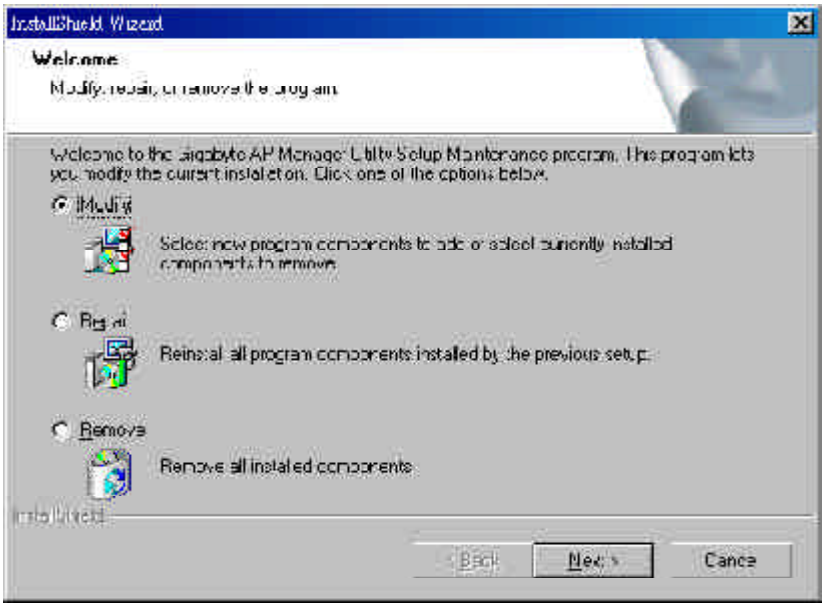
If you just want to modify some program components or reinstall all program components, you can run the installation program directly. And then the InstallShield Wizard will appear.

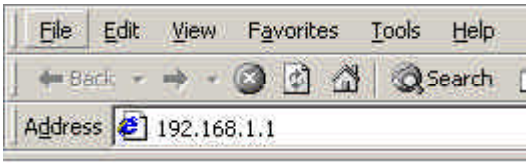
Please choose one of the options what you want then click "**Next**" continues to modify, repair or remove the Gigabyte AP Manager Utility.



Chapter4 Web-Based Configuration Utility

The Wireless Access Point can be configured one of two ways, through the AP Manager Utility or the Web-based configuration Utility. If you choose to use the Web-based configuration utility, please configure the Access Point from a computer with an ethernet connection to the Access Point.

Please input the IP address of the Access Point 192.168.1.1 into the address column in the web browser.

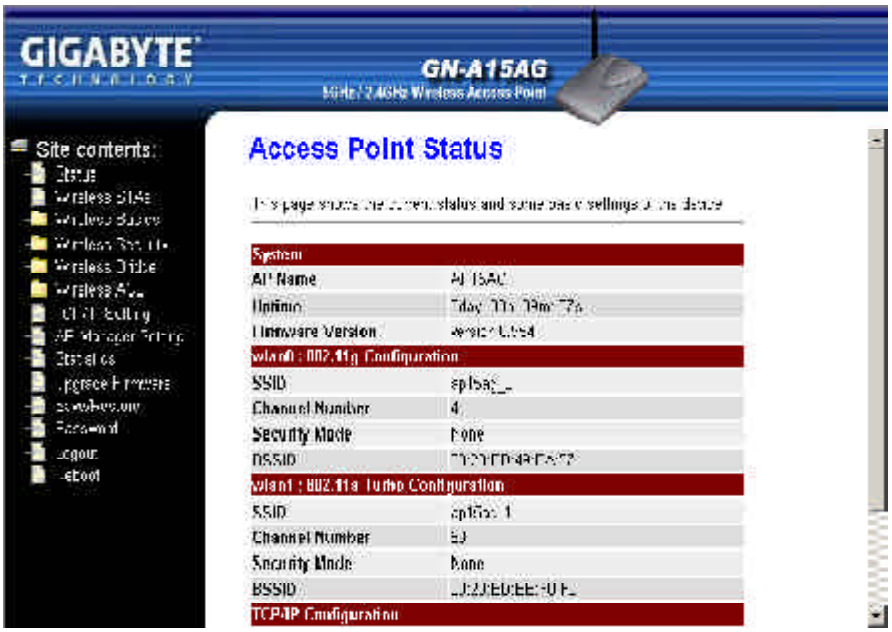


Login

Please Input the default Username “**admin**” and the default Password “**admin**” to access the Web configuration Utility.

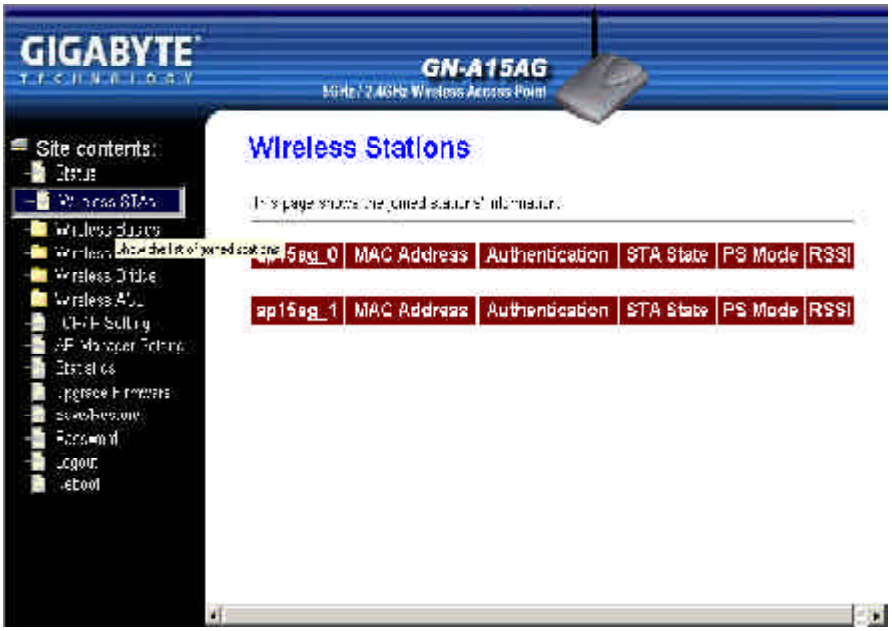
Status

You can use this status screen to view the Access Point's system information, current connection status.and configuration.



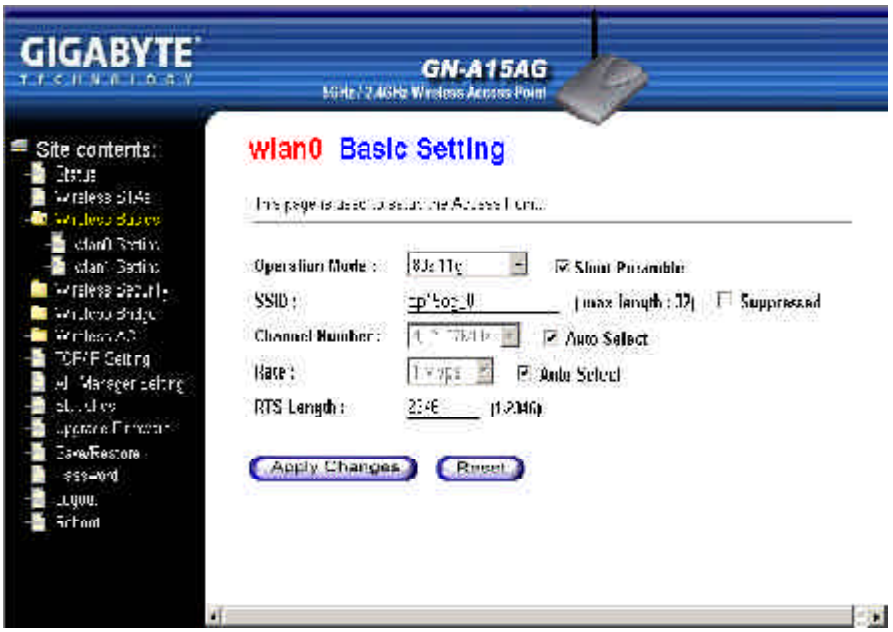
Wireless STAs

The Wireless Stations page will show you the information of the joined stations.



Wireless Basic settings

You will be able to configure settings for IEEE802.11a and IEEE802.11g devices in your network. The wlan0 represents the embedded IEEE802.11b/g Card and the wlan1 represents the embedded IEEE802.11a Card.



Operation Mode

You can select which operation mode you want to use. The wlan0 can support 802.11b, 802.11g and 802.11g turbo. The wlan1 can support 802.11a, 802.11a turbo. Besides, the wlan0 also support Preamble Type. The Preamble shall be provided so that the receiver can perform the necessary operations for synchronization.

SSID

The ESSID or SSID is the name represent the AP in the wireless network. The ESSID of all AP in your network should set to identical for the mobile client can roam between access points. This ESSID string is case sensitive of up to 32 ASCII characters.

The “Suppressed” setting allows you to hide the ESSID in wireless transmission. Those who don’t know the ESSID will not be able connect to the AP.

ChannelNumber

Please choose the channel, which you can get best performance. Normally, it doesn’t need to change. The default setting is the “Auto Select” channel.

- ***Rate***

  You can select one of the rates baesd on your need. The Data Rate of the 802.11g standard are 1M, 2M, 5.5M, 11M, 6M, *9M, 12M, 18M, 24M, 36M, 48M and 54M. The Data Rate of the 802.11b standard are 11M, 5.5M, 2M, 1M. The Data Rate of the 802.11a standard are 6M, 9M, 12M, 18M, 24M, 36M, 48M, 54M. The Data Rate of the 802.11g turbo and 802.11a turbo can up to 108Mbps.*

- ***RTS Length***

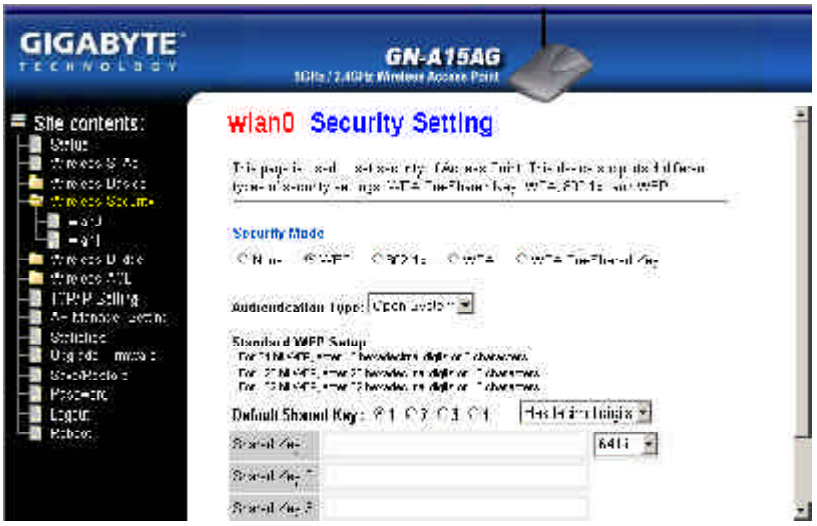
  This value should remain at its default setting of 2346. Should you encounter inconsistent data flow, only minor modifications are recommended. The setting range is 0 ~ 2346.

Verify the desired setting and then click the "**Apply Changes**" button to set the value into access point.

Wireless Security

The Access Point supports four Security type you can select : “WEP”, “802.1x”, “WPA”, “WPA Pre-Shared Key”.

■ **WEP**



🗁 ***Authentication Type***

You may choose between “Open System”, “Shared Key”, and “Auto”. The Authentication Type default is set to “Auto”.

Open System in which the sender and the recipient do NOT share a secret key. Each party generates its own key-pair and asks the receiver to accept the randomly generated key. Once accepted, this key is used for a short time only. Then a new key is generated and agreed upon.

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

64 (40) Bits, 128 (104) Bits or 152 (128) Bits

There are three levels of encryption 64 bits, 128 bits and 152 bits. The 64 bits encryption is referenced as a lower level encryption. The 152 bits encryption is referenced as a higher level encryption.

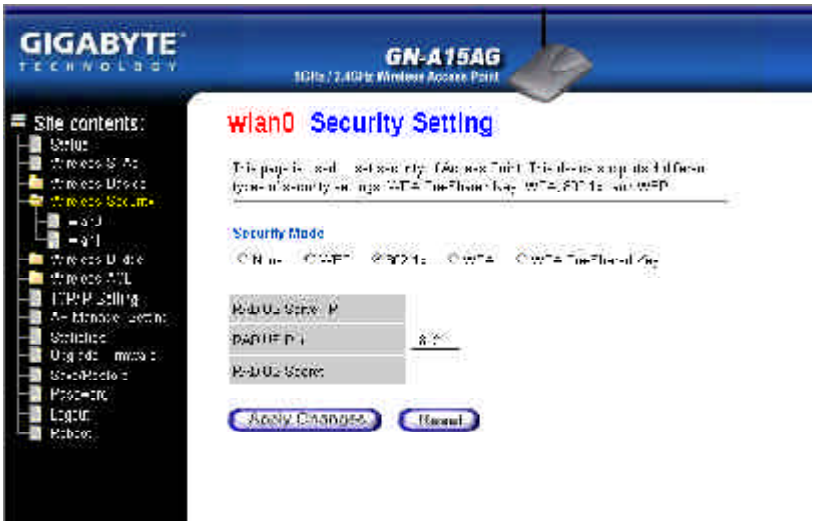
The 64 bits WEP encryption use 40 bits as a secret key, which can controlled by user, and 24 bits as the initialize vector, which user can not control. These two portions plus together is 64 bits encryption. Some other vendor's product might refer as 40 bits encryption. It is the same thing.

The 128 bits WEP encryption use 104 bits as a secret key, which can controlled by user, and 24 bits as the initialize vector, which user can not control. These two portions plus together is 128 bits encryption. Some other vendor's product might refer as 104 bits encryption. It is the same thing.

The 152 bits WEP encryption use 128 bits as a secret key, which can controlled by user, and 24 bits as the initialize vector, which user can not control. The 152 bits WEP encryption spawns a KEY ID containing 32 HEX digits.

Verify the desired setting and then click the "**Apply changes**" button to set the value into access point.

- **802.1x**



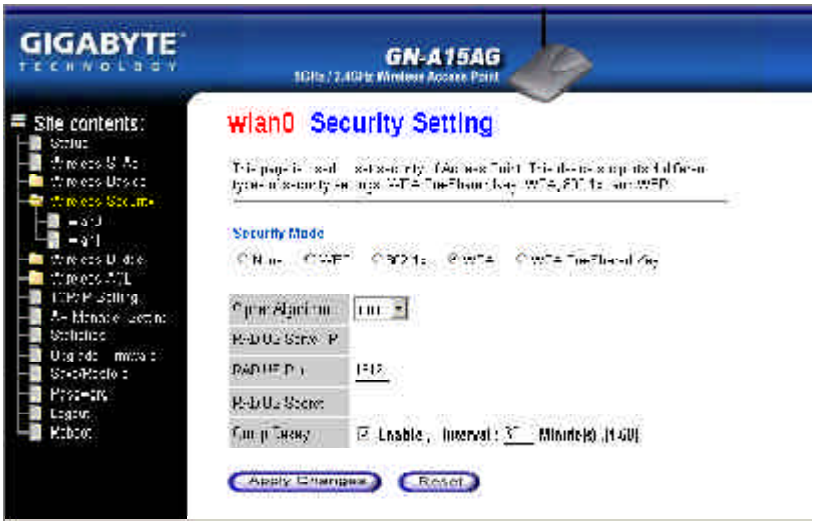
RADIUS server IP, Please assign a IP address to the primary RADIUS server (authentication server).

RADIUS Port, The setting range is 1~65536 and the default value is 1812.

RADIUS sercet, This filed can key in up to 256 character.

Verify the desired setting and then click the "**Apply changes**" button to set the value into access point.

■ **WPA**



Cipher Algorithm, There are three settings you can select : “TKIP”, “AES” and “Auto”.

RADIUS server IP, Please assign a IP address to the primary RADIUS server (authentication server).

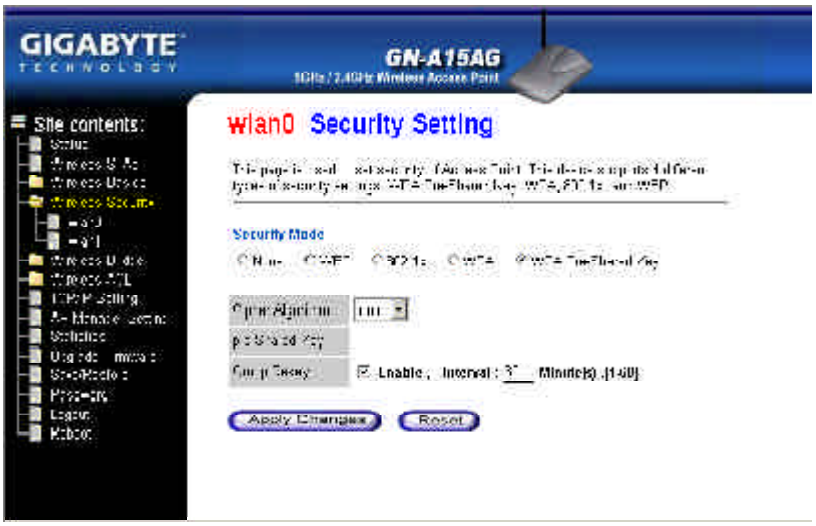
RADIUS Port, The setting range is 1~65536 and the default value is 1812.

RADIUS sercet, This filed can key in up to 256 character.

Group Rekey, If the Group Rekey is enabled, please enter a Rekey Interval (normally the unit is seconds).

Verify the desired setting and then click the “**Apply changes**” button to set the value into access point.

■ WPA Pre-Shared Key



Cipher Algorithm, There are three settings you can select : “TKIP”, “AES” and “Auto”.

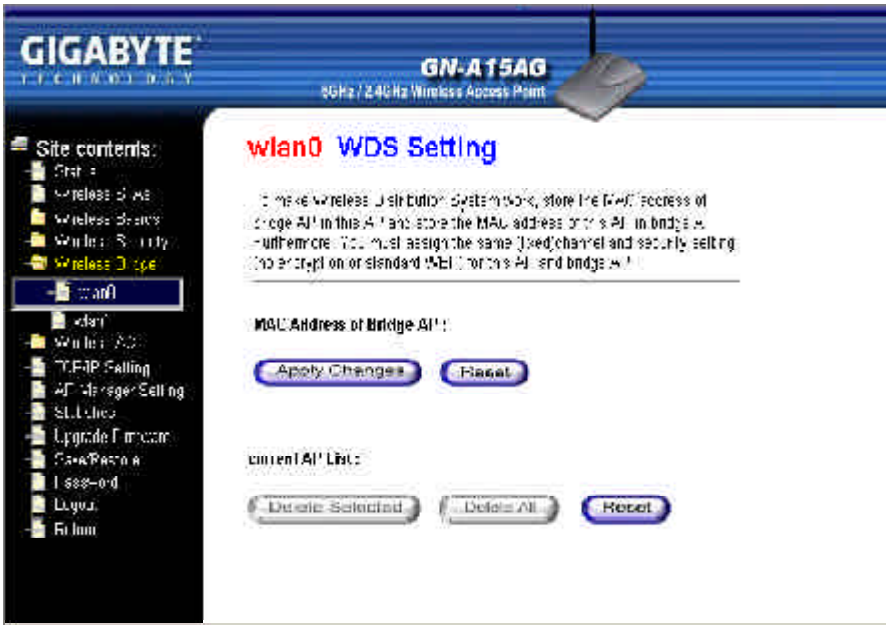
Pre-Shared Key, This filed can key in up to 256 character.

Group Rekey, If the Group Rekey is enabled, please enter a Rekey Interval (normally the unit is seconds).

Verify the desired setting and then click the “**Apply changes**” button to set the value into access point.

Wireless Bridge (WDS Setting)

To make Wireless Distribution System, please store the MAC addresses of bridge AP in this AP and store the MAC address of this AP in bridge AP. Furthermore, You have to assign the same (fixed) channel and security setting (no encryption or standard WEP) for this AP and bridge AP.



Add a MAC Address of bridge AP

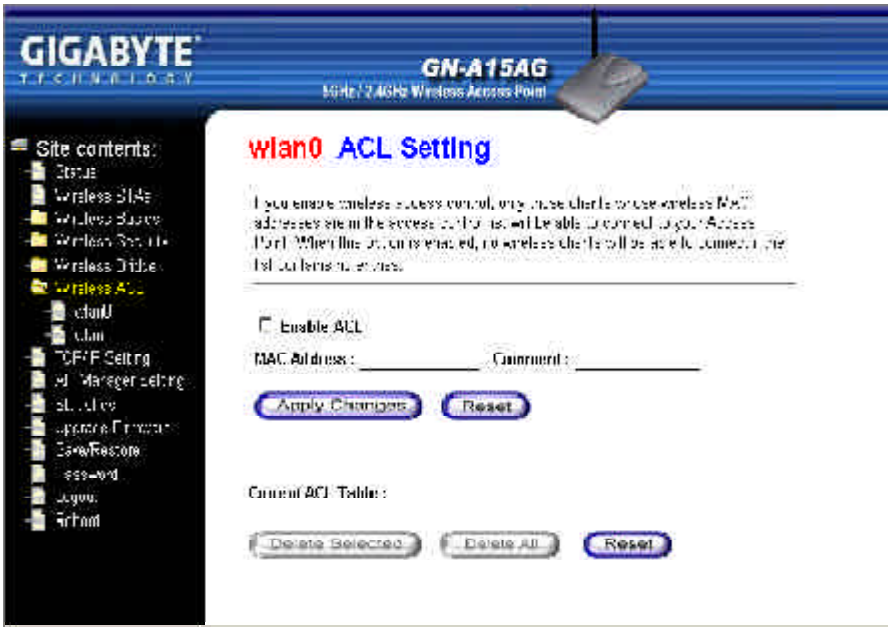
Input a MAC address of bridge AP. Verify the desired setting and then click the "**Apply Changes**" button to set the value into WDS list.

Delete the MAC Address

You can select which MAC address of AP you wish to delete then click "**Delete selected**" button. Or, you can click "**Delete All**" button to delete all the MAC address of AP in the list.

Wireless Access Control

For enhance the security of the wireless network, this AP provide the Wireless address control mechanism to prevent the unauthorized user access. Check "**Enable ACL**" and edit the Access Control list, then only those MAC address in the list are allowed to connect to this AP.



Add a MAC Address

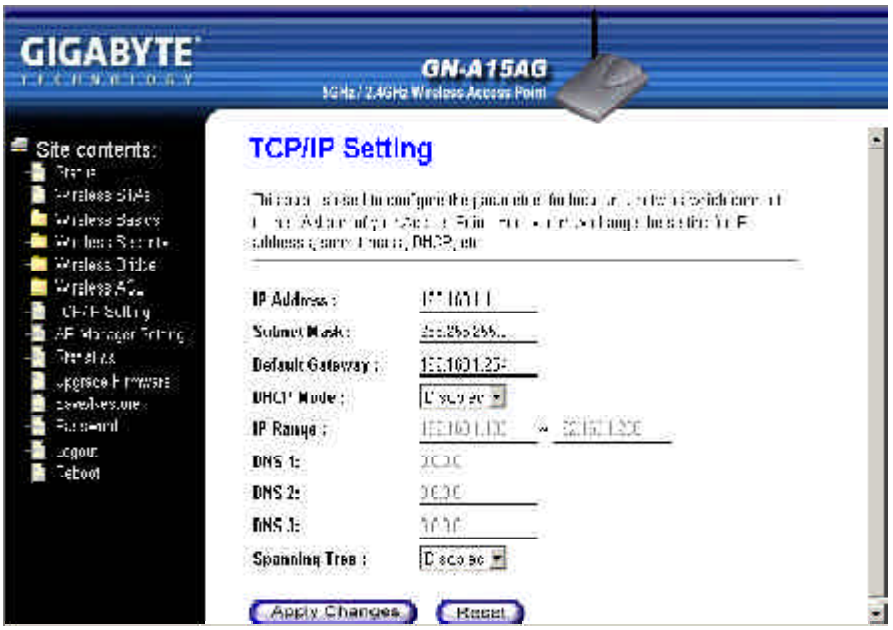
Input a MAC address and the comment of the client. Verify the desired setting and then click the "**Apply Changes**" button to set the value into Access Control list.

Delete the MAC Address

You can select which MAC address you wish to delete then click "**Delete selected**" button. Or, you can click "**Delete All**" button to delete all the MAC address in the list.

TCP/IP Settings

Each setup item of the local area network is the default settings, and is not necessary to make change to it for nomal operation.



IP Address & Subnet Mask

The values are the Access Point's IP Address and Subnet Mask. The default values are 192.168.1.1 for the IP Address and 255.255.255.0 for the Subnet Mask. You may need to assign a different Static IP address to each Access Point. But all devices on the network must have the same subnet mask to communicate on the network.

Gateway

Enter the IP address of the default route. The default gateway is 192.168.1.254

DHCP Mode

There are four settings under this option you can choose: "Disabled", "Client Enabled", "Server Enabled" and "Auto". Disabled is the default setting.

If you want to get IP address from the DHCP server automatically on your network, you will select "**Client Enabled**". Or you want to use the Access Point as a DHCP server to automatically assign dynamic IP address on the network, you will select "**Server Enabled**"

- ***DHCP Client Range & DNS***

  If you select the "Server Enabled" setting, please input the IP address range and the DNS for your network. The DNS information provied by your ISP company.

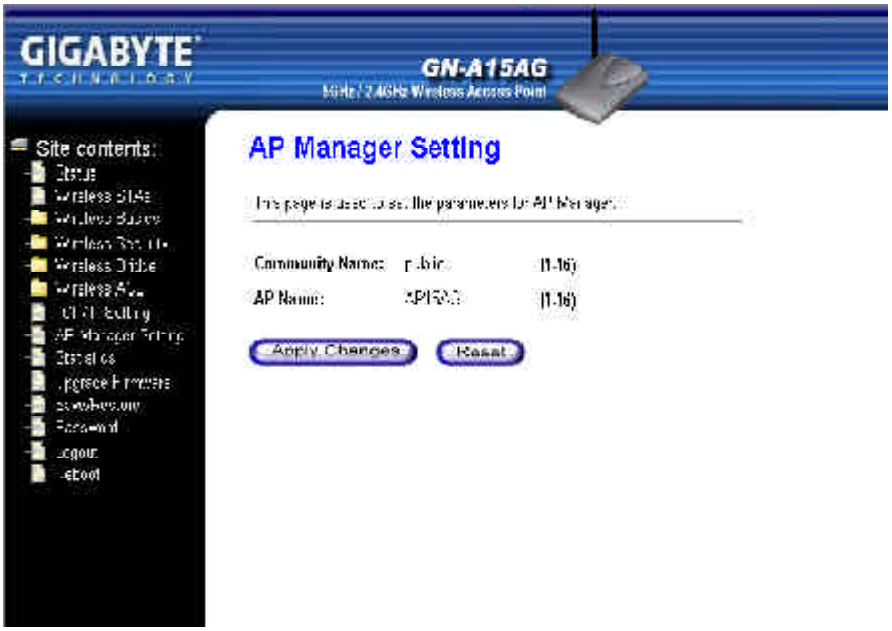
- ***Spanning Tree***

  Enabled or Disabled the Spanning Tree function. The default setting is Disabled.

Verify the desired setting and then click the "**Apply Changes**" button to set the value into access point.

AP Manager Setting

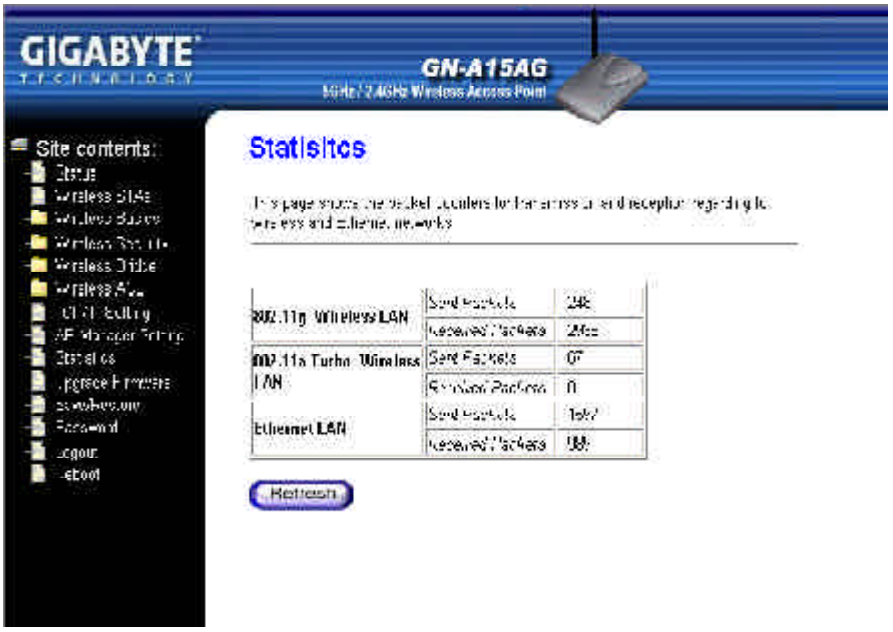
From this page, you can set the Community Name and AP Name for AP Manager.



Verify the desired setting and then click the "**Apply Changes**" button to set the value into access point.

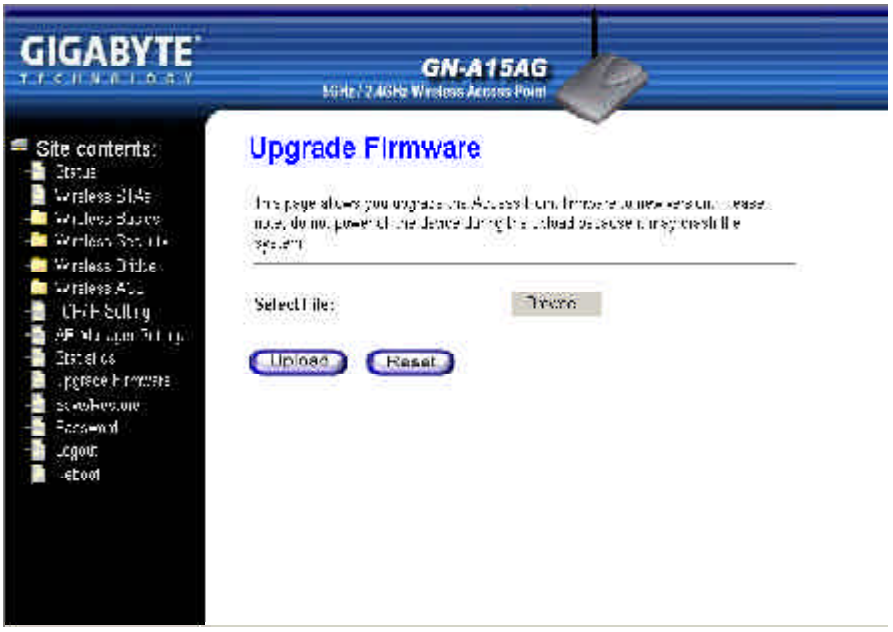
Statistics

From this page, you can veiew the packet count for the transmission of the Network.



Upgrade firmware

This tool allows you to upgrade the latest firmware of the Access Point using a file provided by Gigabyte. You can download the upgraded firmware version from Gigabyte website. Please click "**Browse**" and select your desired upgrade file (firmware version), and then click "**Upload**".



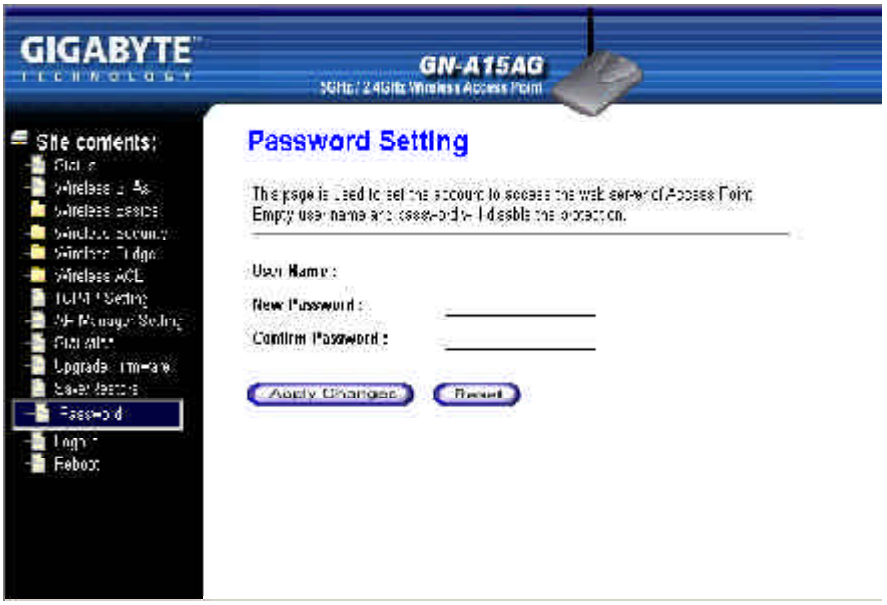
Save/ Reload Settings

This page allows you to save the current system settings as a file onto your computer. The saved file or any other saved setting file can be reloaded back on the Access Point. You may also restore the Access Point back to the factory settings.

Password

User can choose to set the administration password to prevent other user access to the Web-based configuration utility. Please enter a user name, new password and confirm password then press "**Apply Changes**" button. You have to enter this new password to log in when you want to configure the Access Point by Web-Based configuration utility next time.

Note: *If you don't want use the protection function, please keep the empty user name and password.*

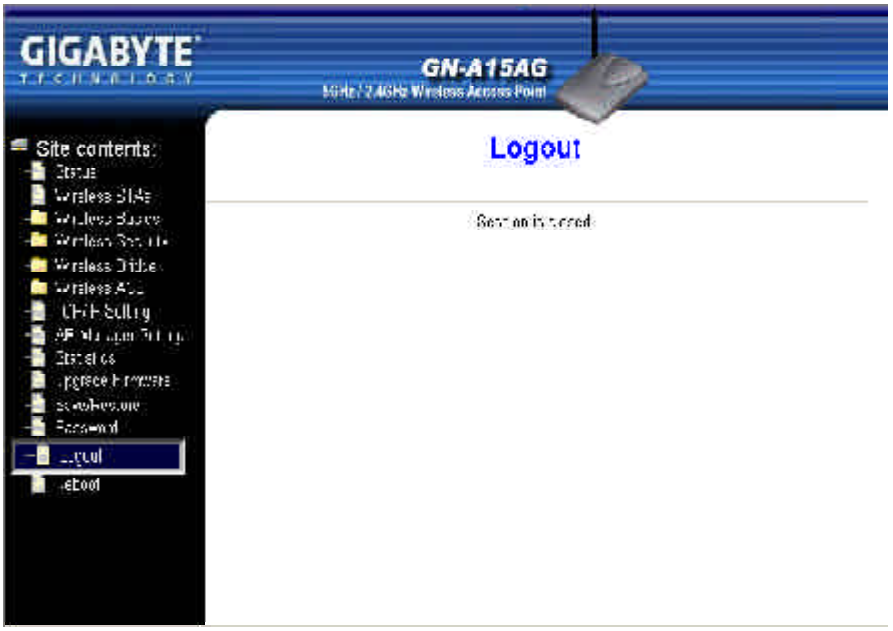


Reboot

Reboot this device for new firmware/setting to take effect. If the TCP/IP setting is changed, you must MANUALLY assign the new correct IP address for the web interface of this device.

Logout

As you finished the configuration of the Access Point, please choose "**Logout**".



Chapter5 Troubleshooting

This chapter gives information about troubleshooting your wireless Access Point. Read the descriptions below to help you diagnose and solve the problem.

Q: What to do if you forget your password or forget the IP address of the Access Point?

A: Please press the "**init**" bottom on the Access Point about 5 sec. The Access Point will be restart and the system setting will restore to the default value.

Q: Unable to connect to the Internet?

A:
1. Please confirm whether or not the power cord is connected properly, and the power indicating light of the Access Point is normal.
2. Please confirm whether or not all of the settings described in this manual are set.
3. Please confirm if ADSL or Cable Modem operates properly, and if the ISP network service expires.
4. Please confirm if your network cable is connected properly, and the LED status is normal.

Q: Unable to access the Access Point's Web Configuration Interface?

A:
1. Please check the Ethernet connection between the PC and the Access Point is correctness.
2. Make sure your computer's IP address is on the same subnet as the Access Point.
3. Make sure you are using the correct login information.

Q: What is the IEEE802.11b standard?

A: It also referred to as 802.11 High Rate or Wi-Fi. It is 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.

Q: What is WEP?

A: Wired Equivalent Privacy. Security mechanism defined within the 802.11 standard designed to make the link integrity of the wireless medium equal to wired cable. Data privacy mechanism based on a 40 bits (128 bit optional) shared key algorithm, as described in the IEEE 802.11 standard.

Q: What is the IEEE802.11g standard?

A: IEEE 802.11g standard specifies data rates of up to 54 Mbits/s in the 2.45-GHz band. It uses orthogonal frequency division multiplexing (OFDM), mandatory provisions have been made within the standard to make it inherently compatible with the well-established 802.11b standard at 11 Mbits/s, which uses complementary code keying (CCK) modulation. Both .11g and .11b operate at ranges of up to 300 feet.

Appendix A: Glossary

Access Point

An access point is a wired controller that sends data to the wireless NICs installed in your network computers, and received data back from them. An AP is often connected to the Network computer that has Internet access, or is directly connected to a ADSL or cable modem.

ADSL

Asymmetric digital subscriber line (ADSL) is a new modem technology that converts existing twisted-pair telephone lines into access paths for high-speed communications of various sorts.

Auto-MDI/MDIX

On a network hub or switch, an auto-MDI/MDIX port automatically senses if it needs to act as a MDI or MDIX port. The auto-MDI/MDIX capability eliminates the need for crossover cables.

Auto-negotiate

To automatically determine the correct settings. The term is often used with communications and networking.

DHCP

The Dynamic Host Configuration Protocol (DHCP) is an Internet protocol for automating the configuration of computers that use TCP/IP. DHCP can be used to automatically assign IP addresses, to deliver TCP/IP stack configuration parameters such as the subnet mask and default router, and to provide other configuration information such as the addresses for printer, time and news servers.

DSSS

Also known as “Direct Sequence Spread Spectrum,” this is a variety of radio transmission methods that continuously change frequencies or signal patterns. Direct Sequence Spread Spectrum (DSSS), which is used in CDMA, multiplies the data bits by a very fast, pseudo-random bit pattern (PN sequence) that “spreads” the data into a large coded stream that takes the full bandwidth of the channel.

DNS

The Domain Name System (DNS) is a distributed Internet directory service. DNS is used mostly to translate between domain names and IP addresses, and to control Internet email delivery. Most Internet services rely on DNS to work, and if DNS fails, web sites cannot be located and email delivery stalls.

Dynamic IP Address

An IP address that is automatically assigned to a client station in a TCP/IP network, typically by a DHCP server.

Firewall

A system designed to prevent unauthorized access to or from a private network. Firewalls can be implemented in both hardware and software, or a combination of both. Firewalls are frequently used to prevent unauthorized Internet users from accessing private networks connected to the Internet, especially intranets. All messages entering or leaving the intranet pass through the firewall, which examines each message and blocks those that do not meet the specified security criteria.

Gateway

A device, usually a router, that connects hosts on a local network to other networks.

IP Address

Every machine on the Internet has a unique identifying number, called an IP Address. A typical IP address looks like this: 216.27.61.137

MAC Address

On a local area network (LAN) or other network, the MAC (Media Access Control) address is your computer's unique hardware number. Usually written in the form 01:23:45:67:89:ab

Ping (Packet Internet Groper)

A utility to determine whether a specific IP address is accessible. It works by sending a packet to the specified address and waiting for a reply. PING is used primarily to trouble-shoot Internet connections.

Router

A device that forwards data packets along networks. A router is connected to at least two networks, commonly two LANs or WANs or a LAN and its ISP's network. Routers are located at gateways, the places where two or more networks connect.

SSID

The SSID is the name represent the router in the wireless network.

Subnet Mask

A mask used to determine what subnet an IP address belongs to. An IP address has two components, the network address and the host address. Subnetting enables the network administrator to further divide the host part of the address into two or more subnets.

TCP/IP

TCP/IP (Transmission Control Protocol/Internet Protocol), the suite of communications protocols used to connect hosts on the Internet.

WAN

Wide Area Network, a communication network that covers a relatively large geographic area, consisting of two or more LANs. Broadband communication over the WAN is often through public networks such as the ADSL or Cable systems, or through leased lines or satellites. In its most basic definition, the Internet could be considered a WAN.

WEP

WEP (Wired Equivalent Privacy) is a data privacy mechanism based on a 64/128-bit shared key algorithm, as described in the IEEE 802.11 standard.

Appendix B: Specification

Physical Interface

The Wireless Access Point includes 1 RJ-45 Ethernet LAN ports, one init hole and one antenna.

Item	Feature	Description
1.	LAN Port x 1	RJ-45, Auto-sensing for 10/100M Ethernet LAN connection.
2.	Init Bottom	Initial reset
3.	Wireless	1 external dual-band antenna and 2 internal bulit-in printed antenna.

System Specification

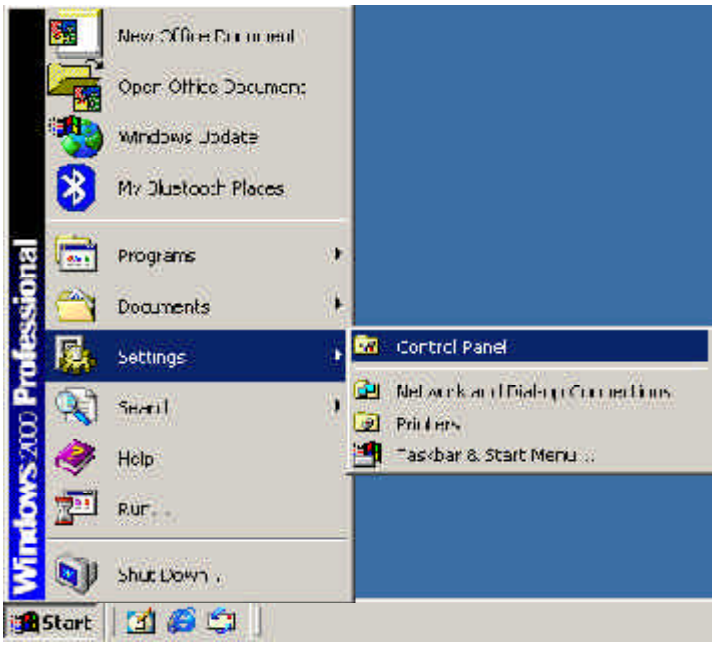
System	
Power Adapter	5VDC-2A
LEDs	Power, WLAN1, WLAN2, and LAN
RF- 802.11a	
Frequency Bands	5150 ~ 5850 MHz (subject to local regulations)
Modulation Technology	OFDM
Modulation Techniques	64QAM, 16QAM, QPSK, BPSK
Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps, auto fallback Turbo mode: 108, 96, 72, 48, 36, 24, 18, 12 Mbps
Peak Output power	18 dBm @ Nominal Temp Range at antenna connector
Receive Sensitivity	- 66 dBm @ 54 Mbps date rate at nominal temp range
RF- 802.11g	
Frequency Bands	2412 ~ 2484 MHz (subject to local regulations)
Modulation Technology	OFDM and DSSS
Modulation Techniques	64QAM, 16QAM, QPSK, BPSK, CCK, DQPSK, DBPSK
Data Rates	54, 48, 36, 24, 18, 12, 9, 6, 11, 5.5, 2, 1 Mbps, auto fallback Turbo mode: 108, 96, 72, 48, 36, 24, 18, 12 Mbps
Peak Output power	19 dBm @ Nominal Temp Range at antenna connector
Receive Sensitivity	-73 dBm @ 54 Mbps date rate at nominal temp range
Safety Regulation and Operating Environment	
EMC certification	FCC part 15 (USA) CE (Europe)
Temperature Range	Operating: 0 ~ 55 degree C, Storage: -20 ~ 65 degree C
Humidity	10% ~ 90% Non-condensing
Mechanical	
Packaging	Packaging specially used by Gigabyte
Gross Weight	320± 5g
Dimension	178mm x 132mm x 43mm

Appendix C: Configuration of the PCs

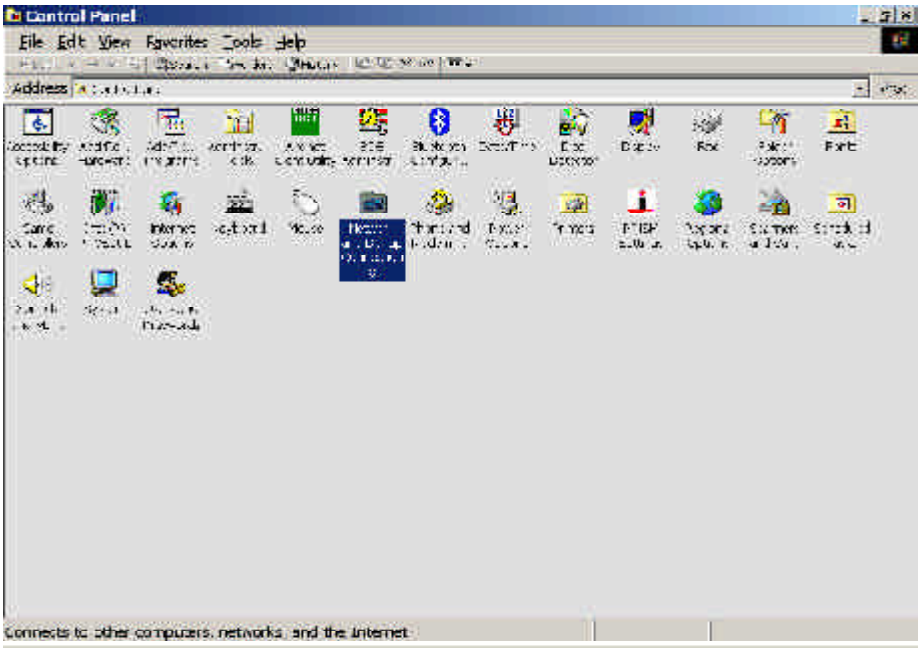
To connect to the Access Point, you may need to configure your computer on the same subnet as Access Point. Please follow the instructure to perform the setup under the TCP/IP network environment. By default Windows 98, Me, 2000 and XP has TCP/IP installed. If you have not installed the TCP/IP communication Protocol, please install it now, and then select your operating system for the setup.

The Setting under Windows 2000

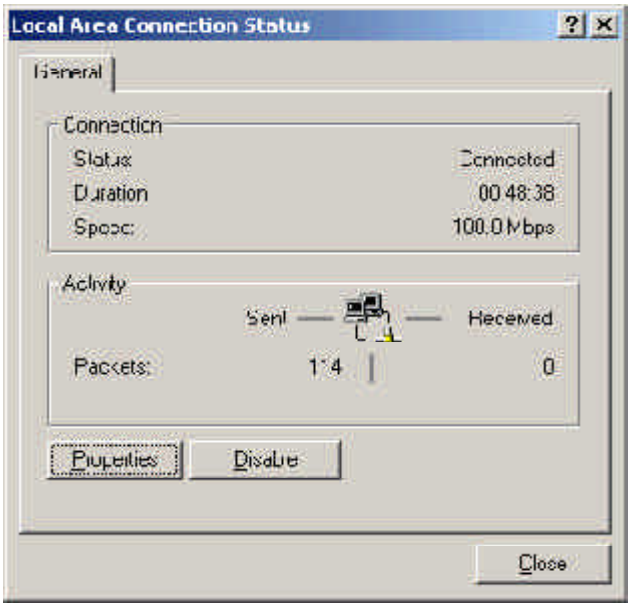
Step1. Click "**Start**" in the desktop of the Windows to select "**Settings**", and then select "**Control Panel**".



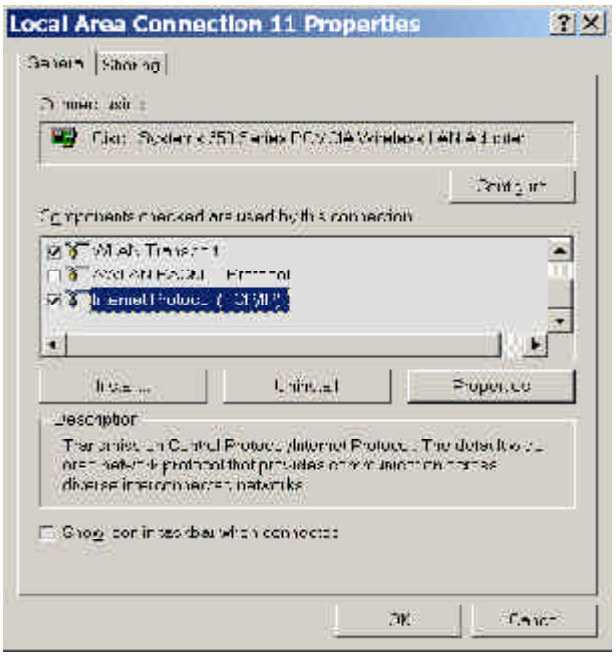
Step2. Double-click the "**Network and Dial-up Connections**" icon.



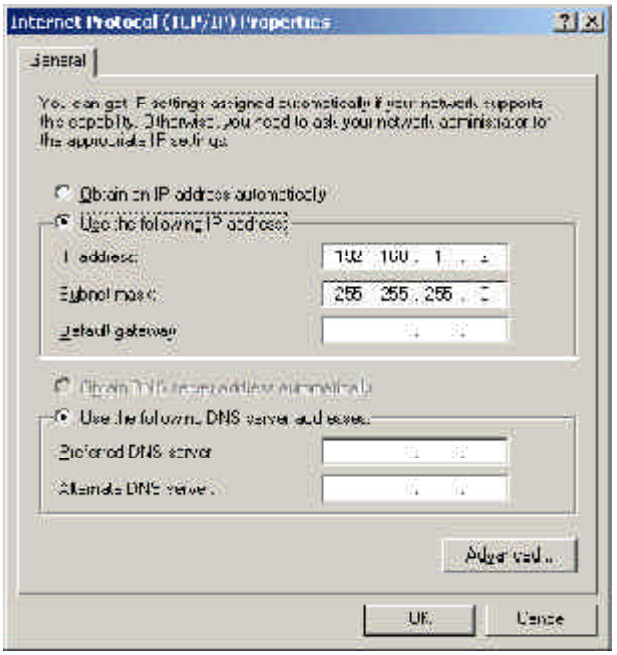
Step3. Double-click the "**LAN CONNECTION**" and click the "**Properties**" button.



Step4. The "**Local Area Connection Properties**" dialog box will appear. Verfiy that the Internet Protocol (TCP/IP) item is checked. And then double-click the "**Internet Protocol (TCP/IP)**" item.



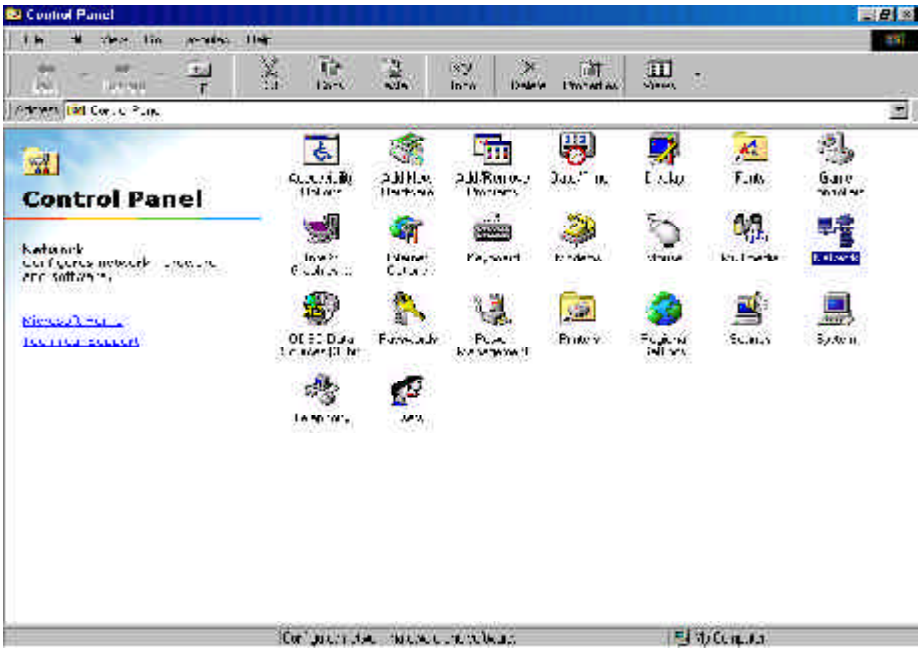
Step5. Please assign a static IP address and the same subnet as Access Point to the computer (e.g, IP address is 192.168.1.2 and Subnet Mask is 255.255.255.0), and then click the "**OK**" button to return to Local Area Connection Properties. Click the "**OK**" button again to complete the PC configuration.



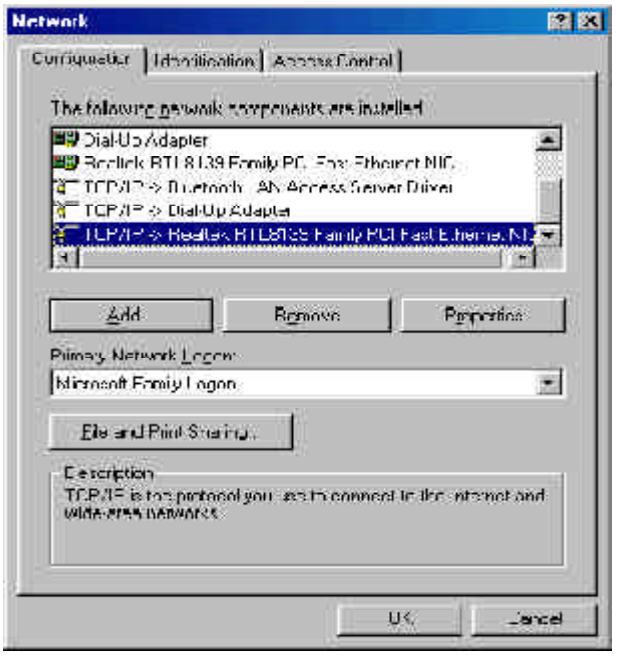
The Settings under Windows 95/98/Me

Step1. Click "**Start**" at the desktop of the Windows and select "**Settings**", and then select the "**Control Panel**".

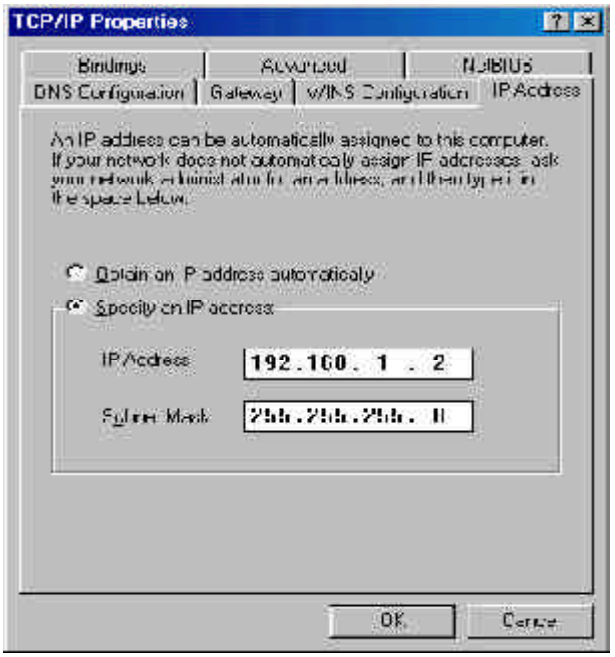
Step2. Double-click the "**Network**" icon.



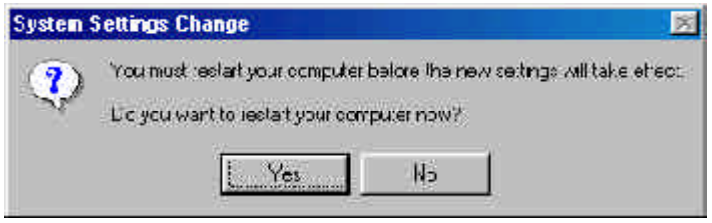
Step3. On the Configuration tab, please choose your appropriate setting "**TCP/IP-> your network LAN card**" and click "**Properties**" button.



Step4. Select the "**IP Address**" tab. Please assign a static IP address and the same subnet as Access Point to the computer (e.g, IP address is 192.168.1.2 and Subnet Mask is 255.255.255.0), and then click the "**OK**" button.



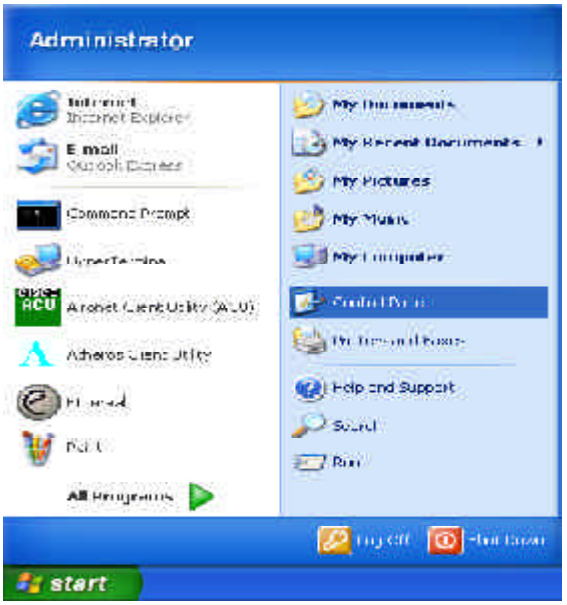
Step5. Click the "**OK**" button again. Windows will ask you to restart your PC. Please click the "**Yes**" button. If Windows does not ask you to restart , please restart your computer anyway.



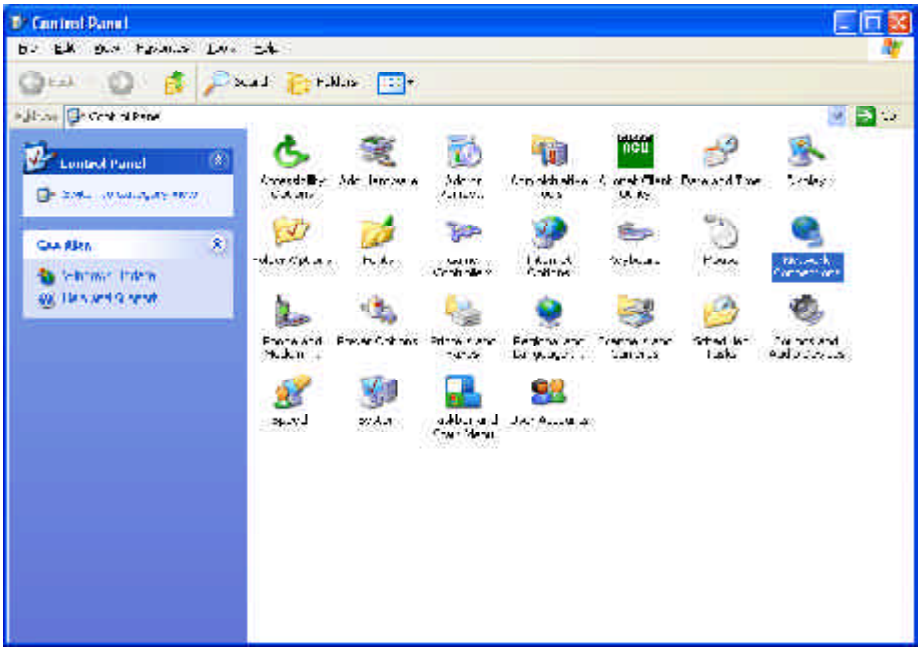
Note: *The Windows may ask you for the original Windows installation disk or additional files. Please insert your Windows CD-ROM into your CD-ROM drive and check the correct location, e.g., D:\win98, D:\win9x, etc. (If "D" is your CD-ROM drive).*

The Settings under Windows XP

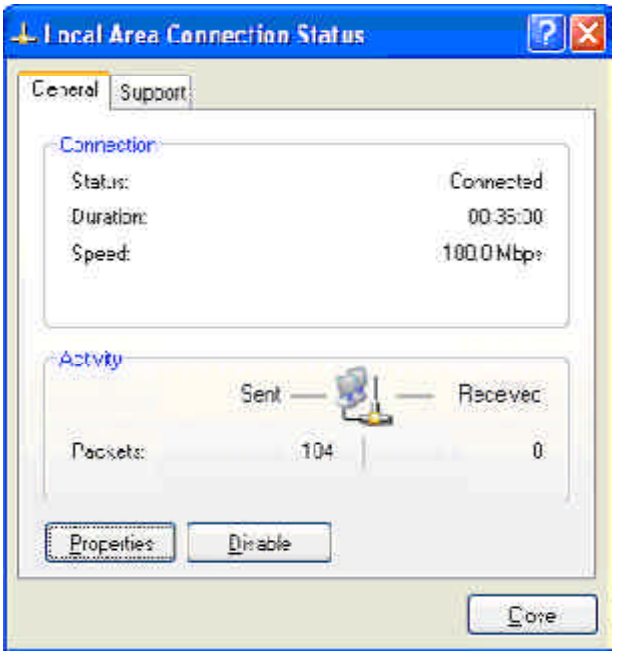
Step1. Click "**Start**" in the desktop of the Windows to select "**Settings**", and then select "**Control Panel**".



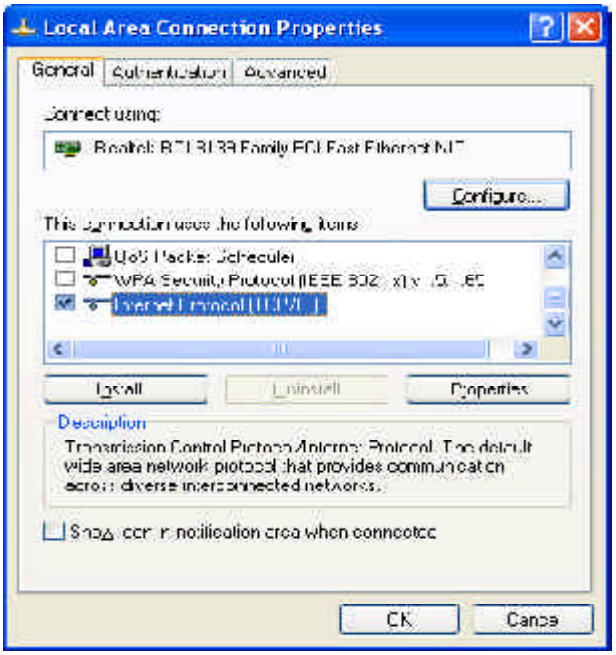
Step2. Double-click the "**Network and Dial-up Connections**" icon.



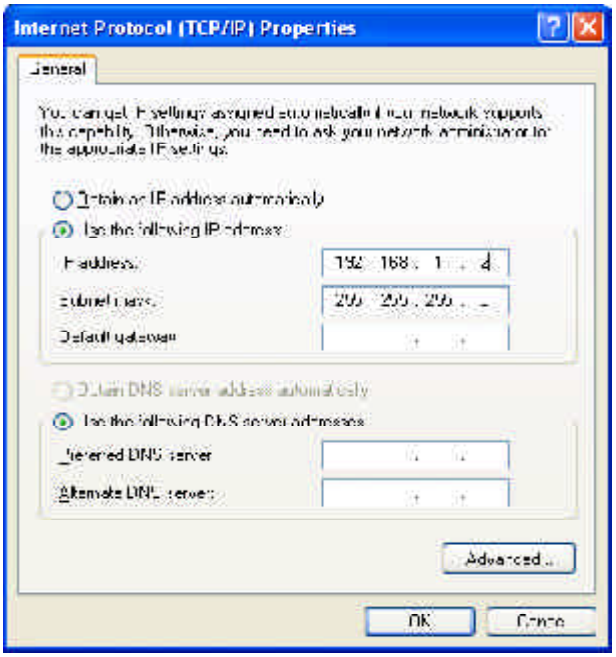
Step3. Double-click the "**LAN CONNECTION**" and click the "**Properties**" button.



Step4. The "**Local Area Connection Properties**" dialog box will appear. Verfiy that the Internet Protocol (TCP/IP) item is checked. And then double-click the "**Internet Protocol (TCP/IP)**" item.



Step5. Please assign a static IP address and the same subnet as Access Point to the computer (e.g, IP address is 192.168.1.2 and Subnet Mask is 255.255.255.0), and then click the "**OK**" button to return to Local Area Connection Properties. Click the "**OK**" button again to complete the PC configuration.



Limited Warranty

1-Year Warranty

Gigabyte warrants to the original consumer/purchaser that the product free from defects in material and workmanship for no limited time from the original manufactory shipment date. This warranty does not cover the product if it is damaged in the process of being installed or improperly used.

Gigabyte may replace or repair the product with either new or reconditioned parts. Repaired or replaced products will be returned to you at the same revision level as received or higher at Gigabyte's option. Gigabyte reverses the right to replace discounted products with an equivalent generation product.

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