

**MAC Filters:** Filter function is for the administrator to authorize who can gain network access through the Access Point by using MAC address filtering. By choosing the Allow radio button, only MAC addresses in the Authorization table will be allowed to communicate with the Access Point. By choosing the Deny radio button, any MAC address in the table will be denied association with the Access Point. You can have up to 50 MAC addresses configured on it.

### 3.1.6 Tools:

You can backup or restore WAP-1965 settings, reset WAP-1965 to factory default and upgrade firmware in this option.



**Backup Settings:** You can backup current settings to a file. Press "Backup" button, it will prompt you a location to save the backup file (config.bin).

**Restore Settings:** When you try to restore the settings you have saved, please press "Browse..." to find out the backup file and then press "Restore".

**Restore to default settings:** It is used to reset WAP-1965's configuration to factory default.

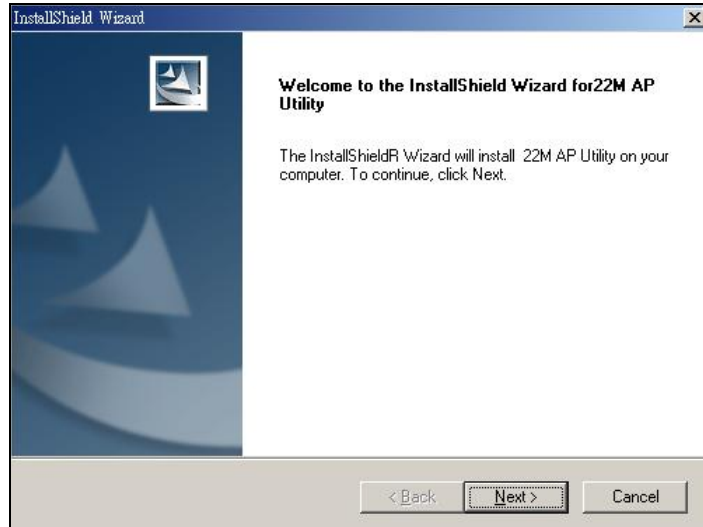
**Firmware Upgrade:** You can upload the newest firmware of the WAP-1965. You may either enter the file name in the entry field or browse the file by clicking the Browse button.

## 3.2 Configure through 22M AP Utility

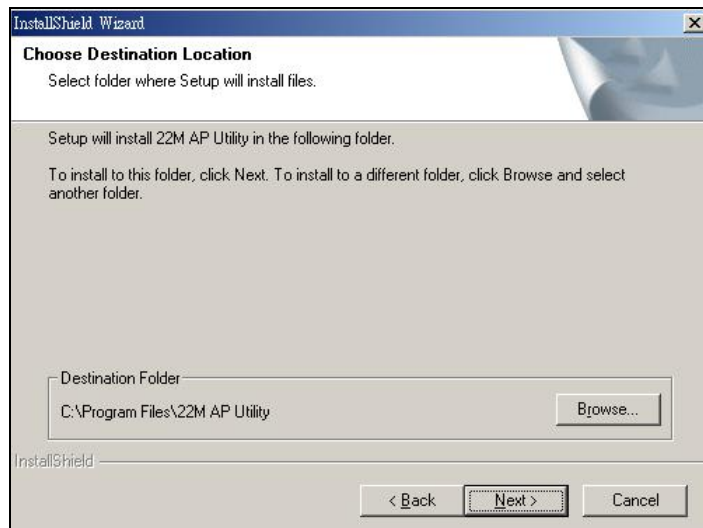
The 22M AP Utility is provided to configure the WAP-1965. It can be used to configure multiple WAP-1965s at the same time in an easiest way.

### 3.2.1 Install 22M AP Utility

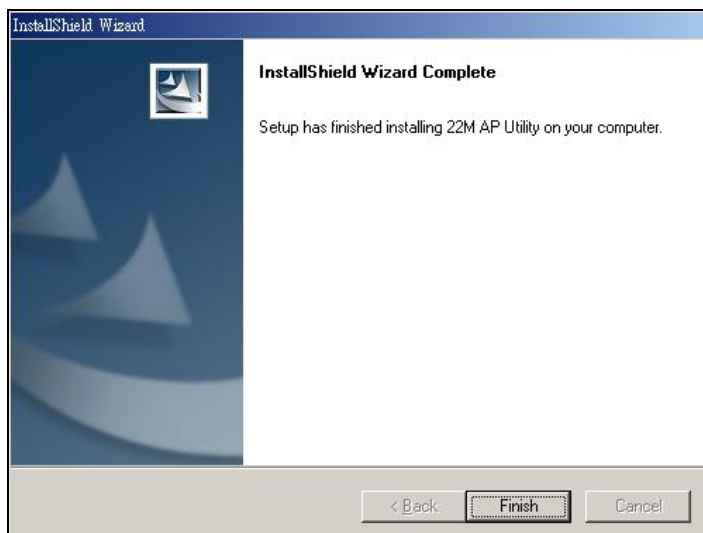
1. Insert the User's Manual and Utility CD into the CD-ROM drive.
2. Run "setup.exe" under "E:\Utility\WAP-1965\" directory, or click the "Start" button and choose "Run". When the dialog box appears, enter "E:\Utility\WAP-1965\setup.exe" (Assume "E" is your CD-ROM drive). You will see the dialog box as below. Please click "Next" to continue.



3. You can click "Browse" to specify the Destination Folder that you want to install the utility. Or you can keep the default setting and click "Next" to continue.




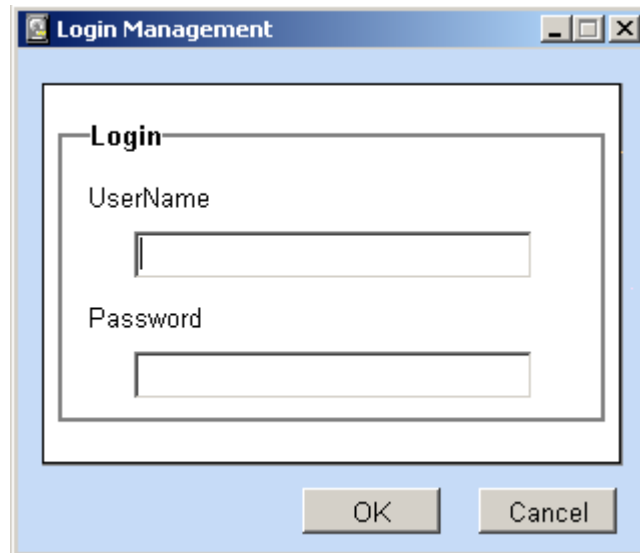
4. Please click "Finish" to complete the software installation.



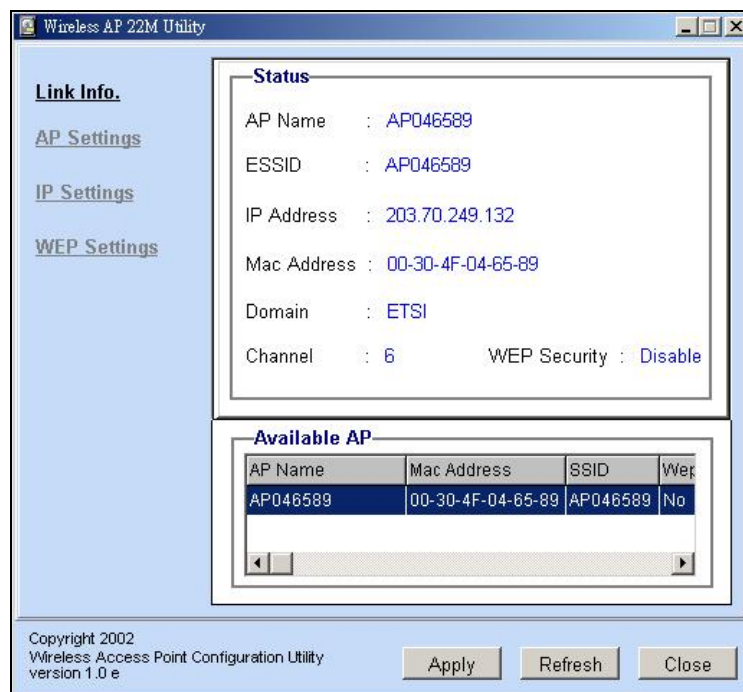


### 3.2.2 22M AP Utility configuration

After installing utility, you can find the icon  on your desktop, please double click this icon to run the configuration utility and select each option to setup your Access Point as you need. After settings in each option, please press "Apply" to save. It will show you the dialog box to enter User Name and Password. By default, the User Name and Password is "admin".



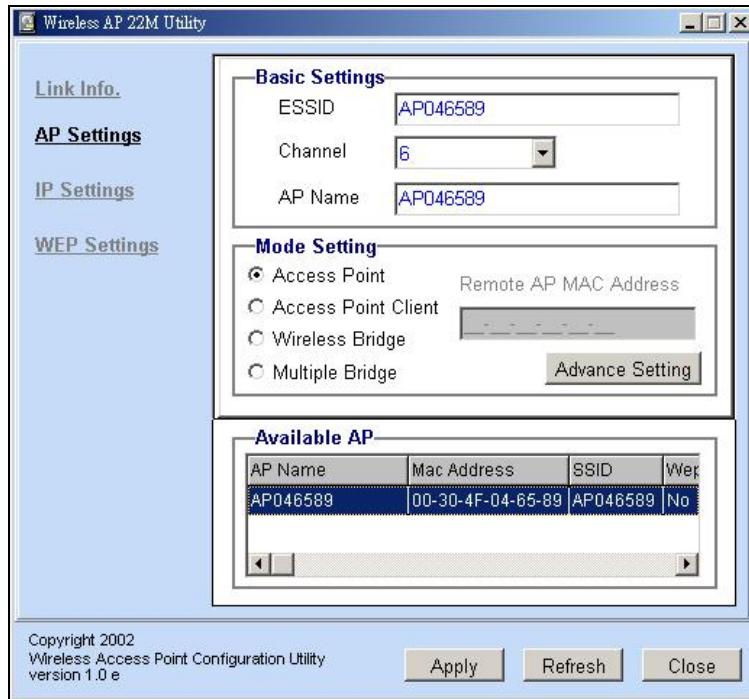
#### 3.2.2.1 Link Info.



When the configuration utility starts, it will show you the first option "Link Info". You can view the first Access Point's current setting.

**Note:** If you have many WAP-1965, all the WAP-1965s will list in "Available AP". You can select the WAP-1965 that you want to check, then you can see the settings of the WAP-1965.

### 3.2.2.2 AP Settings



#### Basic Settings:

**ESSID:** ESSID is used by all wireless devices within the wireless network. The ESSID value must be the same on all stations and Access points in this WLAN.

**Channel:** Select the appropriate channel from the list provided to correspond with your network settings, between 1 and 13 (in ETSI). All wireless devices with the same ESSID will automatically use this channel to communicate with this access point.

**AP Name:** Change the access point name here, if you want to set another name to this Access Point. This will enable you to manage your access points with more ease if you have multiple access points in the network.

#### Mode Settings:

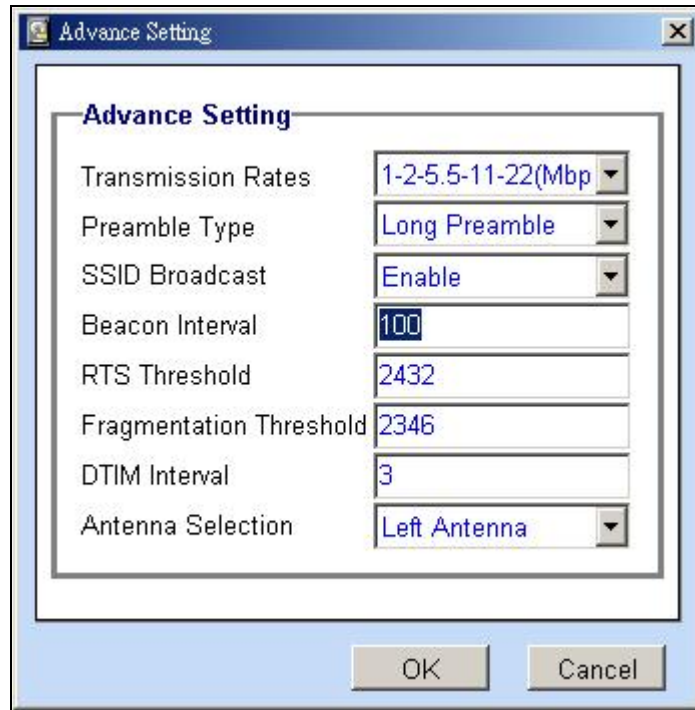
**Access Point:** This mode is set to WAP-1965 by default. This connects your wireless PCs to a wired network. In most cases, no change is necessary. Up to 63 wireless clients can be connected through WAP-1965.

**Access Point Client:** A WAP-1965 set to AP Client mode is able to talk to one WAP-1965 functioning in AP mode and wireless client within its range. This mode allows your WAP-1965 client to be the wirelessly bridged to the main WAP-1965. When you select this mode, please enter the MAC address of the main WAP-1965 into "Remote AP BSS ID" field.

**Wireless Bridge:** This mode connects two physically separated LAN segments by using two WAP-1965s. The remote WAP-1965 also needs to be set up as a Wireless Bridge. The designated access point with which it communicates is identified by the "Remote Bridge MAC". It corresponds to the MAC Address of the remote Wireless Bridge

**Multiple Bridge:** This mode allows you to construct a network that has multiple WAP-1965s bridging multiple LANs wirelessly. For all bridged WAP-1965s, configure them in Multiple Bridge mode and all the WAP-1965s must be configured on the same channel. You can have up to 14 WAP-1965 to be bridged together.

**Advance setting:** when you press the "Advance Setting button", the dialog box below will appear. You can set more details parameters in this screen.



**Transmission Rates:** You may select transmission rate to “1-2Mbps”, “1-2-5.5-11Mbps” or “1-2-5.5-11-22Mbps”.

**Preamble Type:** The preamble defines the length of the CRC block for communication between the Access Point and roaming Network Card. Long preamble ensure the network card to communicate with access point more reliably. Verify that you have selected the appropriate preamble type and click the Apply button to set it. Note: High network traffic areas should use the short preamble type

**SSID Broadcast:** This allows the AP to broadcast its SSID. Other wireless client with site survey function can easily know this SSID and use this SSID to connect your access point. To secure your wireless network from unauthorized users, please disable this function.

**Beacon Interval:** Specify the Beacon Interval value. Enter a value between 1 and 1000. Beacons are packets sent by an Access Point to synchronize a wireless network.

**RTS Threshold:** Use this field to specify a value for the RTS Threshold. Enter a value between 256 and 2432. This value should remain at its default setting of 2,432. Should you encounter inconsistent data flow, only minor modifications are recommended.

**Fragmentation Threshold:** This field is used to specify the fragmentation threshold. Enter a value between 256 and 2346. If you experience a high packet error rate, try to slightly increase your Fragmentation Threshold. The value should remain at its default setting of 2,346. Setting the Fragmentation Threshold too low may result in poor performance.

**DTIM Interval:** Specify the Beacon Rate. Enter a value between 1 and 65535 that specifies the Delivery Traffic Indication Message (DTIM). A DTIM is a countdown informing clients of the next window for listening to broadcast and multicast messages. When the AP has buffered broadcast or multicast messages for associated clients, it sends the next DTIM with a DTIM Interval value. AP Clients hear the beacons and awaken to receive the broadcast and multicast messages.

**Antenna Selection:** These settings determine whether either or both antennas will be used to receive data. The default setting is Diversity. This setting is uses both antennae to help overcome multi-path distortion.

### 3.2.2.3 IP Settings

Copyright 2002  
Wireless Access Point Configuration Utility  
version 1.0 e

AP Name	Mac Address	SSID	Wep
AP046589	00-30-4F-04-65-89	AP046589	No

**Fix IP Address:** You may give a fixed IP address to WAP-1965 manually by choosing this radio button.

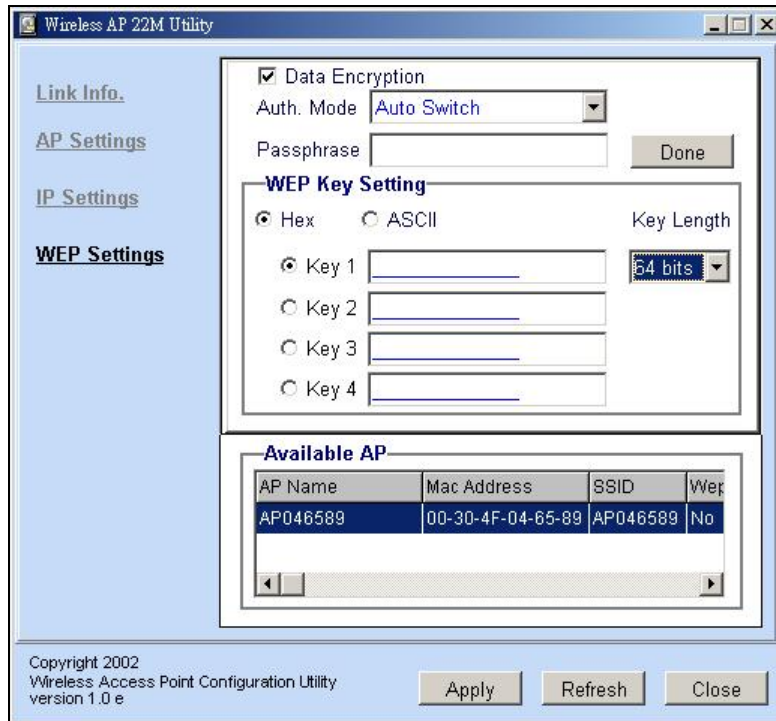
**IP Address:** Set an IP address for the AP.

**Subnet mask:** Set the Subnet Mask for the AP.

**Gateway:** The IP address of a gateway device necessary for communication with devices outside the subnet of the Access Point. If your network is not divided onto different subnets, this can remain blank.

**DHCP Client:** If there is a DHCP Server in your LAN, you can select DHCP Client to let the WAP-1965 be a client to get an IP address from your DHCP server.

### 3.2.2.4 WEP Settings



**Date Encryption:** Select this option when you want to enable WEP function.

**Auth. Mode:**

**Open Authentication:** With this setting, any station in the WLAN can receives and transmits data from the Access Point (null authentication).

**Shared Authentication:** With this setting, only stations using shared key encryption identified by the Access Point are allowed to associate with it.

**Auto Switch:** With this setting, stations can communicate with the Access Point either with or without data encryption.

**Passphrase:** You can enter a number in this filed and press “Done”, configuration utility will make the WEP key automatically.

**WEP Key Settings:** You can define the WEP (Wired Equivalent Privacy) function by yourself. There are 4 keys available, please ensure you have enter correct number for the key values with different Key Length and coding (Hex or ASCII) as 64bit (10 Hex digit / 5 ASCII), 128bit (26 Hex digit / 13 ASCII) or 256bit (58 Hex digit / 29 ASCII), please select one of them and enter the key you want to use. When Hex is selected, you may enter alphanumeric characters in the range of “A-F”, “a-f” and “0-9” in the WEP Key entry field. Alternatively, you may enter digit hexadecimal values in the range of “a-z”, “A-Z” and “0-9”.

**Note:** If you have many WAP-1965s in LAN and you want to set them have the same WEP key. You can set one of them, and then select all the WAP-1965 in the “Available AP” and press Apply. You will see a dialog box appears as below. You can enter their User Name and Password in this dialog box and Click OK to apply.

Login Management

**Login**

AP Name	Mac Address	UserName	Password
AP08D668	00-30-4F-08-D6-68		
AP046589	00-30-4F-04-65-89		

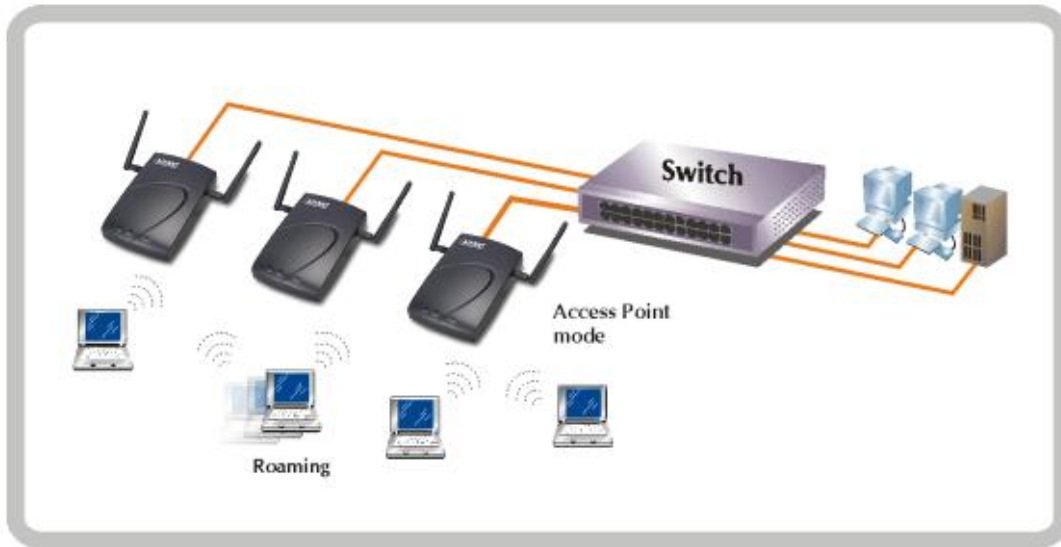
OK Cancel

## Chapter 4 Application

This chapter describe the four operating mode of your WAP-1965. The four working modes of WAP-1965 are Access Point, Access Point Client Mode, Wireless Bridge mode and Multiple Bridge mode.

### 4.1 Access Point mode

With this mode, your Wireless network connection could act as following.



Any of your IEEE802.11b end nodes should find the nearest Access Point to communicate with any other Wireless end-nodes or the wired Ethernet network.

There are two things need to be check for your wireless end nodes, the services set ID (SSID) and the Wired Equivalent Protocol (WEP), both parameters should be the same with your Access Point.

### 4.2 Wireless AP Client mode

The WAP-1965 can also act as a client on a wireless LAN. When configured as AP Client mode, WAP-1965 soon makes your connected PC a wireless end node. This mode can be deployed if your end nodes (already installed with an Ethernet Adapter) do not want to make any change but want to move it somewhere not easy to have the wire.

In this mode, WAP-1965 will need to accompany with an existing WAP-1965 in access point mode in the wireless network.



## 4.3 Wireless Bridge mode

The Wireless Bridge mode help to make the two Ethernet networks connected without any wire. With two WAP-1965s in this mode, the two LANs in distance can communicate to each other. This could be deployed if the networks are hard to make the wire in between. Please be noted, please key in the MAC address to make the WAP-1965 communicate with a specific remote Access Point, you can find the MAC address either from the utility or from the label under the Access Point.

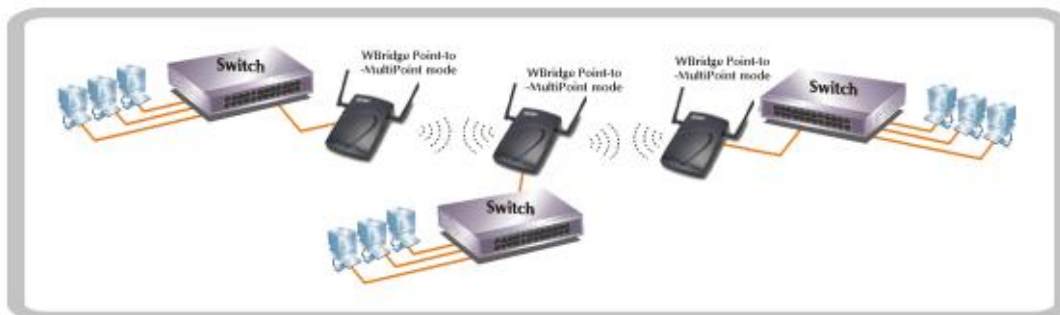
The omni antenna is with 17dBm transmitting power, if you would like to make longer distance that the default antenna cannot reach, consult your local dealer for more about how to extend your distance.



**Note:** Please do consult your local dealer about the external or directional antenna you would like to install and get the connection. Improper outdoor antenna installation could damage the Access Point or get injured or get killed in some condition like thunders or strong winds.

## 4.4 Multiple Bridge mode

For multiple LANs, the WAP-1965 also helps to make the connections. With this mode, three or more LANs can bridge to each other.



Note: The mode "Multiple Bridge" will turns the Access Points, for example the above three Access point in the figure, into one network domain. This also means your three Ethernet networks will use 22Mbps transmission rate to communicate with each other. In a large network, please consider using management device to reduce the network broadcast to the wireless network.



# Chapter 5 Troubleshooting

This chapter gives tips on how to configure the communication software. This chapter provides solutions to problems usually encountered during the *installation* and operation of the *Wireless Network Access Point*. Read the description below to solve your problems.

## **Can I run an application from a remote computer over the wireless network?**

This will depend on whether or not the application is designed to be used over a network. Consult the application's user guide to determine if it supports operation over a network.

## **Can, I play games with other members of the cordless network?**

Yes, as long as the game supports multiple plays over a LAN (local area network). Refer to the game's user guide for more information.

## **What is the IEEE 802.11b standard?**

The IEEE 802.11b Wireless LAN standards subcommittee, which is formulating a standard for the industry. The objective is to enable wireless LAN hardware from different manufactures to communicate.

## **What IEEE 802.11 features are supported?**

The product supports the following IEEE 802.11 functions:

- w CSMA/CA plus Acknowledge protocol
- w Multi-Channel Roaming
- w Automatic Rate Selection
- w RTS/CTS feature
- w Fragmentation
- w Power Management

## **What is PBCC?**

This new products use the ACX100 chip from Texas Instruments. In addition to meeting the existing standard, the chip also supports a new modulation scheme developed by TI, called Packet Binary Convolution Code (PBCC). It's this scheme that gives the products the extra kick: Even at lower speeds, PBCC provides better performance at greater distances, and it can also work at 22 Mbps.

## **What is Ad-hoc?**

An Ad-hoc integrated wireless LAN is a group of computers, each with a WLAN adapter, Connected as an independent wireless LAN. Ad hoc wireless LAN is applicable at a departmental scale for a branch or SOHO operation.

**What is Infrastructure?**

An integrated wireless and wired LAN is called an Infrastructure configuration. Infrastructure is applicable to enterprise scale for wireless access to central database, or wireless application for mobile workers.

**What is Roaming?**

Roaming is the ability of a portable computer user to communicate continuously while moving freely throughout an area greater than that covered by a single Wireless Network Access Point. Before using the roaming function, the workstation must make sure that it is the same channel number with the Wireless Network Access Point of dedicated coverage area.