

Wireless AP User Manual

**V1.0
2009-7-30**

Package Contents

The following items should be found in your package

- One Wireless AP
- One DC 9v power adapter
- One QIG
- One CD

Please make sure that the package contains the above items, if any of the listed items are damaged or missing, please contact with your distributor.

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1. Introduction

1.1. Product Overview

Thank you for purchasing this Wireless AP. This Wireless AP is a cost-effective IP Sharing AP that enables multiple users to share a wireless Internet or Intranet. Simply configure your Internet connection settings in the Wireless AP and plug your PC to the LAN port and you're ready to share files and access the Internet. As your network grows, you can connect another hub or switch using the wireless, allowing you to easily expand your network. The Wireless AP is 802.11b/g wireless AP, up to 54Mbps wireless data transmit rate, support 6 wireless modes: AP、WDS、AP+WDS、Repeater、Client Ad-hoc and Client Infrastructure. The design is dedicated to Small Office/Home Office (SOHO) Wireless network solution. The 802.11g Wireless AP will allow you to connect your network wirelessly better than ever.

1.2. Main Features

- Supplies to IEEE 802.11b/g standards
- Supports 54/48/36/24/18/12/9/6/11/5.5/2/1Mbps wireless LAN data transfer rates
- Supports Auto MDI/MDIX
- Support basic DHCP server Settings
- Supports firmware upgrade
- Supports Web management
- Provides 64/128-bit WEP encryption security
- Provides WPA/WPA2 authentication and TKIP/AES encryption security

1.3. Supporting Standard and Protocol

- IEEE802.3
- IEEE802.3u
- IEEE802.3x
- TCP/IP, DHCP, ICMP, NAT, PPPoE
- IEEE 802.11b
- IEEE802.11g

1.4. Working Environment

Temperature

- 0° to 40° C (operating),
- -40° to 70° C (storage)

Humidity

- 10% to 90 % non-condensing (operating),
- 5% to 90% non-condensing (storage)

Power

- DC 9V

2. Hardware Installation

2.1. System Requirement

- TCP/IP protocol installed for each PC
- Internet Explorer 5.0 or higher for Web configuration
- 802.11g or 802.11b compliant wireless adapters (for wireless connection)
- Windows 98/2000/XP/2003/Vista or higher operating system

2.2. Panel

Front panel

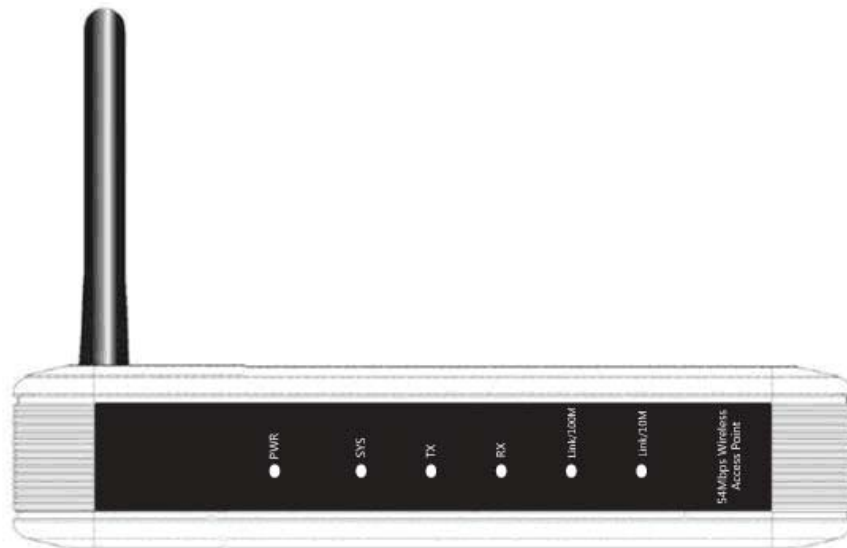


Figure 2-1

LED	Function	
PWR	On	Power on
	Off	Power off
SYS	On	CPU is on
	Off	CPU is off
Tx	Flashing	Data transmitting

	Off	No data transmitting
Rx	Flashing	Data transmitting
	Off	No data transmitting
Link/100M	On	It indicates the AP works on 100M mode
	Off	It indicates the AP doesn't work on 100M mode
Link/10M	On	It indicates the AP works on 10M mode
	Off	It indicates the AP doesn't work on 10M mode

Rear panel

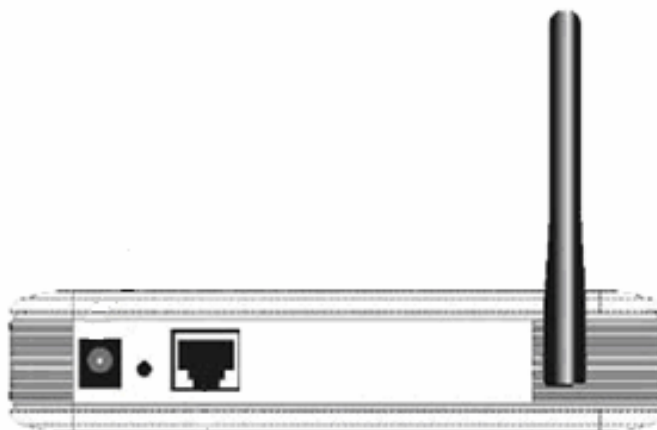


Figure 2-2

Description	Function
PWR port	Connect to Power adapter, please don't use the unknown power adapter, otherwise your device may be damaged.
LAN port	Connect with computer NIC or Ethernet device
Default	Restore settings, please press the button for about 10 seconds, it will restore settings to the factory configuration
Antenna	

2.3. Hardware Installation Procedures

The procedures to install the Wireless AP please refer to Figure 2-3

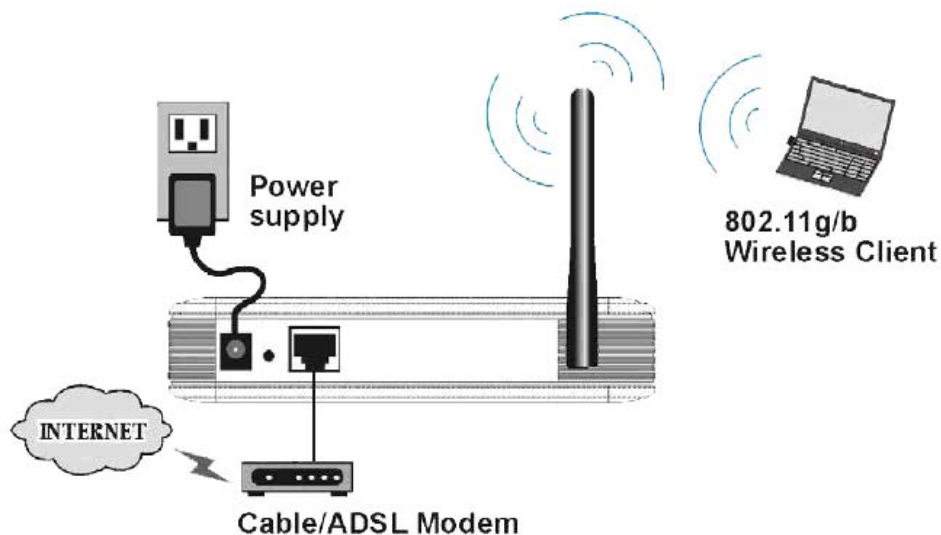


Figure 2-3

Step 1 connecting your computer to the LAN port.

Attach one end of the Ethernet cable with RJ-45 connector to your hub, switch or a computer's Ethernet port, and the other end to one of the LAN ports of your Wireless AP

Step 2 connecting the power adapter.

Connect the single DC output connector of the power adapter to the power jack on the Wireless AP. Then plug the Power Adapter into an AC outlet.

Step 3 Power on the following devices in this order:

Wireless AP and PCs

3. Login

You can manage the Wireless AP through the Web browser-based configuration utility. To configure the device via Web browser, at least one properly configured computer must be connected to the device via Ethernet or wireless network. The Wireless AP configured with the **default IP address of 192.168.1.1** and **subnet mask of 255.255.255.0** and its **DHCP server is enabled** by default. Before setting up the AP, make sure your PCs are configured to obtain an IP address automatically from the AP by the steps below.

3.1. Configure computer

3.1.1. Windows 98/Me

1. Go to Start → Settings → Control Panel.
2. Find and double-click the Network icon. The Network dialog box appears.
3. Click the Configuration label and ensure that you have network card.
4. Select TCP/IP. If TCP/IP appears more than once, please select the item that has an arrow “→” pointing to the network card installed on your computer. **DO NOT** choose the instance of TCP/IP with the words “Dial Up Adapter” beside it.
5. Click Properties. The TCP/IP Properties dialog box appears.
6. Ensure the Obtain IP Address Automatically is checked.
7. From the WINS Configuration dialog box, Ensure that Disable WINS Resolution is checked.
8. From the Gateway dialog box, remove all entries from the Installed gateways by selecting them and clicking Remove.
9. From the DNS Configuration dialog box, remove all entries from the DNS Server Search Order box by selecting them and clicking Remove. Remove all entries from the Domain Suffix Search Order box by selecting them and clicking Remove. Click Disable DNS.
10. Click OK, back to Network Configuration dialog box
11. Click OK, if prompted to restart, click YES.

3.1.2. Windows 2000

Please follow the steps below to setup your computer:

1. Go to Start → Settings → Control Panel



Figure 3-1

2. Double click the icon Network and Dial-up Connections
3. Highlight the icon Local Area Connection, right click your mouse, and click Properties

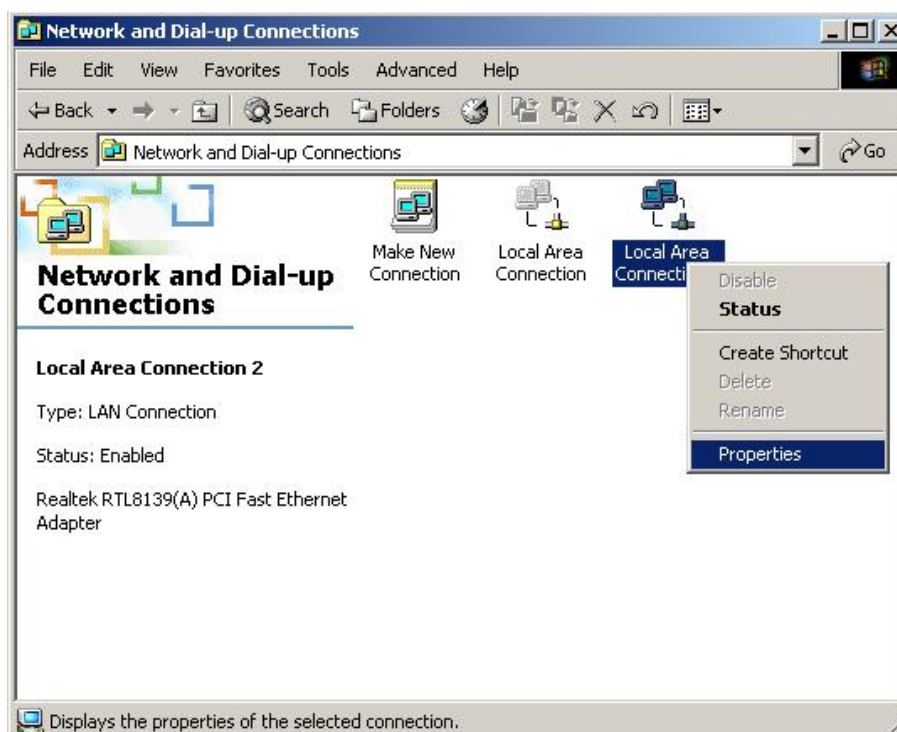


Figure 3-2

4. Highlight Internet Protocol (TCP/IP), and then press Properties button



Figure 3-3

5. Choose Obtain an IP address automatically and Obtain DNS server address automatically, and then press OK to close the Internet Protocol (TCP/IP) Properties window

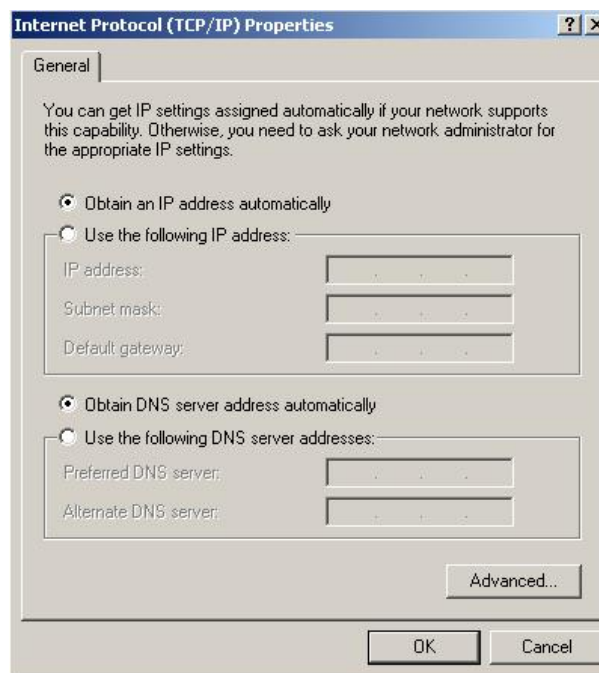


Figure 3-4

6. Press OK to close the Local Area Connection Properties window



Figure 3-5

3.1.3. Windows XP

Please follow the steps below to setup your computer:

1. Go to Start → Settings → Control Panel
2. Click Network and Internet Connections

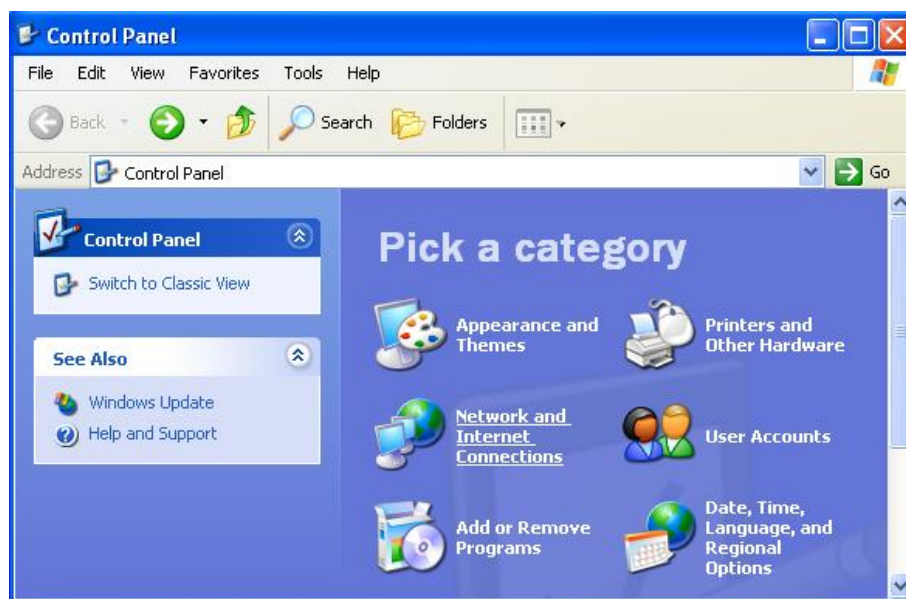


Figure 3-6

3. Click Network Connections



Figure 3-7

4. Highlight the icon Local Area Connection, right click your mouse, and click Properties

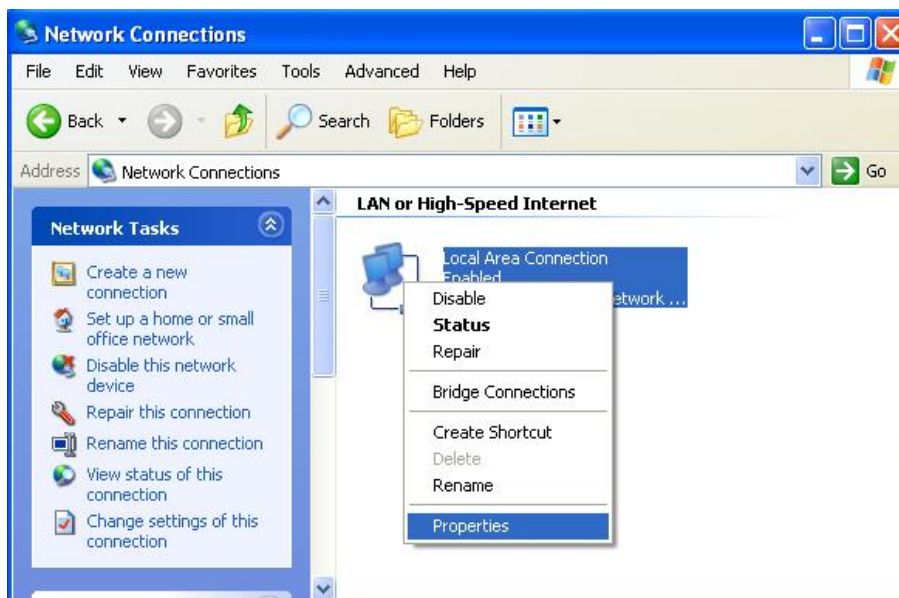


Figure 3-8

5. Highlight Internet Protocol (TCP/IP), and then press Properties button

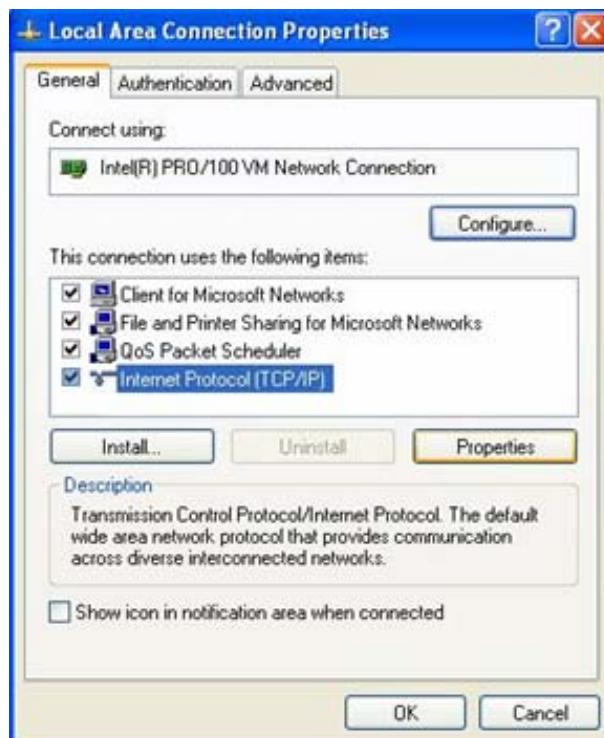


Figure 3-9

6. Choose Obtain an IP address automatically and Obtain DNS server address automatically, and then press OK to close the Internet Protocol (TCP/IP) Properties window

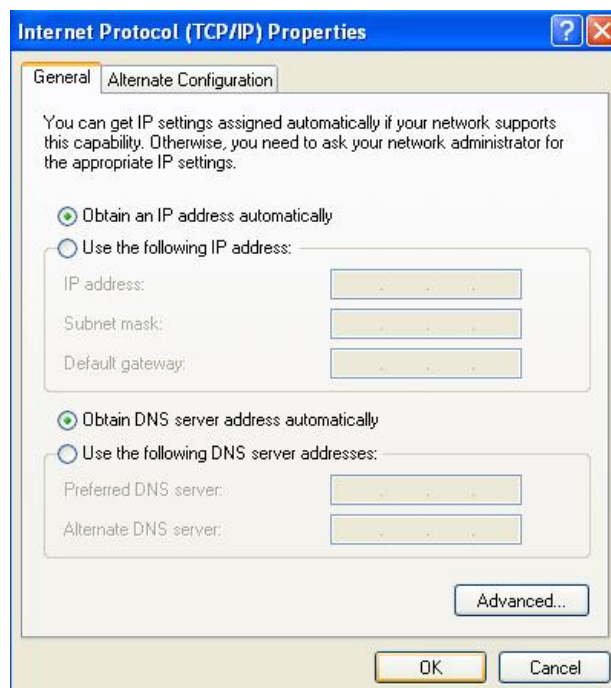


Figure 3-10

7. Press OK to close the Local Area Connection Properties window

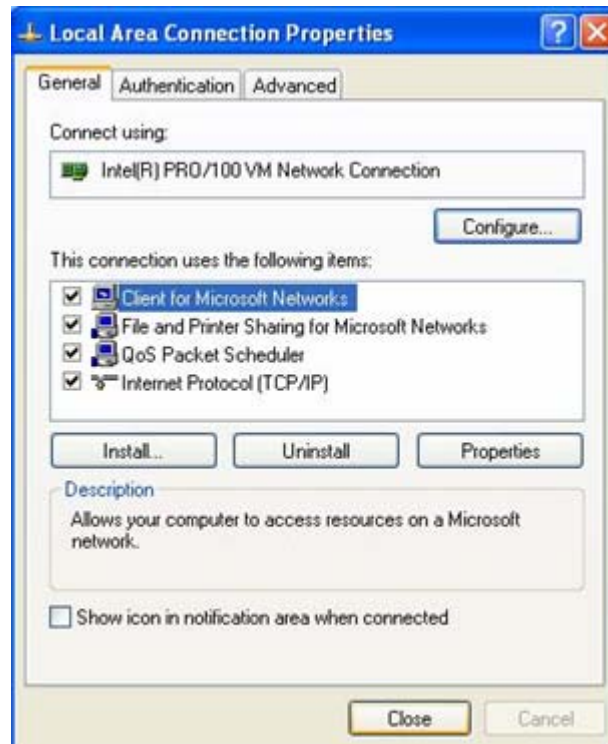


Figure 3-11

3.1.4. Windows Vista

Please follow the steps below to setup your computer:

1. Go to Start → Settings → Control Panel
2. Click Network and Sharing Center

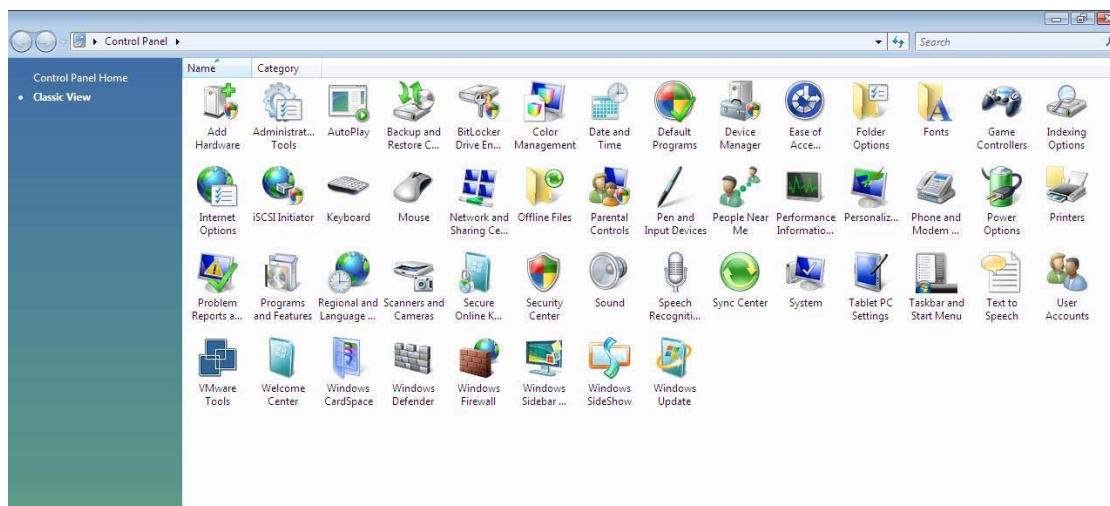


Figure 3-12

3. Click Manage Network Connections

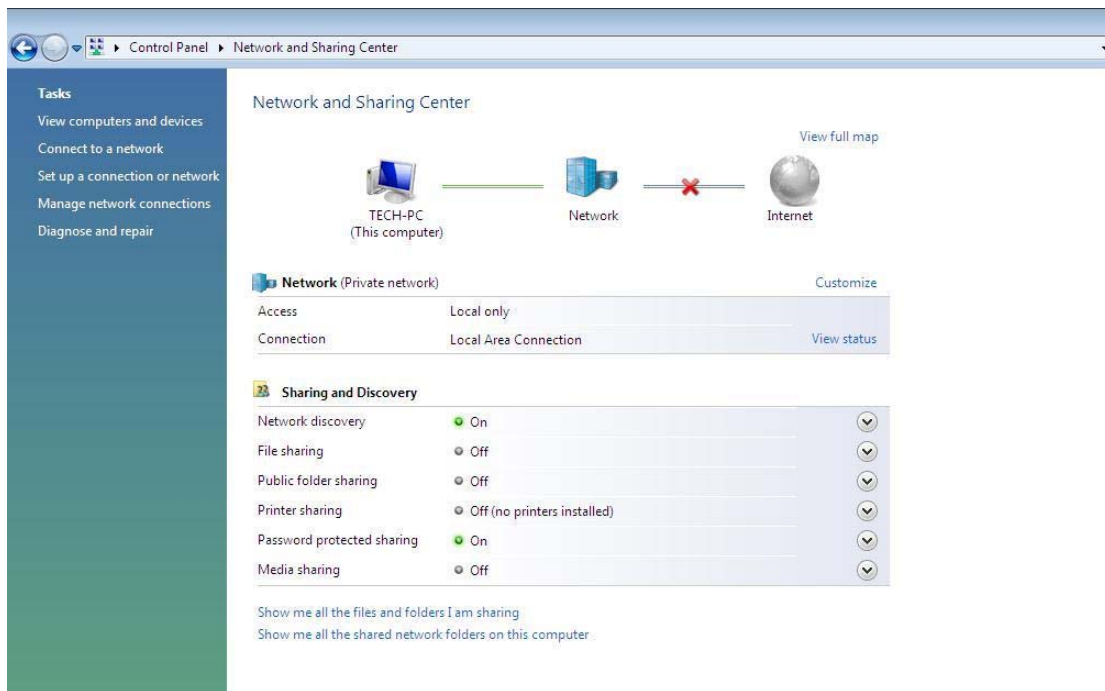


Figure 3-13

4. Highlight the icon Local Area Connection, right click your mouse, and click Properties

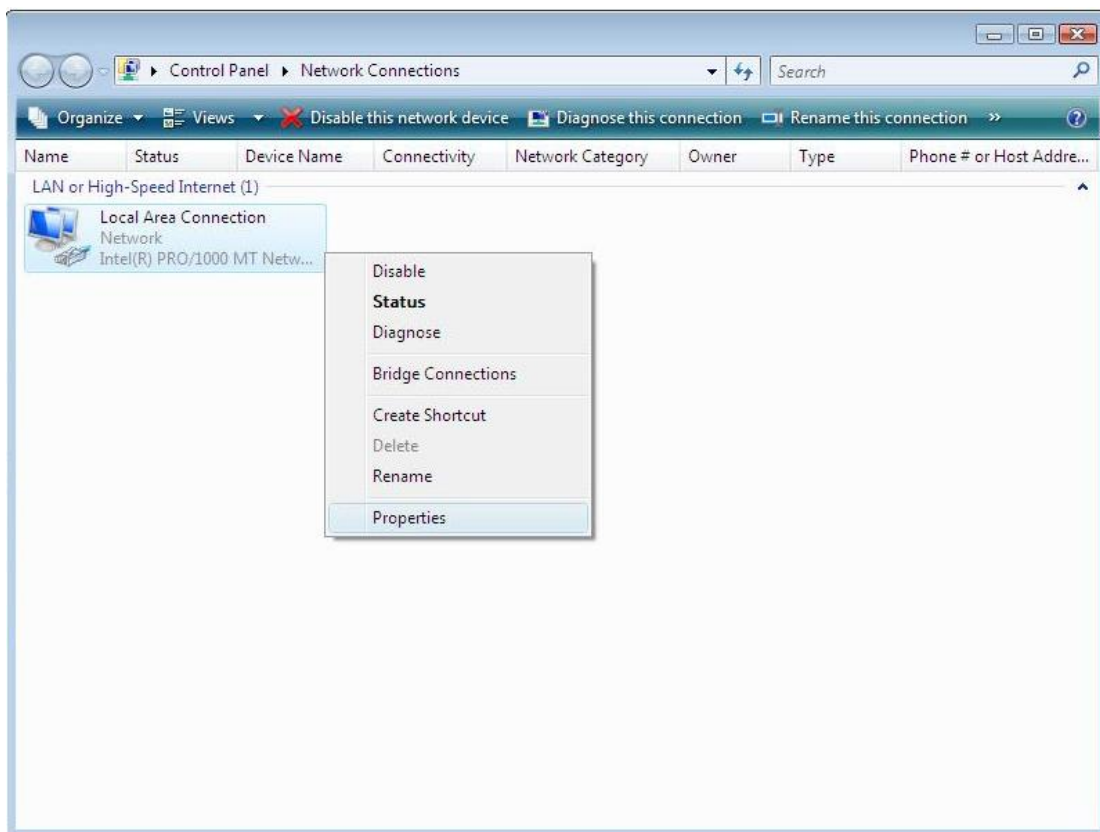


Figure 3-14

5. Highlight Internet Protocol Version 4 (TCP/IP) and then press Properties button

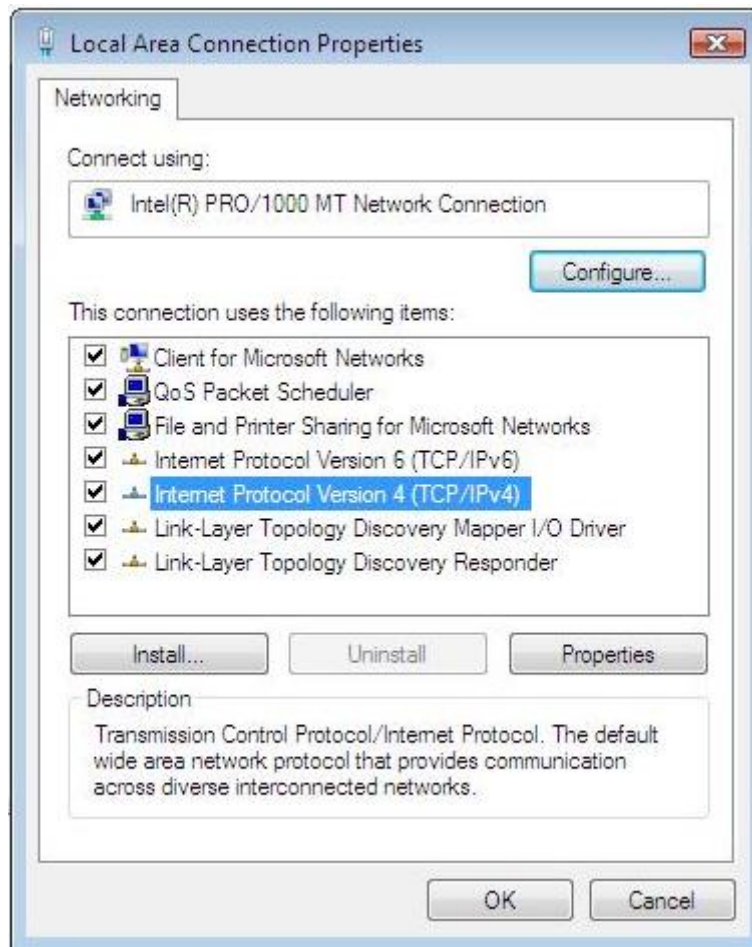


Figure 3-15

6. Choose Obtain an IP address automatically and Obtain DNS server address automatically, and then press OK to close the Internet Protocol (TCP/IP) Properties window

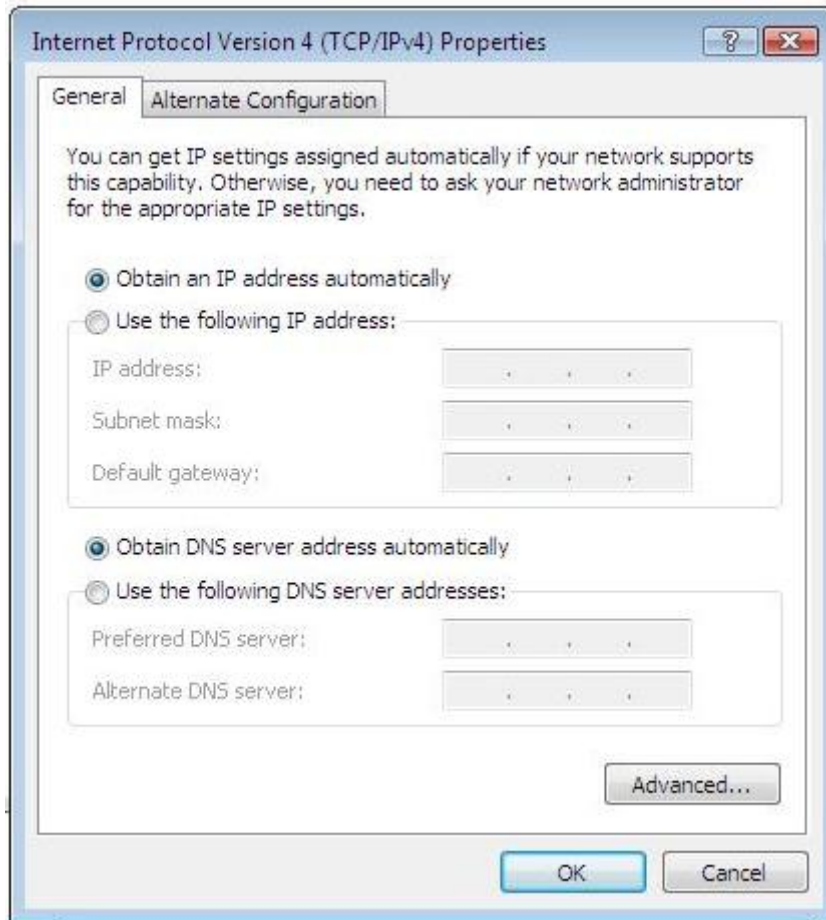


Figure 3-16

7. Press OK to close the Local Area Connection Properties window

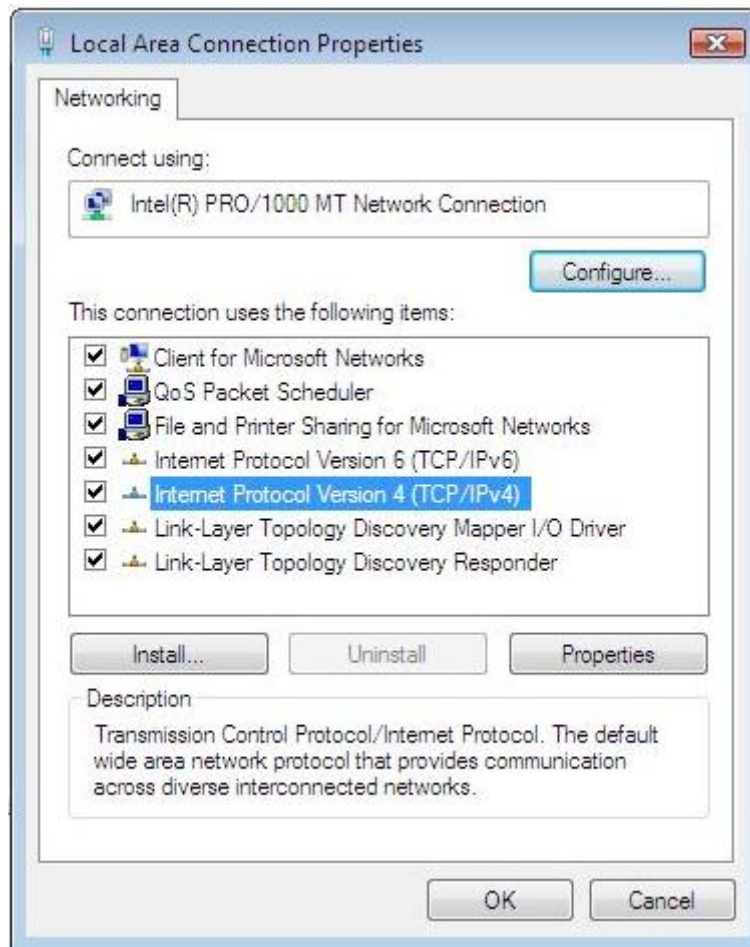


Figure 3-17

3.1.5. Checking PC's IP and Connection with the AP

After configuring the TCP/IP protocol, use the ping command to verify if the computer can communicate with the AP. To execute the ping command, open the DOS window and ping the IP address of the Wireless AP at the DOS prompt:

- For Windows 98/Me: Start -> Run. Type command and click OK.
- For Windows 2000/XP: Start -> Run. Type cmd and click OK.

At the DOS prompt, type the following command:

If the Command window returns something similar to the following:

```
C:\Documents and Settings\admin>ping 192.168.1.1
```

```
Pinging 192.168.1.1 with 32 bytes of data:
```

```
Reply from 192.168.1.1: bytes=32 time=1ms TTL=64
```

```
Reply from 192.168.1.1: bytes=32 time=1ms TTL=64
Reply from 192.168.1.1: bytes=32 time=1ms TTL=64
Reply from 192.168.1.1: bytes=32 time=1ms TTL=64

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 1ms, Average = 1ms
```

Then the connection between the AP and your computer has been successfully established.

If the computer fails to connect to the AP, the Command window will return the following:

```
C:\Documents and Settings\admin>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

Verify your computer's network settings are correct and check the cable connection between the AP and the computer.

In order to make the whole network operate successfully, it is necessary to configure the Wireless AP through your computer has a WEB browser installed. Please follow up the steps listed below.

3.2. Login

1.Startup Internet Explorer, and enter <http://192.168.1.1>, then press Enter

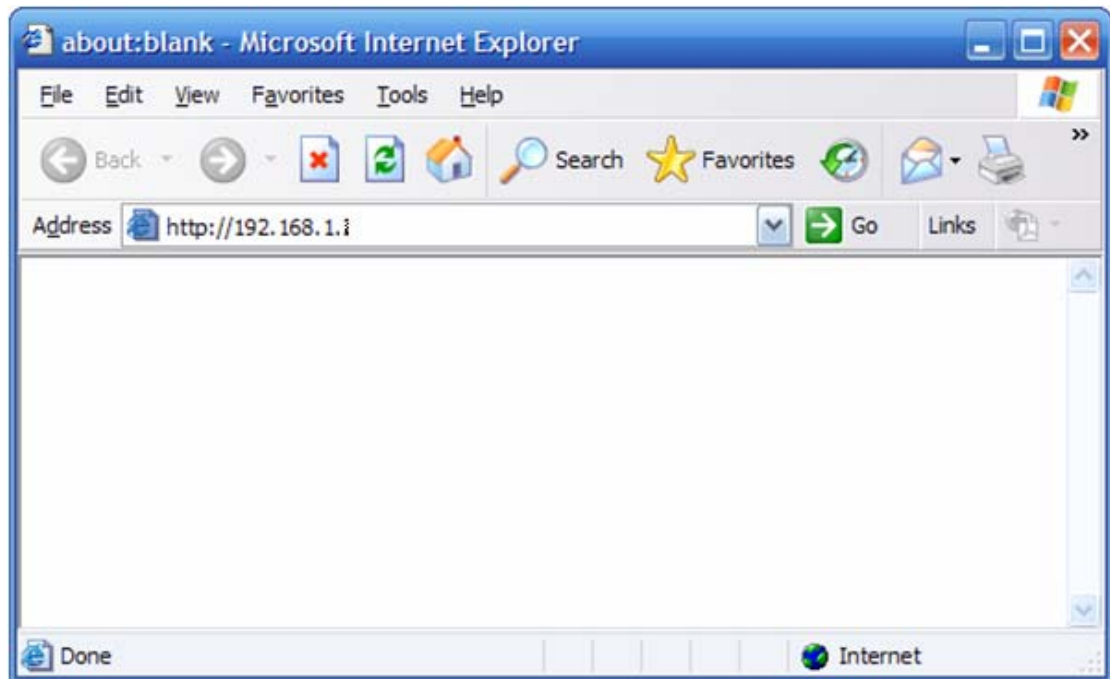


Figure 3-18

2. You will enter the user name and password. The default user name is guest, password is guest, too. You can't modify your user name but can modify your password. You need to modify your password when you successfully log in, in case anyone else may do harm to your AP



Figure 3-19

3. After successful login, you will be able to see the Wireless AP's web-based configuration utility refer to Figure 3-20. From now on the Wireless AP acts as a Web server sending HTML pages/forms at your request. You can click the menu options at the left to start the configuration task.

In the home page of the Wireless AP, the left navigation bar shows the main options to configure the system. In the right navigation screen is the summary of system status for viewing the configurations.

The screenshot displays the 'AP' configuration interface. On the left is a vertical menu with buttons for 'Status', 'LAN Setup', 'Radio', 'Security', 'WDS', 'MAC Filter', 'Site Survey', 'Client Info', 'Advanced', and 'MISC'. The 'Status' button is highlighted. The main content area has two tabs: 'Status' (selected) and 'Statistics'. A 'Help' button is in the top right corner. The 'Status' tab is divided into three sections: 'LAN Status', 'Wireless Status', and 'SYSTEM INFO'. Each section contains a table of configuration details.

LAN Status	
Physical Address	00-e0-4c-81-86-d1
LAN IP Address/SubnetMask	192.168.1.1 / 255.255.255.0
DHCP Server	ON. IP Pools: 192.168.1.100 - 192.168.1.163

Wireless Status	
Wireless	Start
Connection	No Wireless Client Connection
MAC	00-e0-4c-81-86-d1
Radio Band	802.11B/G
SSID	default
Channel	6
Mode	AP
Security	AP:none

SYSTEM INFO	
Edition Info	APR-R282-V1.1.09EN, 2009.04.08 17:42.

Figure 3-20

4. System Configuration

4.1. Status

4.1.1. Status

The Status section allows you to monitor the current status of your AP. You can use the Status page to monitor the connection status of the AP's LAN interfaces, the current firmware and so on.

LAN Status	
Physical Address	00-e0-4c-81-86-d1
LAN IP Address/SubnetMask	192.168.1.1 / 255.255.255.0
DHCP Server	ON, IP Pools: 192.168.1.100 - 192.168.1.163

Wireless Status	
Wireless	Start
Connection	Associated Wireless Station: 1
MAC	00-e0-4c-81-86-d1
Radio Band	802.11B/G
SSID	default
Channel	6
Mode	AP
Security	AP:none

SYSTEM INFO	
Edition Info	APR-R282-V1.1.09EN, 2009.04.08 17:42.

Figure 4-1

4.1.2. Statistics

View the statistics of packets sent and received on LAN and WLAN.

Type	Sent Packets	Received Packets	Sent Bytes (KBytes)	Received Bytes (KBytes)
LAN	666	753	256	84
WLAN	59	1466	2	115

Figure 4-2

4.2. LAN Setup

4.2.1. LAN setup

The LAN Port screen below allows you to specify a private IP address for your AP's LAN port as well as a subnet mask for your LAN segment.

Figure 4-3

➤ System IP Address

This is the AP's LAN port IP address (Your LAN clients default gateway IP address), the default is 192.168.1.1

➤ Subnet Mask

Specify a Subnet Mask for your LAN segment

➤ DHCP Server

You can enable or disable the DHCP server. By enabling the DHCP server the AP will automatically give your LAN clients an IP address.

➤ DHCP Client Range

You can select a particular IP address range for your DHCP server to issue IP addresses to your LAN Clients.

➤ Default Gateway

The default is blank

4.2.2. DHCP info

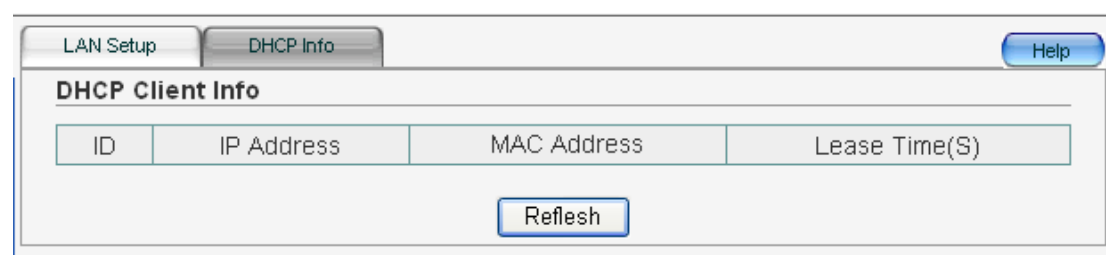


Figure 4-4

Here shows all the DHCP Client info, IP Address, MAC Address and Lease Time

4.3. Radio

4.3.1. Basic Setting

You can configure your basic settings for you AP. It contains the following things: Radio band, Radio Mode, channel.

➤ Radio Band

It allows you to set the AP fix at 802.11b or 802.11g mode. You also can select B+G mode to allow the AP select 802.11b and 802.11g connection automatically.

➤ Radio Mode

It allows you to set the Wireless AP to AP, Client, WDS , AP+WDS mode .or Repeater .The default is AP mode, it is the most common wireless mode in wireless networks connection

4.3.1.1. AP

Basic

Help

Basic Setting

Disabled Wireless Apply

Radio Band	802.11b/g
Radio Mode	AP
Booster Mode	<input checked="" type="checkbox"/> (Enabled this mode can enhance the throughput of data transmission.)
After configuring basic parameters, please config Authentication and Encryption mode, to setup Valid and Safe wireless connection.	
SSID	default
Broadcast SSID	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled
Region	Asia(1-14)
ABS: Select best wireless channel according to current wireless environment automatically, as well as adjust appropriate transmit power.	
ABS best Channel	Channel
Channel	Manual Select Channel 6
IAPP	<input type="checkbox"/> Enabled 802.11f
Apply	

Figure 4-5

After configuring basic parameters, please configure Authentication and Encryption mode to setup Valid and Safe wireless connection.

➤ SSID

Service Set ID. It uniquely identifies a logical network domain name of your WLAN. The default value is default.

➤ Broadcast SSID

When wireless clients survey the local area for wireless networks to associate with, they will detect the SSID broadcast by the AP. To broadcast the SSID, keep the default setting, Enable. If you do not want to broadcast the SSID, then select Disable.

➤ Region

There are three regions: Asia, USA, Europe. You can select a region that you need, but they are different channel.

➤ Channel

- ✧ ABS(Auto Best Space)

After select ABS mode, AP will search best channel in current wireless environment when AP start-up.

✧ Manual Select

Select appropriate area according to your location. For example, the range in North America is 1-11, in Asia is 1-14.

➤ IAPP

If you enable “IAPP”, it will allow wireless station roaming between IAPP enabled access points within the same wireless LAN.

4.3.1.2. Client

Basic Setting	
<input type="checkbox"/> Disabled Wireless	<input type="button" value="Apply"/>
Radio Band	802.11b/g ▼
Radio Mode	Client ▼
Booster Mode	<input checked="" type="checkbox"/> (Enabled this mode can enhance the throughput of data transmission.)
After configuring basic parameters, please config Authentication and Encryption mode, to setup Valid and Safe wireless connection. You can use "Association Table" to search valid wireless network.	
SSID	default
NetWork Type	Infrastructure ▼
<input type="button" value="Apply"/>	

Figure 4-6

After configuring basic parameters, please configure Authentication and Encryption mode to setup Valid and Safe wireless connection.

You can use "Association Table" to search valid wireless network

➤ SSID

Service Set ID. It uniquely identifies a logical network domain name of your WLAN. The default value is default.

➤ Network Type

There are two types, infrastructure and Ad-Hoc. The default is infrastructure

4.3.1.3. WDS

The screenshot shows a web interface for configuring a Wireless AP. The 'Basic Setting' tab is active. At the top right is a 'Help' button. Below the tab title is a 'Basic Setting' section. It starts with a checkbox for 'Disabled Wireless' and an 'Apply' button. Below this is a table of configuration options:

Radio Band	802.11b/g
Radio Mode	WDS
Booster Mode	<input checked="" type="checkbox"/> (Enabled this mode can enhance the throughput of data transmission.)
After configuring basic parameters, please config Authentication and Encryption mode, to setup Valid and Safe wireless connection. Select "WDS Setting" page to check and manage wireless bridge, establish wireless bridge connection.	
Region	Asia(1-14)
Channel	Channel 6

At the bottom of the table is an 'Apply' button.

Figure 4-7

After configuring basic parameters, please configure Authentication and Encryption mode to setup Valid and Safe wireless connection.

Select "WDS Setting" page to check and manage wireless bridge establish wireless bridge connection

➤ Region

There are three regions: Asia, USA, Europe .You can select a region that you need, but they are different channel.

➤ Channel

Select appropriate area according to your location. For example, the range in North America is 1-11, in Asia is 1-14

4.3.1.4. AP+WDS

Basic Setting	
<input type="checkbox"/> Disabled Wireless	<input type="button" value="Apply"/>
Radio Band	802.11b/g ▼
Radio Mode	AP+WDS ▼
Booster Mode	<input checked="" type="checkbox"/> (Enabled this mode can enhance the throughput of data transmission.)
<p>AP+WDS mixed mode. The same effect as enable both AP and WDS mode. In this mode, The part of AP's encryption in accordance with the encryption of AP mode. The part of WDS' encryption in accordance with the encryption of WDS mode.</p> <p>Steps to configured AP+WDS mode.</p> <ol style="list-style-type: none"> 1. Configured "AP" mode parameters. 2. Configured "WDS" mode parameters. 3. Enabled "AP+WDS" mode. 	
SSID	default
Broadcast SSID	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled
Region	Asia(1-14) ▼
Channel	Channel 6 ▼
<input type="button" value="Apply"/>	

Figure 4-8

AP+WDS mixed mode .The same effect as enable both AP and WDS mode.

In this mode, the part of AP's encryption in accordance with the encryption of AP mode. The part of WDS' encryption in accordance with the encryption of WDS mode.

Steps to configured AP+WDS mode:

1. Configured "AP" mode parameters.
2. Configured "WDS" mode parameters.
3. Enabled "AP+WDS" mode.

➤ **SSID**

Service Set ID. It uniquely identifies a logical network domain name of your WLAN. The default value is default.

➤ **Broadcast SSID**

When wireless clients survey the local area for wireless networks to associate with, they will detect the SSID broadcast by the AP. To broadcast the SSID, keep the default setting, Enable. If you do not want to broadcast the SSID, then select Disable.

➤ **Region**

There are three regions: Asia, USA, Europe .You can select a region that you need, but they are different channel.

➤ Channel

Select appropriate area according to your location. For example, the range in North America is 1-11, in Asia is 1-14

4.3.1.5. Repeater

Basic Setting	
<input type="checkbox"/> Disabled Wireless	<input type="button" value="Apply"/>
Radio Band	802.11b/g ▼
Radio Mode	Repeater ▼
Booster Mode	<input checked="" type="checkbox"/> (Enabled this mode can enhance the throughput of data transmission.)
After configuring basic parameters, please config Authentication and Encryption mode, to setup Valid and Safe wireless connection.	
SSID	default
Broadcast SSID	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled
Repeater-SSID	
Region	Asia(1-14) ▼
ABS: Select best wireless channel according to current wireless environment automatically, as well as adjust appropriate transmit power.	
ABS best Channel	Channel
Channel	Manual Select ▼ Channel 6 ▼
IAPP	<input type="checkbox"/> Enabled 802.11f
<input type="button" value="Apply"/>	

Figure 4-9

After configuring basic parameters, please configure Authentication and Encryption mode to setup Valid and Safe wireless connection.

➤ SSID

Service Set ID. It uniquely identifies a logical network domain name of your WLAN. The default value is default.

➤ Broadcast SSID

When wireless clients survey the local area for wireless networks to associate with, they will detect the SSID broadcast by the AP. To broadcast the SSID, keep the default setting, Enable. If

you do not want to broadcast the SSID, then select Disable.

➤ Region

There are three regions: Asia, USA, Europe .You can select a region that you need, but they are different channel.

➤ Channel

✧ ABS (Auto Best Space)

After select ABS mode, AP will search best channel in current wireless environment when AP start-up

✧ Manual Select

Select appropriate area according to your location. For example, the range in North America is 1-11, in Asia is 1-14

➤ IAPP

If you enable “IAPP”, it will allow wireless station roaming between IAPP enabled access points within the same wireless LAN

4.4. Security

This Access Point provides complete wireless LAN security functions, include WEP, 802.1X Enterprise, WPA personal, WPA Enterprise, WPA2 personal, WPA2 Enterprise , WPA&WPA2 personal, WPA&WPA2 Enterprise .With these security functions, you can prevent your wireless LAN from illegal access. Please make sure your wireless stations use the same security function.

4.4.1. None

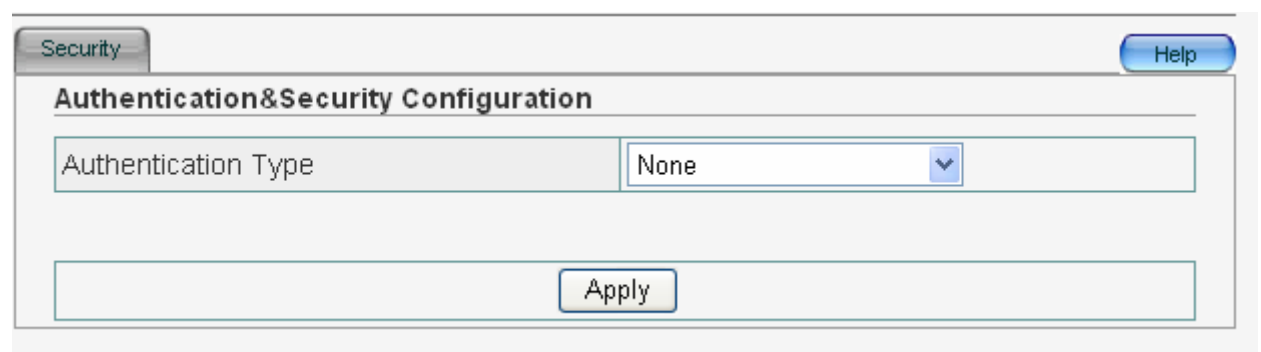


Figure 4-10

4.4.2. WEP

When you select 64-bit or 128-bit WEP key, you have to enter WEP keys to encrypt data. You can generate the key by yourself and enter it. You can enter four WEP keys and select one of them as default key. Then the AP can receive any packets encrypted by one of the four keys

Authentication & Security Configuration	
Authentication Type	WEP
Accessorial Authentication & Encryption	Open System
Open System	
Key Length	<input checked="" type="radio"/> 64 bits <input type="radio"/> 128 bits
WEP Mode	<input checked="" type="radio"/> HEX <input type="radio"/> ASCII
Key 1	<input checked="" type="radio"/> <input type="text"/>
Key 2	<input type="radio"/> <input type="text"/>
Key 3	<input type="radio"/> <input type="text"/>
Key 4	<input type="radio"/> <input type="text"/>
Key format is 10 Hex-Number, every Hex-Number can be 0-9 and A-F Key format is 13 Character	
<input type="button" value="Apply"/>	

Figure 4-11

➤ Accessorial Authentication & Encryption

If you select Authentication Type, there are three Accessorial Authentication (Open System, Shared Key, auto Select).

➤ KEY length

64-bit and 128-bit. The higher the encryption bit, the more secure your network

➤ WEP Mode

1. Key format is Hex-Number, only digits 0-9 and letters A-F, a-f are allowed.
2. Key format is ASCII.

➤ Key 1 - Key 4

The WEP keys are used to encrypt data transmitted in the wireless network. Fill the text box by following the rules: 64-bit WEP: input 10-digit Hex values (in the "A-F", "a-f" and "0-9" range) or 5-digit ASCII character as the encryption keys. 128-bit WEP: input 26-digit Hex values (in the "A-F", "a-f" and "0-9" range) or 13-digit ASCII characters as the encryption keys.

4.4.3. 802.1X Enterprise

IEEE 802.1x is an authentication protocol. Every user must use a valid account to login to this Access Point before accessing the wireless LAN. The authentication is processed by a RADIUS server. This mode also uses WEP to encrypt the data during communication.

Authentication & Security Configuration

Authentication Type: 802.1X Enterprise

802.1X Setup

Radius Server IP	<input type="text"/>
Radius Port	1812
Radius Password	<input type="text"/>
WEP Encryption	<input checked="" type="radio"/> Disabled <input type="radio"/> 64 bit WEP <input type="radio"/> 128 bit WEP

Apply

Figure 4-12

➤ **RADIUS Server IP**

The IP address of external RADIUS server

➤ **RADIUS port**

The service port of the external RADIUS server

➤ **RADIUS Password**

The password used by external RADIUS server

For the WEP settings, please refer to section [WEP](#)

4.4.4. WPA Personal

Wi-Fi Protected Access (WPA) is an advanced security standard. You can use a pre-shared key to authenticate wireless stations and encrypt data during communication. It uses TKIP or CCMP (AES) to change the encryption key frequently. So the encryption key is not easy to be broken by hackers. This can improve security very much.

Authentication&Security Configuration	
Authentication Type	WPA Personal <input type="button" value="v"/>
Accessorial Authentication & Encryption	TKIP <input type="button" value="v"/>
Pre-Shared Key	
Key Format	Please input 8-63 characters
KEY	<input type="text"/>
<input type="button" value="Apply"/>	

Figure 4-13

- Accessorial Authentication & Encryption

The default is TKIP

- Pre-Shared Key

You may select Passphrase (alphanumeric format) or Hexadecimal Digits (in the “A-F”, “a-f” and “0-9” range) to be the Pre-shared Key. <For example: Passphrase: iamguest Hexadecimal Digits: 12345abcde>

4.4.5. WPA Enterprise

Authentication&Security Configuration	
Authentication Type	WPA Enterprise <input type="button" value="v"/>
Accessorial Authentication & Encryption	TKIP <input type="button" value="v"/>
Radius Setup	
Radius Server IP	<input type="text"/>
Radius Port	1812 <input type="text"/>
Radius Password	<input type="text"/>
<input type="button" value="Apply"/>	

Figure 4-14

- RADIUS Server IP

The IP address of external RADIUS server

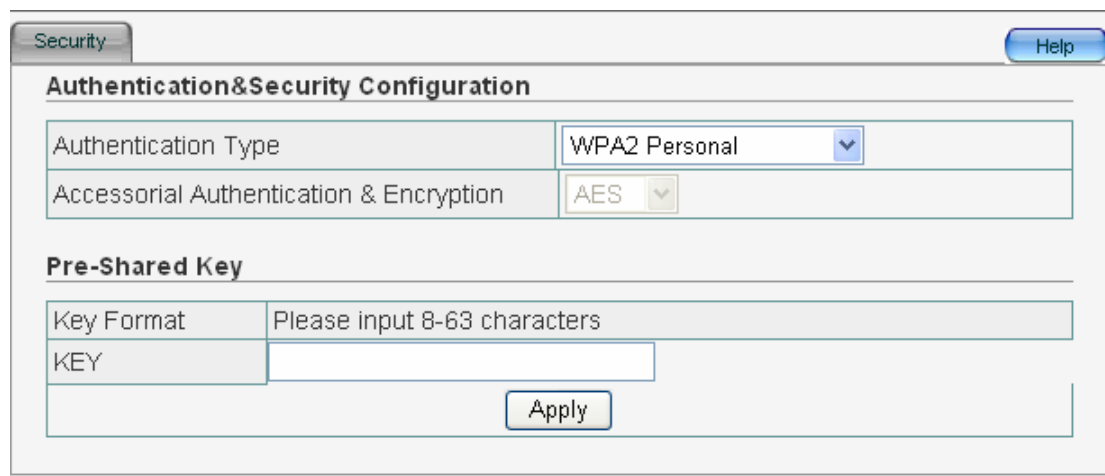
- RADIUS port

The service port of the external RADIUS server

- RADIUS Password

The password used by external RADIUS server.

4.4.6. WPA2 Personal



The screenshot displays a web-based configuration page for wireless security. At the top, there is a 'Security' tab and a 'Help' button. The main section is titled 'Authentication & Security Configuration'. It contains two rows of settings: 'Authentication Type' is set to 'WPA2 Personal' (indicated by a dropdown arrow), and 'Accessorial Authentication & Encryption' is set to 'AES' (also with a dropdown arrow). Below this is a section titled 'Pre-Shared Key'. It has two rows: 'Key Format' is set to 'Please input 8-63 characters', and the 'KEY' field is an empty text input box. At the bottom of the 'Pre-Shared Key' section is an 'Apply' button.

Figure 4-15

- Accessorial Authentication & Encryption

The default is AES

- Pre-Shared Key

You may select Passphrase (alphanumeric format) or Hexadecimal Digits (in the “A-F”, “a-f” and “0-9” range) to be the Pre-shared Key. <For example: Passphrase: iamguest Hexadecimal Digits: 12345abcde>

4.4.7. WPA2 Enterprise

Authentication & Security Configuration	
Authentication Type	WPA2 Enterprise
Accessorial Authentication & Encryption	AES
Radius Setup	
Radius Server IP	
Radius Port	1812
Radius Password	
<input type="checkbox"/> Pre-Authentication	
<input type="button" value="Apply"/>	

Figure 4-16

➤ **RADIUS Server IP**

The IP address of external RADIUS server

➤ **RADIUS port**

The service port of the external RADIUS server

➤ **RADIUS Password**

The password used by external RADIUS server.

4.4.8. WPA&WPA2 Personal

The screenshot shows a web interface for configuring security. At the top, there is a 'Security' tab and a 'Help' button. The main heading is 'Authentication&Security Configuration'. Below this, there is a dropdown menu for 'Authentication Type' set to 'WPA&WPA2 Personal'. Under the 'Pre-Shared Key' section, there are two rows: 'WPA' with 'TKIP' selected (radio button) and 'AES' unselected, and 'WPA2' with 'TKIP' unselected and 'AES' selected. Below these is a 'Key Format' field with the text 'Please input 8-63 characters'. There is an empty text box for the 'KEY' and an 'Apply' button at the bottom.

Figure 4-17

➤ Pre-Shared Key

For WPA, The default is TKIP. For WPA2, The default is AES. You may select Passphrase (alphanumeric format) or Hexadecimal Digits (in the “A-F”, “a-f” and “0-9” range) to be the Pre-shared Key. <For example: Passphrase: iamguest Hexadecimal Digits: 12345abcde>

4.4.9. WPA&WPA2 Enterprise

The screenshot shows a web interface for configuring security. At the top, there is a 'Security' tab and a 'Help' button. The main heading is 'Authentication&Security Configuration'. Below this, there is a dropdown menu for 'Authentication Type' set to 'WPA&WPA2 Enterprise'. Under the 'Radius Authentication' section, there are two rows: 'WPA' with 'TKIP' selected (radio button) and 'AES' unselected, and 'WPA2' with 'TKIP' unselected and 'AES' selected. Below these are three text boxes: 'Radius Server IP', 'Radius Port' (containing '1812'), and 'Radius Password'. There is an 'Apply' button at the bottom.

Figure 4-18

- RADIUS Server IP

The IP address of external RADIUS server

- RADIUS port

The service port of the external RADIUS server

- RADIUS Password

The password used by external RADIUS server.

4.5. WDS

Wireless Distribution System uses wireless media to communicate with other APs, like the Ethernet does. To do this, you must set these APs in the same channel and set MAC address of other APs which you want to communicate with in the table and then enable the WDS.

The screenshot shows a web interface for WDS configuration. At the top left is a 'WDS' tab, and at the top right is a 'Help' button. The main content is divided into two sections:

Wireless Bridge Configuration

This section contains a table with two rows: 'Wireless Bridge MAC' and 'Description'. Each row has an input field. To the right of these fields is an 'Add' button.

Current Wireless Bridge Information

This section contains a table with the following structure:

Description	MAC	Transmit Accumulation Statistic			Rate (Mbps)
		Sent Packets	Received Packets	Sent Wrong Packets	Sent
Refresh					

Figure 4-19

If you select "WDS" or "AP+WDS", please configure your AP as follows:

- Wireless Bridge MAC

If the work pattern of your AP is "WDS" or "AP+WDS", you should have a setting in Wireless Bridge MAC. Enter the MAC address of another access point. Then the another access point must be "AP" or "AP+WDS".

- Description

To describe your Wireless Bridge

- Current Wireless Bridge Information

Display information about Current Wireless Bridge. The bridge uses to connect between more than 2APs.

4.6. MAC Filter

Figure 4-20

You can filter wired users by enabling this function; thus unauthorized users can not access the network.

➤ Enable Wireless Access Control

Enable it ,then you can select Defined items in MAC list are PERMIT to connect AP, others are DENIED or Defined items in MAC list are DENIED to connect AP, others are PERMIT

➤ MAC

Enter the MAC address of access station what you permit or deny

➤ Description

To describe your MAC list

4.7. Site survey

This function provides tool to scan the wireless network. If any Access Point or IBSS is found, you could choose to connect it manually when client mode is enabled.

Figure 4-21

4.8. Client info

No	MAC Address	Transmit Accumulation Statistic		Rate (Mbps)	Power Save	Lease Time (S)
		Sent Packets	Received Packets	Sent		
Refresh						

Figure 4-22

You can see the status of all active wireless stations that are connecting to the AP. To see the latest message, click refresh

4.9. Advanced

You can set advanced wireless LAN parameters of this AP. The parameters include Fragment Threshold, RTS Threshold, Beacon Interval, Preamble Type You should not change these parameters unless you know what effect the changes will have on this AP.

The following parameters are only for the professional, Please be caution to configured them. Incorrect settings may cause wireless communication failed

Frag Threshold	<input type="text" value="2346"/>	(256-2346)
RTS Threshold	<input type="text" value="2347"/>	(0-2347)
Beacon Interval	<input type="text" value="100"/>	(20-1024 ms)
Transmit Rate	<input type="button" value="Auto"/>	
Preamble Type	<input checked="" type="radio"/> Long <input type="radio"/> Short	
802.11g protection	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled	
Wireless VLAN	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled	

Apply

Figure 4-23

➤ Fragment Threshold

"Fragment Threshold" specifies the maximum size of packet during the fragmentation of data

to be transmitted.

➤ RTS Threshold

When the packet size is smaller the RTS threshold, the wireless AP will not use the RTS/CTS mechanism to send this packet.

➤ Beacon Interval

The interval that this wireless AP broadcast a beacon, Beacon is used to synchronize the wireless network.

➤ Transmit Rate

The “Transmit Rate” is the rate this access point uses to transmit data packets. The access point will use the highest possible selected transmission rate to transmit the data packets.

➤ Preamble Type

The “Long Preamble” can provide better wireless LAN compatibility while the “Short Preamble” can provide better wireless LAN performance

➤ 802.11g Protection

This is also called CTS Protection. It is recommended to enable the protection mechanism. This mechanism can decrease the rate of data collision between 802.11b and 802.11g wireless stations. When the protection mode is enabled, the throughput of the AP will be a little lower due to many of frame traffic should be transmitted.

➤ Wireless VLAN

The default is disabled.

4.10. MISC

The screenshot shows the 'Misc' configuration page. At the top left is a 'Misc' tab and at the top right is a 'Help' button. The main content area is titled 'Login ID & Password Setup' and contains a table with three rows: 'Login name is " guest "', 'New Password' with an input field, and 'Confirm New Password' with an input field. An 'Apply' button is located to the right of the password fields. Below this is the 'Restore Default / Restart System' section, which contains two buttons: 'Restore Default' and 'Restart System'. The final section is 'Firmware Upgrade', which includes a 'New Firmware File:' label, an input field, a '浏览...' (Browse...) button, and an 'Upgrade' button.

Figure 4-24

➤ Login ID & Password Setup

This allows you to modify your password to a new one, then you will confirm it .You can not change the login name

➤ Restore Default/Restart System

✧ Restore Default

It will put everything into factory configuration. Make sure you have already had a copy of what you have configured.

✧ Restart System

Click on it will restart the AP

➤ Firmware Upgrade

It allows you to upgrade the AP's firmware

✧ New Firmware File

This tool allows you to upgrade the AP's system firmware. To upgrade the firmware of your AP, 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.

Once you've selected the new firmware file, click "Upgrade" to start the upgrade process. (You may have to wait a few minutes for the upgrade to complete). Once the upgrade is complete you can start using the AP.

5. FAQ

1. I cannot access the Web-based Configuration Utility from the Ethernet computer used to configure the AP.

- Check that the LAN LED is on. If the LED is not on, verify that the cable for the LAN connection is firmly connected.
- Check whether the computer resides on the same subnet with the AP's LAN IP address.
- If the computer acts as a DHCP client, check whether the computer has been assigned an IP address from the DHCP server. If not, you will need to renew the IP address.
- Use the ping command to ping the AP's LAN IP address to verify the connection.
- Make sure your browser is not configured to use a proxy server.
- Check that the IP address you entered is correct. If the AP's LAN IP address has been changed, you should enter the reassigned IP address instead.

2. I forget Password (Reset the AP without Login)

- Plug out the power of the AP.
- Use a pencil to press and hold the default button on the back panel of the AP. Then plug in the power of the AP.
- Press and hold the default button wait for a few seconds until the SYS LED indicator stays green.
- Reboot the AP.
- After the above those steps, the manufacture's parameters will be restored in the AP. The default password is guest.

3. My wireless client cannot communicate with another Ethernet computer.

- Ensure the wireless adapter functions properly. You may open the Device Manager in Windows to see if the adapter is properly installed.
- Make sure the wireless client uses the same SSID and security settings (if enabled) as the Wireless AP
- Ensure that the wireless adapter's TCP/IP settings are correct as required by your network administrator.
- If you are using a 802.11b wireless adapter, and check that the 802.11G Mode item in Wireless Basic Setting page, is not configured to use 802.11G Performance.
- Use the ping command to verify that the wireless client is able to communicate with the AP's LAN port and with the remote computer. If the wireless client can successfully ping the

AP's LAN port but fails to ping the remote computer, then verify the TCP/IP settings of the remote computer.

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio 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:

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

Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body and must not be co-located or operating in conjunction with any other antenna or transmitter.

This equipment 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.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Caution!

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user authority to operate the equipment.