



**WAP-6010**  
***N\_Max* Wireless Access Point**

User Manual

# Notice

## FCC Warning

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user 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.

The user's manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## 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.

## FCC RF Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body. For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible. The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. Shielded interface cables must be used in order to comply with emission limits.

## **CE Statement**

LEVELONE, hereby declares that this device is in compliance with the essential requirement and other relevant provisions of the R&TTE Directive 1999/5/EC.

This device will be sold in the following EEA countries : Austria, Italy, Belgium, Liechtenstein, Denmark, Luxembourg, Finland, Netherlands, France, Norway, Germany, Portugal, Greece, Spain, Iceland, Sweden, Ireland, United Kingdom, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Slovakia, Poland, Slovenia, Bulgaria, Romania.

## **Preface**

This guide is for the experienced user who installs and manages the N\_Max WAP-6010 product hereafter referred to as the “device”. To use this guide, you should have experience working with the TCP/IP configuration and be familiar with the concepts and terminology of wireless local area networks.

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# Ch 1. WAP-6010 Installation

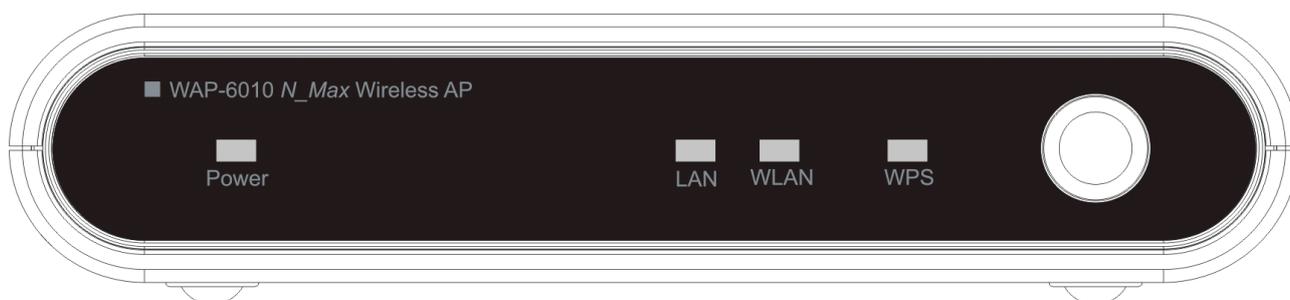
## Packing List

Before starting the installation of the device, please make sure the package contains the following items:

- WAP-6010 AP unit
- Power Adapter
- LAN Cable
- Antenna x 2
- Quick Installation Guide
- CD Manual
- Bracket x 2
- Screw x 2

## Connectors, Buttons and LEDs

### Front Panel



From Left to right:

**Power LED:** The LED lights when power on.

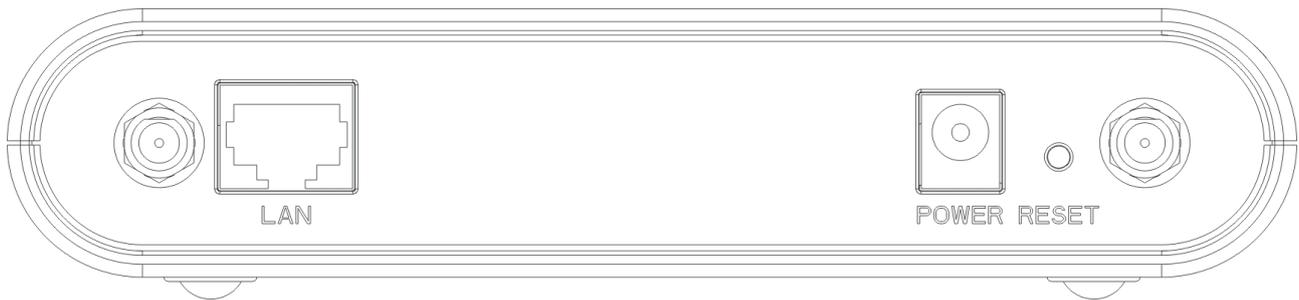
**LAN:** The LED lights when the Ethernet port is plugged and flashes when it is transmitting.

**WLAN:** The LED flashes when WLAN is working.

**WPS LED:** The LED lights when the WPS button is pushed.

**WPS Button:** Press it to enable PBC (Push Button Configuration) for WPS authentication.

## Back Panel



From left to right:

**LAN:** You can connect the Ethernet port to PC or the other switch.

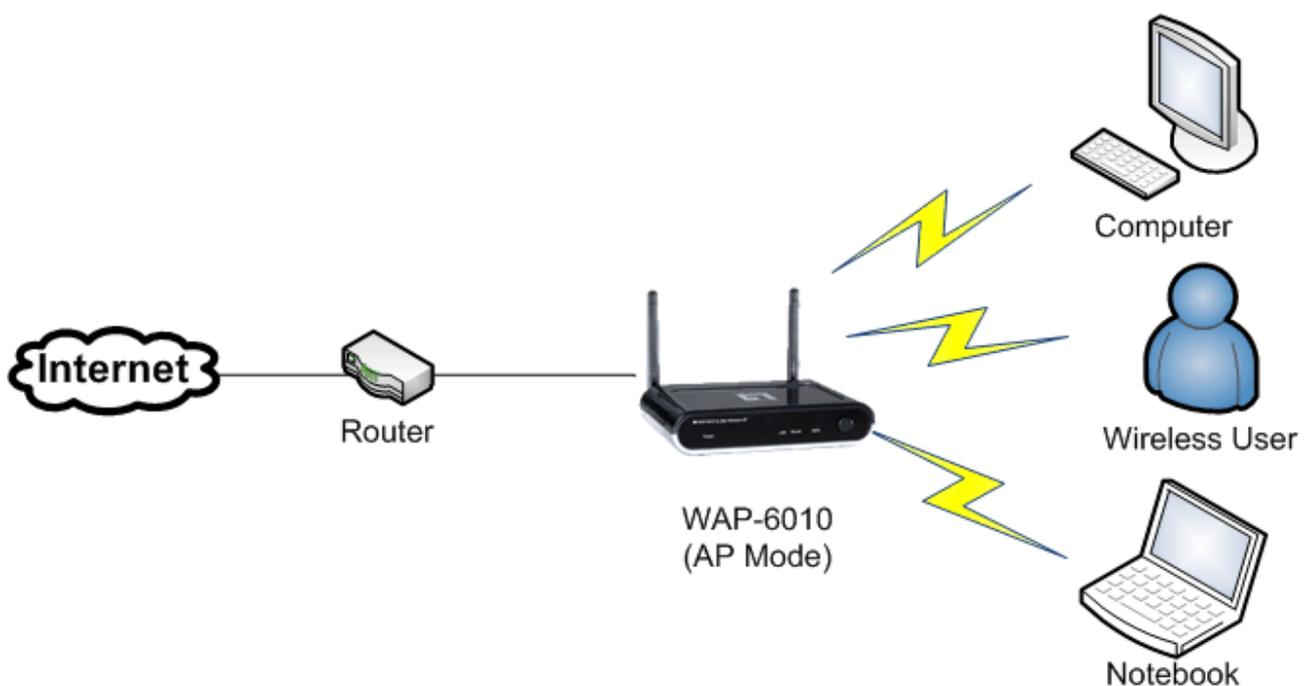
**POWER:** Please supply the power in 12V and 1A.

**Reset Button:** Press Reset button to revert it to factory default.

**Antenna port:** There are two antenna ports in the both ends of this side. Connect the antenna into the port.

## Hardware Installation

Once you check everything from the package, you can start to install the device. You can use the wall mount hole on the bottom of the device to mount the device on the wall, or just put the device on the desktop. The administrator can refer to the figure below while in the process of constructing your WLAN environment.



# Ch 2. First Time Configuration

## Before Start to Configure

The configuration of this device is through web-browser. To access the configuration interfaces, make sure you are using a computer connected to the same network as the device. The default IP address of the device is 192.168.0.254, and the subnet-mask is 255.255.255.0. For the first time configuration, please login with username: **admin** and password: **admin**.



Please note that the DHCP server inside the device is default to up and running. Do not have multiple DHCP servers in your network environment, otherwise it will cause abnormal situation.

## Knowing the Network Application

The device can act as the following roles, and it supports WDS (Wireless Distribution System) function.

The device provides 5 different operation modes and the wireless radio of device can act as AP/AP Client/Bridge/WDS/Repeater. The operation mode is about the communication mechanism between the wired Ethernet NIC and wireless NIC. Following are the types of operation mode.

1. AP Mode
2. AP Client
3. Bridge Mode
4. WDS Mode
5. Repeater Mode

The following table shows the supporting association of wireless radio modes.

| <i>WLAN mode</i>                | <i>AP</i> | <i>Bridge</i> | <i>WDS Mode</i> | <i>Repeater</i> | <i>AP Client-Infrastructure</i> | <i>AP Client - Ad Hoc</i> |
|---------------------------------|-----------|---------------|-----------------|-----------------|---------------------------------|---------------------------|
| <i>AP</i>                       | X         | X             | X               | V               | V                               | X                         |
| <i>Bridge</i>                   | X         | V             | V               | X               | X                               | X                         |
| <i>WDS Mode</i>                 | X         | V             | V               | V               | V                               | X                         |
| <i>Repeater</i>                 | V         | X             | V               | V               | V                               | X                         |
| <i>AP Client-Infrastructure</i> | V         | X             | V               | V               | X                               | X                         |
| <i>AP Client-Ad Hoc</i>         | X         | X             | X               | X               | X                               | V                         |

V: Supported.

X: Not supported.

**Note:** WDS function supports the same model only. It needs the same setting on WDS mode.

# Ch 3. Detail Configuration

## Setup Wizard

This device has a Setup Wizard helps you to configure it easily. For the first time setup, we suggest using wizard to setup. After login the device, the status page and the menu in the left panel shows. Click the “Wizard” in the left panel to start the setup wizard.

The screenshot shows the web interface for a WAP-6010 N\_Max Wireless AP. The top navigation bar includes 'level one' and 'WAP-6010 N\_Max Wireless AP'. A left sidebar contains 'Site contents' with links to 'Setup Wizard', 'TCP/IP Settings', 'Wireless Settings', and 'Management'. The main content area is titled 'Access Point Status' and includes a sub-header 'System Info' with a table of device details.

| System Info      |                       |
|------------------|-----------------------|
| Model            | WAP-6010              |
| Firmware Version | 1.1.0k (Mar 24 2009)  |
| System Time      | 2009/3/25 Wed 22:20:4 |
| Operation Mode   | AP Mode               |

| Local Network    |                   |
|------------------|-------------------|
| Local IP Address | 192.168.0.254     |
| Local Netmask    | 255.255.255.0     |
| MAC Address      | 00:05:9E:8D:85:B8 |

| Wireless Information |                          |
|----------------------|--------------------------|
| Mode                 | AP                       |
| Band                 | 2.4 GHz (B+G+N)          |
| SSID                 | WAP-6010                 |
| Channel              | 11                       |
| Encryption           | OPEN                     |
| Bssid                | 00:05:9E:8D:85:B8        |
| Associated Clients   | 0                        |
| Driver Version       | AP 2.0.0.0 / STA 1.8.0.0 |

### Select the mode:

In the first page of the wizard, there are five modes for selection. It determines how the device works. Refer to the explanation below to understand the modes. Choose one to continue.

#### AP Mode:

This is the default configuration that allows you to connect to WAP-6010 as a wireless client. This mode adds wireless functionality to your wired network.

#### AP Client Mode:

WAP-6010 retrieves the signal from a Wireless AP or Router and shares it to the wired Ethernet ports on a PC or switch. WAP-6010 **will not** accept wireless clients in this mode.

#### Bridge Mode:

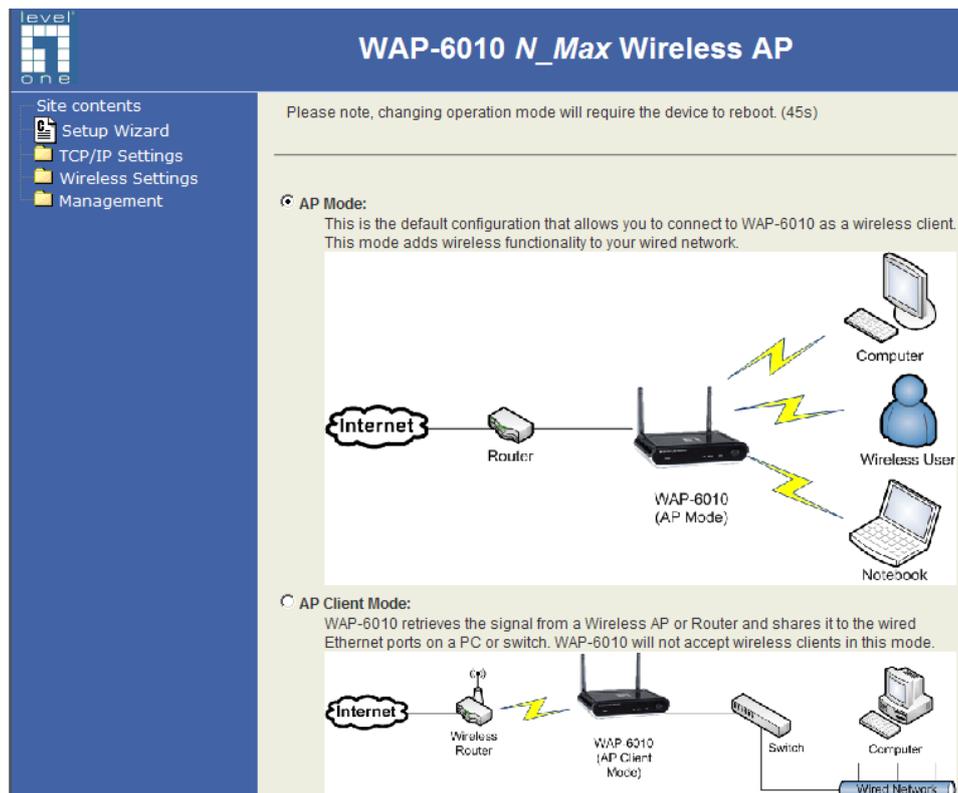
In Bridge Mode, WAP-6010 communicates using BSSID (MAC addresses) to create a point-to-point or point-to-multi-point connection between 2 or more access points to help join LANs together. WAP-6010 **will not** accept wireless clients in this mode.

#### WDS Mode:

This allows users to connect several APs together via BSSID (MAC addresses) to create a large-scale wireless network. This differs to Bridge Mode because APs set in WDS Mode can provide local wireless service to wireless clients.

### Repeater Mode:

WAP-6010 connects wirelessly to a wireless AP or Router and repeats the signal. This allows you to extend the distance of your wireless network.



The description below shows the different step for each option.

### AP Mode:

The Setup Wizard will guide you through the setting of “Basic Wireless setting” and “Wireless Security setting”.

For AP mode, input the SSID, select if broadcasts SSID and select the radio channel. When enabling SSID then it can be scanned by the other wireless station/clients. For the radio channel, choose the one not occupied or choose “AutoSelect” to select the channel automatically.

## Wizard -- Basic Wireless Settings

You could configure the minimum number of Wireless settings for communication, such as Network Name (SSID) and Channel. The Access Point can be set simply with only the minimum setting items.

---

| Wireless Network              |   |
|-------------------------------|---|
| Network Name(SSID)            | <input type="text" value="WAP-6010PM"/>                               |
| Broadcast Network Name (SSID) | <input checked="" type="radio"/> Enable <input type="radio"/> Disable |
| Frequency (Channel)           | <input type="text" value="2462MHz (Channel 11)"/>                     |

The next step is to setup the wireless encryption. Choose the Security mode and input the key value. For the example, we choose the WPA2-PSK as the encryption type, AES as the encryption algorithm, leave the Key Renewal Interval as the default 3600 seconds, and enable the WPS function. WPS function is only available when the encryption type is WPA-PSK, WPA2-PSK or WPA/WPA2-PSK. With WPS function enabled, the WPS button in the front panel can be pushed to enable WPS function. For example, press the WPS button on this device and then trigger the WPS on the WLAN card via utility or button, and the wireless security will be established.

**Security Mode:** The available types are Disable, WEPAUTO, WPA-PSK, WPA2-PSK, WPA/WPA2 PSK. For our example, choose "WPA2-PSK" and "AES" for encryption algorithm, and then enter the pass phrase which is from 8 to 63 characters. Keep the Key renewal Interval to default 3600 seconds.

**WPS:** You can enable the WPS function. It is only available when using WPA-PSK or WPA2-PSK. Refer to the encryption section for the easy operation.

**Note:** The Wireless Client/Station must use the same encryption/key to associate to this device.

## Wireless Security/Encryption Settings

Setup the wireless security and encryption to prevent from unauthorized access and monitoring.

---

**"WAP-6010PM"**

|                      |  |
|----------------------|--|
| Security Mode        | WPA2-PSK   |
| <b>WPA</b>           |  |
| WPA Algorithms       | <input type="radio"/> TKIP <input checked="" type="radio"/> AES <input type="radio"/> TKIP/AES |
| Pass Phrase          | ••••••••   |
| Key Renewal Interval | 3600 seconds (default 3600)  |
| <b>WPS Config</b>    |  |
| WPS:                 | Enable   |

**AP Client Mode:**

The Setup Wizard will guide you through the page of "Station Site Survey" and Station page. In this mode, this device turns into a "Station" device which associates to the remote AP and bridges the LAN hosts to it. For setting with Wizard, the first step is to do site survey (Scan) the AP and connect to it, and then setup the encryption in the second page.

### Wizard -- Station Site Survey

Site survey page shows information of APs nearby. You may choose one of these APs connecting.

---

|                       | SSID              | BSSID             | RSSI | Channel | Encryption | Authentication | Network Type   |
|-----------------------|-------------------|-------------------|------|---------|------------|----------------|----------------|
| <input type="radio"/> | wan-1112          | 00:19:5b:43:29:8e | 10%  | 1       | NONE       | OPEN           | Infrastructure |
| <input type="radio"/> | WBR-6600          | 00:11:6b:53:94:e8 | 5%   | 1       | NONE       | OPEN           | Infrastructure |
| <input type="radio"/> | WAP-0003          | 00:11:6b:60:6a:c5 | 86%  | 6       | WEP        | -----          | Infrastructure |
| <input type="radio"/> | camera            | 00:18:e7:1b:ee:58 | 24%  | 7       | WEP        | -----          | Infrastructure |
| <input type="radio"/> | MeetingRoom       | 00:11:6b:b0:87:9c | 100% | 7       | WEP        | -----          | Infrastructure |
| <input type="radio"/> | -- Hidden SSID -- | 00:11:6b:22:51:50 | 10%  | 11      | NONE       | OPEN           | Infrastructure |
| <input type="radio"/> | WBR-6000v3_TSD    | 00:11:6b:18:db:fe | 5%   | 11      | NONE       | OPEN           | Infrastructure |
| <input type="radio"/> | WBR-6010          | 00:c0:02:ff:c3:10 | 24%  | 11      | NONE       | OPEN           | Infrastructure |
| <input type="radio"/> | WBR-6001          | 00:11:6b:2a:30:c6 | 100% | 11      | NONE       | OPEN           | Infrastructure |
| <input type="radio"/> | QC-6001           | 00:50:18:21:c4:4d | 0%   | 11      | AES        | WPA-PSK        | Infrastructure |
| <input type="radio"/> | WBR-6001          | 00:11:6b:29:36:d4 | 0%   | 11      | NONE       | OPEN           | Infrastructure |
| <input type="radio"/> | 1t1r              | 00:c0:02:ff:c7:6e | 5%   | 11      | NONE       | OPEN           | Infrastructure |
| <input type="radio"/> | QC-6000           | 00:11:6b:17:48:f6 | 44%  | 11      | NONE       | OPEN           | Infrastructure |
| <input type="radio"/> | WBR-3408          | 00:c0:02:ff:c4:9a | 0%   | 11      | AES        | WPA-PSK        | Infrastructure |

In the second page, you are required to select the encryption and input the key to associate the AP. So you must know this information from the AP setting or Wireless ISP.

**Wizard -- Station Site Survey**

Site survey page shows information of APs nearby. You may choose one of these APs connecting.

---

**System Configuration**

|                    |   |
|--------------------|---|
| Profile Name       | PROF001   |
| SSID               | MeetingRoom   |
| Network Type       | Infrastructure  |
| Power Saving Mode  | <input checked="" type="radio"/> CAM (Constantly Awake Mode)<br><input type="radio"/> Power Saving Mode |
| RTS Threshold      | <input type="checkbox"/> Used 2347 (range 1 - 2347)   |
| Fragment Threshold | <input type="checkbox"/> Used 2346 (range 256 - 2346)   |

---

**Security Policy**

|               |      |
|---------------|------|
| Security Mode | OPEN |
|---------------|------|

---

**Wire Equivalence Protection (WEP)**

|                      |                                       |
|----------------------|---------------------------------------|
| WEP Key Length       | 64 bit (10 hex digits / 5 ascii keys) |
| WEP Key Entry Method | Hexadecimal                           |
| WEP Key 1 :          | ●●●●●●●●●●                            |

**Bridge Mode:**

The setup Wizard will guide you through the WDS basic setting and the Wireless Encryption. This mode allows two or more Bridge-mode device to combine to a single distribution system, to bridge the Ethernets behind each Bridge-mode device through the WDS link. Please be aware that the AP function is disabled in this mode so the Wireless client/stations can't scan or associate to this device. In the first page, input the MAC Address of the target Bridge-mode device. The max number of records is 4. Select the radio channel for this connection.

**Note:** The target WDS device must be input the MAC Address of this device and use the same encryption/key and same radio channel.

## Wizard -- Basic Wireless Settings

You could configure the minimum number of Wireless settings for communication, such as Network Name (SSID) and Channel. The Access Point can be set simply with only the minimum setting items.

| Wireless Distribution System(WDS) |   |
|-----------------------------------|---|
| AP MAC Address                    | <input type="text" value="00:11:6B:11:12:13"/>    |
| AP MAC Address                    | <input type="text"/>                              |
| AP MAC Address                    | <input type="text"/>                              |
| AP MAC Address                    | <input type="text"/>                              |
| Wireless Network                  |   |
| Frequency (Channel)               | <input type="text" value="2462MHz (Channel 11)"/> |

## Wireless Security/Encryption Settings

Setup the wireless security and encryption to prevent from unauthorized access and monitoring.

| "WAP-6010PM"                          |                                       |
|---------------------------------------|---------------------------------------|
| Security Mode                         | <input type="text" value="WPA2-PSK"/> |
| Wireless Distribute System Encryption |                                       |
| WDS Encryption Type                   | <input type="text" value="TKIP"/>     |
| WDS Encryption Key                    | <input type="text" value="••••••••"/> |

**WDS mode:** The wizard will guide you through the Wireless Basic setting and the Wireless Encryption setting. This mode is equal to the Bridge Mode but with AP function additionally. So the bridged network will not only bridge the Ethernet but also the WLAN behind the WDS device. The Bridge-mode device and the WDS-mode device can be bridged together through WDS link. In the first page, you need to input the MAC Address of the target device and the Network name for the AP function. The channel of WDS and AP must be the same.

## Wizard -- Basic Wireless Settings

You could configure the minimum number of Wireless settings for communication, such as Network Name (SSID) and Channel. The Access Point can be set simply with only the minimum setting items.

| Wireless Distribution System(WDS) |                   |
|-----------------------------------|-------------------|
| AP MAC Address                    | 00:11:6B:11:12:13 |
| AP MAC Address                    |                   |
| AP MAC Address                    |                   |
| AP MAC Address                    |                   |

| Wireless Network              |   |
|-------------------------------|---|
| Network Name(SSID)            | WAP-6010PM  |
| Broadcast Network Name (SSID) | <input checked="" type="radio"/> Enable <input type="radio"/> Disable |
| Frequency (Channel)           | 2462MHz (Channel 11) ▾  |

In the second page, you need to select the encryption type and the key. **The encryption type of WDS link and AP must be the same**, but the encryption algorithm and key can be different. If use the WEP encryption, it has to set WEP Key between AP and WDS. AP security on WDS mode: You need to set encryption for WAP-PSK or WPA2-PSK. **Note:** the WPS function can't be applied in this mode.

### Wireless Security/Encryption Settings

Setup the wireless security and encryption to prevent from unauthorized access and monitoring.

---

| "WAP-6010"    |            |
|---------------|------------|
| Security Mode | WPA2-PSK ▾ |

| Access Point Encryption |  |
|-------------------------|--|
| WPA Algorithms          | <input type="radio"/> TKIP <input checked="" type="radio"/> AES <input type="radio"/> TKIP/AES |
| Pass Phrase             | ●●●●●●●●   |
| Key Renewal Interval    | 3600 seconds (default 3600)  |

| Wireless Distribute System Encryption |        |
|---------------------------------------|--------|
| WDS Encryption Type                   | TKIP ▾ |
| WDS Encryption Key                    |        |

**Repeater Mode:** Setup Wizard will guide you through Repeater Site Survey, Repeater Site encryption, Wireless Basic Setting and the Wireless encryption pages. In this mode, this device plays two roles, one is a Client/Station to associate the target AP, and the other is an AP to allow the WLAN client/station to associate into. Therefore the WLAN of this device is bridged to the WLAN of the target AP.

In the first page, do the site survey and choose the target AP to connect.

**Wizard -- Repeater Site Survey**

The AP will be a wireless LAN repeater to extend the WLAN coverage range.

|                                  | SSID              | BSSID             | RSSI | Channel | Encryption | Authentication | Network Type   |
|----------------------------------|-------------------|-------------------|------|---------|------------|----------------|----------------|
| <input type="radio"/>            | wan-1112          | 00:19:5b:43:29:8e | 34%  | 1       | NONE       | OPEN           | Infrastructure |
| <input type="radio"/>            | WBR-6600          | 00:11:6b:53:94:e8 | 0%   | 1       | NONE       | OPEN           | Infrastructure |
| <input type="radio"/>            | WAP-0003          | 00:11:6b:60:6a:c5 | 65%  | 6       | WEP        | -----          | Infrastructure |
| <input checked="" type="radio"/> | MeetingRoom       | 00:11:6b:b0:87:9c | 91%  | 7       | WEP        | -----          | Infrastructure |
| <input type="radio"/>            | camera            | 00:18:e7:1b:ee:58 | 44%  | 7       | WEP        | -----          | Infrastructure |
| <input type="radio"/>            | QC-6000           | 00:11:6b:17:48:f6 | 39%  | 11      | NONE       | OPEN           | Infrastructure |
| <input type="radio"/>            | -- Hidden SSID -- | 00:11:6b:22:51:50 | 10%  | 11      | NONE       | OPEN           | Infrastructure |
| <input type="radio"/>            | WBR-6010          | 00:c0:02:ff:c3:10 | 15%  | 11      | NONE       | OPEN           | Infrastructure |
| <input type="radio"/>            | WBR-6001          | 00:11:6b:2a:30:c6 | 100% | 11      | NONE       | OPEN           | Infrastructure |
| <input type="radio"/>            | 1t1r              | 00:c0:02:ff:c7:6e | 0%   | 11      | NONE       | OPEN           | Infrastructure |

In the second page, setup the wireless encryption to associate the target AP. You must know the encryption/key of the target AP before you setup here.

### Wizard -- Repeater Site Survey

The AP will be a wireless LAN repeater to extend the WLAN coverage range.

---

| Repeater Configuration            |                                      |
|-----------------------------------|--------------------------------------|
| SSID                              | MeetingRoom                          |
| Security Policy                   |                                      |
| Security Mode                     | SHARED                               |
| Wire Equivalence Protection (WEP) |                                      |
| WEP Key Length                    | 64 bit (10 hex digits/ 5 ascii keys) |
| WEP Key 1 :                       | •••••••• Hexadecimal                 |
| WEP Key 2 :                       | Hexadecimal                          |
| WEP Key 3 :                       | Hexadecimal                          |
| WEP Key 4 :                       | Hexadecimal                          |
| Default Key                       | Key 1                                |

Back Next Cancel

In the third page, setup the WLAN of the device for the other clients to connect.

### Wizard -- Basic Wireless Settings

You could configure the minimum number of Wireless settings for communication, such as Network Name (SSID) and Channel. The Access Point can be set simply with only the minimum setting items.

---

| Wireless Network              |   |
|-------------------------------|---|
| Network Name(SSID)            | WAP-6010PM  |
| Broadcast Network Name (SSID) | <input checked="" type="radio"/> Enable <input type="radio"/> Disable |

Back Next Cancel

In the fourth page, setup the encryption/key for the WLAN of this AP.

## Wireless Security/Encryption Settings

Setup the wireless security and encryption to prevent from unauthorized access and monitoring.

| "WAP-6010PM"  |  |
|---|--|
| Security Mode   | WPA2-PSK   |
| WPA   |  |
| WPA Algorithms  | <input type="radio"/> TKIP <input checked="" type="radio"/> AES <input type="radio"/> TKIP/AES |
| Pass Phrase   | ●●●●●●●●   |
| Key Renewal Interval  | 3600 seconds (default 3600)  |
| WPS Config  |  |
| WPS:  | Enable   |
| <input type="button" value="Back"/> <input type="button" value="Finish"/> <input type="button" value="Cancel"/> |  |

# TCP/IP Settings

## Configuring LAN Interface

**Local Area Network (LAN) Settings**

You may enable/disable networking functions and configure their parameters as your wish.

| LAN Setup            |                   |
|----------------------|-------------------|
| IP Address           | 192.168.0.254     |
| Subnet Mask          | 255.255.255.0     |
| Default Gateway      |                   |
| Primary DNS Server   | 168.95.1.1        |
| Secondary DNS Server | 168.95.192.1      |
| MAC Address          | 00:05:9E:8D:85:B8 |
| DHCP Type            | Disable           |
| 802.1d Spanning Tree | Disable           |
| LLTD                 | Disable           |

Apply Cancel

| Item                      | Description   |
|---------------------------|---|
| <b>IP Address</b>         | This is the IP Address for this device. You can login this IP Address via LAN/WLAN, and you can change it if you want to. |
| <b>Subnet Mask</b>        | This is the subnet mask for the LAN. The default value is "255.255.255.0".  |
| <b>MAC Address</b>        | The MAC Address of LAN is showed in this field.   |
| <b>DHCP Type</b>          | You can select to enable DHCP server. When enabling the DHCP server, you must setup the information below.                |
| <b>Start IP Address</b>   | This is the first IP Address of the IP pool which the server assigns the IP Address from.                                 |
| <b>End IP Address</b>     | This is the last IP Address of the IP pool.   |
| <b>Subnet mask</b>        | This is the subnet mask of this domain. The default value is "255.255.255.0".   |
| <b>Primary DNS Server</b> | This is the primary DNS server for the LAN PCs.   |

|                             |   |
|-----------------------------|---|
| <b>Secondary DNS Server</b> | This is the second DNS server for the LAN PCs.  |
| <b>Default Gateway</b>      | This is the default gateway for the LAN PCs.  |
| <b>Lease Time</b>           | This is the DHCP lease time. When it is short, the IP release/renew of the LAN will be faster but the network congestion will be more.          |
| <b>Statically Assigned</b>  | You can manually assign the IP Address to the certain PCs. Enter the MAC Address and IP Address in the table.                                   |
| <b>802.1d Spanning Tree</b> | For the Mesh type of WDS setup, enable this function to prevent the broadcasting storm.   |
| <b>LLTD</b>                 | Enable this function to support LLTD (Link Layer Topology Discovery) for Windows Vista. It shows the status of connection in the Windows Vista. |

**level one** **WAP-6010 N\_Max Wireless AP**

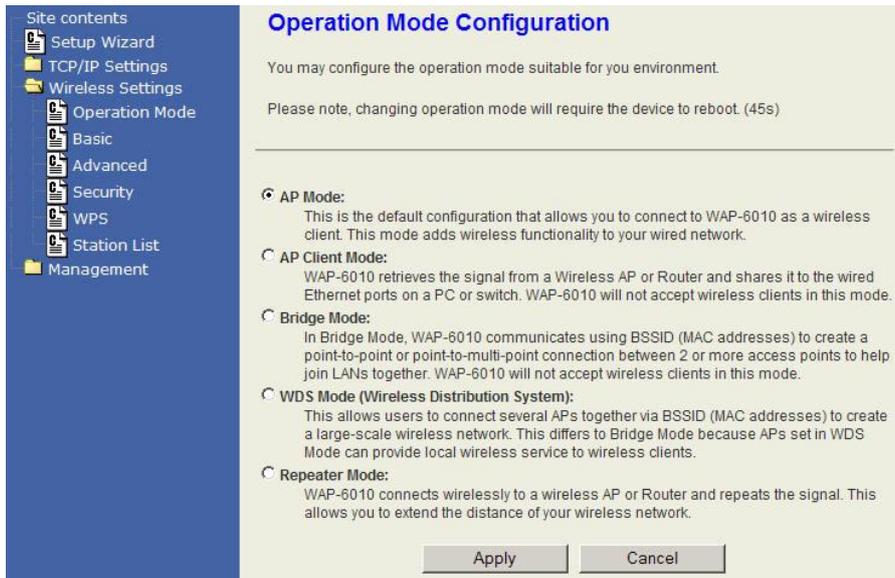
Site contents

- Setup Wizard
- TCP/IP Settings
- LAN
- Wireless Settings
- Management

|                      |   |
|----------------------|---|
| Secondary DNS Server | 168.95.192.1  |
| MAC Address          | 00:05:9E:8D:85:B8                                     |
| DHCP Type            | Server  |
| Start IP Address     | 192.168.0.1   |
| End IP Address       | 192.168.0.100   |
| Subnet Mask          | 255.255.255.0   |
| Primary DNS Server   | 168.95.1.1  |
| Secondary DNS Server | 168.95.192.1  |
| Default Gateway      | 192.168.0.254   |
| Lease Time           | 86400   |
| Statically Assigned  | MAC: <input type="text"/><br>IP: <input type="text"/> |
| Statically Assigned  | MAC: <input type="text"/><br>IP: <input type="text"/> |
| Statically Assigned  | MAC: <input type="text"/><br>IP: <input type="text"/> |
| 802.1d Spanning Tree | Disable   |
| LLTD                 | Disable   |

Apply Cancel

# Wireless Settings

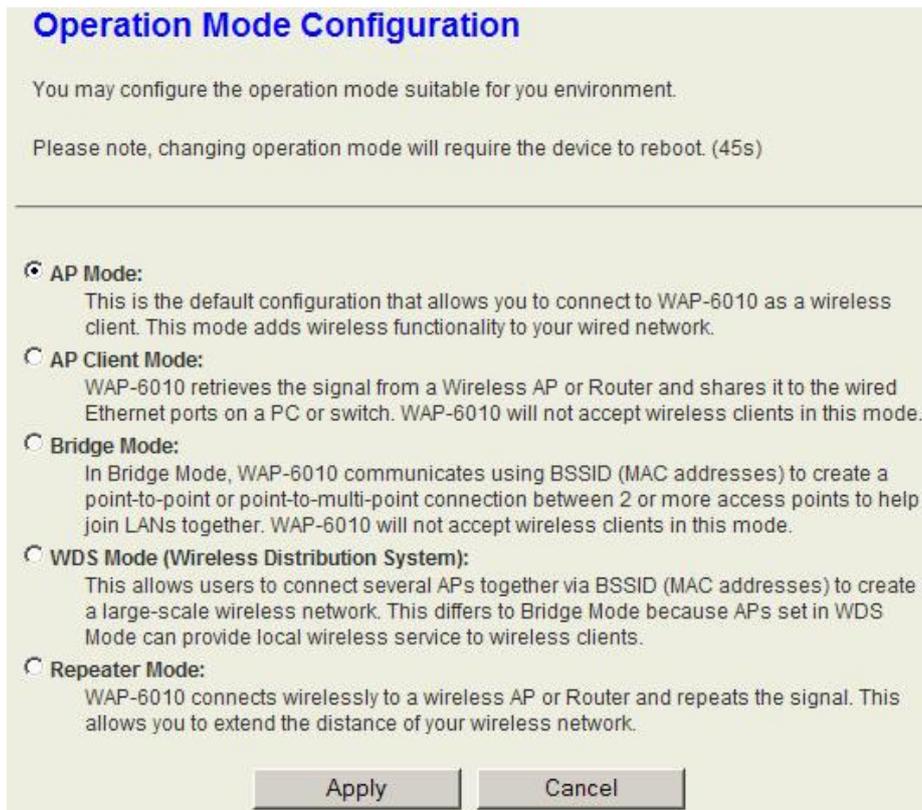


The screenshot shows a web interface for configuring wireless settings. On the left is a blue sidebar with a 'Site contents' menu listing: Setup Wizard, TCP/IP Settings, Wireless Settings (highlighted), Operation Mode, Basic, Advanced, Security, WPS, Station List, and Management. The main content area is titled 'Operation Mode Configuration' and contains the following text: 'You may configure the operation mode suitable for you environment.' and 'Please note, changing operation mode will require the device to reboot. (45s)'. Below this is a list of five radio button options: 

- AP Mode:** This is the default configuration that allows you to connect to WAP-6010 as a wireless client. This mode adds wireless functionality to your wired network.
- AP Client Mode:** WAP-6010 retrieves the signal from a Wireless AP or Router and shares it to the wired Ethernet ports on a PC or switch. WAP-6010 will not accept wireless clients in this mode.
- Bridge Mode:** In Bridge Mode, WAP-6010 communicates using BSSID (MAC addresses) to create a point-to-point or point-to-multi-point connection between 2 or more access points to help join LANs together. WAP-6010 will not accept wireless clients in this mode.
- WDS Mode (Wireless Distribution System):** This allows users to connect several APs together via BSSID (MAC addresses) to create a large-scale wireless network. This differs to Bridge Mode because APs set in WDS Mode can provide local wireless service to wireless clients.
- Repeater Mode:** WAP-6010 connects wirelessly to a wireless AP or Router and repeats the signal. This allows you to extend the distance of your wireless network.

At the bottom of the configuration area are two buttons: 'Apply' and 'Cancel'.

## Operation Mode



This screenshot provides a detailed view of the 'Operation Mode Configuration' page. It features the same title and introductory text as the previous image: 'You may configure the operation mode suitable for you environment.' and 'Please note, changing operation mode will require the device to reboot. (45s)'. The five radio button options are listed below, with 'AP Mode' selected (indicated by a filled radio button): 

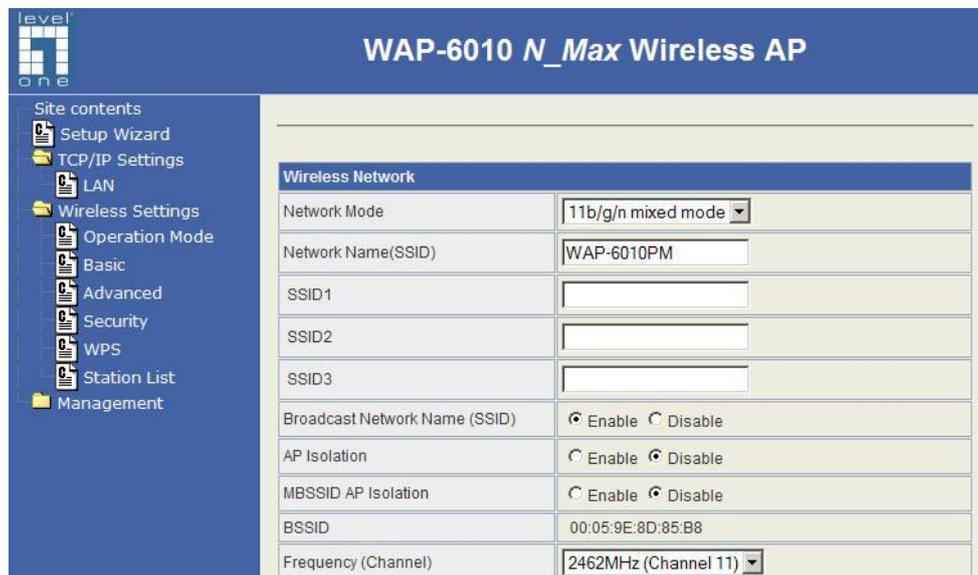
- AP Mode:** This is the default configuration that allows you to connect to WAP-6010 as a wireless client. This mode adds wireless functionality to your wired network.
- AP Client Mode:** WAP-6010 retrieves the signal from a Wireless AP or Router and shares it to the wired Ethernet ports on a PC or switch. WAP-6010 will not accept wireless clients in this mode.
- Bridge Mode:** In Bridge Mode, WAP-6010 communicates using BSSID (MAC addresses) to create a point-to-point or point-to-multi-point connection between 2 or more access points to help join LANs together. WAP-6010 will not accept wireless clients in this mode.
- WDS Mode (Wireless Distribution System):** This allows users to connect several APs together via BSSID (MAC addresses) to create a large-scale wireless network. This differs to Bridge Mode because APs set in WDS Mode can provide local wireless service to wireless clients.
- Repeater Mode:** WAP-6010 connects wirelessly to a wireless AP or Router and repeats the signal. This allows you to extend the distance of your wireless network.

At the bottom, there are 'Apply' and 'Cancel' buttons.

This device supports 5 modes of radio. Click the button to select one among the modes. Refer to the explanation for different modes.

Notice: Multiple SSID is limited to 2 sets under Repeater Mode.

# Basic



| Basic Settings                               |  |
|--|--|
| Item   | Description  |
| <b>Network Mode</b>                          | The available options are “11b/g mixed mode”, “11b only”, “11g only” and “11b/g/n mixed mode”. We recommend selecting the default value “11b/g/n mixed mode”.  |
| <b>Network Name (SSID)</b>                   | The SSID, which is also called ESSID is a unique identifier that wireless networking devices use in order to establish and maintain wireless connectivity. Multiple access point/bridges on a network or sub-network can use the same SSID. SSIDs are case sensitive and can contain up to 32 alphanumeric characters. |
| <b>Multiple SSID 1-3 (Only in AP mode)</b>   | This device supports multiple SSID. Input the multiple SSID 1, 2, 3 in the field to enable the function. With the field of Network Name (SSID), the device supports maximum 4 SSIDs.   |
| <b>Broadcast Network Name (SSID)</b>         | Disable this function to hide SSID. With hidden SSID, the AP can’t be scanned and the wireless client must input SSID manually to associate this AP.   |
| <b>AP Isolation</b>                          | The device supports isolation function. If you are building a public Wireless Network, enable this function can provide better security. The device will block packets between wireless clients (relay). All the wireless clients connected to the device can’t see each other.  |
| <b>MBSSID AP Isolation (Only in AP mode)</b> | The device supports multi-SSID. You can decide whether   |

|                            |   |
|----------------------------|---|
|                            | the clients associated to different SSID on the device can see each other. Enable the option to block it. The Default value is "Disable".   |
| <b>BSSID</b>               | The BSSID is displayed in this field.   |
| <b>Frequency (Channel)</b> | Click the drop down box to select the radio channel. Select the unused channel to prevent the radio overlapping. If you are not sure which channel is used, select "AutoSelect" to let the device to detect and select the available channel. |

## Basic Wireless Settings

You could configure the minimum number of Wireless settings for communication, such as Network Name (SSID) and Channel. The Access Point can be set simply with only the minimum setting items.

| Wireless Network              |   |
|-------------------------------|---|
| Network Mode                  | 11b/g/n mixed mode ▾  |
| Network Name(SSID)            | 11b/g mixed mode<br>11b only<br>11g only<br>11b/g/n mixed mode        |
| SSID1                         |   |
| SSID2                         |   |
| SSID3                         |   |
| Broadcast Network Name (SSID) | <input checked="" type="radio"/> Enable <input type="radio"/> Disable |
| AP Isolation                  | <input type="radio"/> Enable <input checked="" type="radio"/> Disable |
| MBSSID AP Isolation           | <input type="radio"/> Enable <input checked="" type="radio"/> Disable |
| BSSID                         | 00:05:9E:8D:85:B8   |
| Frequency (Channel)           | 2462MHz (Channel 11) ▾  |

| Wireless Distribution System (WDS) <b>Only in Bridge/WDS mode</b> |  |
|---|--|
| Item  | Description  |
| <b>WDS Mode</b>   | This device supports "WDS Mode only" and "AP+WDS Mode". When selecting WDS mode only, this device provides WDS connection only and doesn't provide radio to the WLAN stations (clients). To provide both AP and WDS connections, select "AP + WDS Mode". |
| <b>AP MAC Address</b>   | This device connects 4 WDS devices. Enter the MAC Address in the field to connect.   |

| Wireless Network              |   |
|-------------------------------|---|
| Network Mode                  | 11b/g/n mixed mode ▾  |
| Network Name(SSID)            | WAP-6010PM  |
| Broadcast Network Name (SSID) | <input checked="" type="radio"/> Enable <input type="radio"/> Disable |
| AP Isolation                  | <input type="radio"/> Enable <input checked="" type="radio"/> Disable |
| BSSID                         | 00:05:9E:8D:85:B8   |
| Frequency (Channel)           | 2462MHz (Channel 11) ▾  |

| Wireless Distribution System(WDS) |                      |
|-----------------------------------|----------------------|
| AP MAC Address                    | 00:11:6B:11:12:13    |
| AP MAC Address                    | <input type="text"/> |
| AP MAC Address                    | <input type="text"/> |
| AP MAC Address                    | <input type="text"/> |

| HT Physical Mode—configurable in 11 b/g/n mixed. |   |
|--|---|
| Item   | Description   |
| <b>Operating Mode</b>                            | <p>Default: Mixed (Mixed, Green Field).</p> <p><b>Mixed mode:</b> In this mode the device transmits the packets with preamble compatible legacy (802.11g), so they can be decoded by legacy devices. The device receives and decodes both Mixed Mode packets and legacy packets.</p> <p><b>Green Field mode:</b> the device transmits HT packets without legacy compatible part. But the device receives and decodes both Green Field and legacy packets.</p> |
| <b>Channel Bandwidth</b>                         | <p>Click the radio button to choose between 20 MHz or 20/40MHz. This option affects the PHY data rate of radio. Please refer to the table below</p> <p><b>Note: It is necessary to have the same channel bandwidth in Bridge mode.</b></p>  |
| <b>Guard Interval</b>                            | <p>The 11n device inserts the Guard Interval into the signal. You can choose the interval between “Long” and “Auto”. This option affects the PHY data rate of radio. Please refer to the table below.</p>   |
| <b>MCS</b>                                       | <p>It is Modulation Coding Scheme. The available options are “Auto, 0, 1, ..., 32”. It changes the modulation of this device and effect the maximum PHY data rate. We recommend “Auto” setting. For the details, please refer to the table</p>  |

|                                      |  |
|--------------------------------------|--|
|                                      | below.   |
| <b>Reverse Direction Grant (RDG)</b> | Enable this function to provide more robust data packet transmission.  |
| <b>Extension Channel</b>             | The “20/40” bandwidth mode uses 5 channels. For example, selecting channel 7 and you can select 3 or 11 for extension channel. Choose the unused channel for the extension channel.  |
| <b>Aggregation MSDU (A-MSDU)</b>     | The multiple HT packets can be transmitted with single ACK reply packet. Enable it to apply this function and reduce the network congestion.   |
| <b>Auto Block ACK</b>                | It is another aggregation technique which prevents sending ACK in the communication to reduce the network congestion. If this option is enabled, the device will try to activate this function when transmitting massive data. |
| <b>Decline BA Request</b>            | Enable this option to decline the Block ACK request addressed by the other devices.  |

| HT Physical Mode             |   |
|------------------------------|---|
| Operating Mode               | <input checked="" type="radio"/> Mixed Mode <input type="radio"/> Green Field |
| Channel BandWidth            | <input type="radio"/> 20 <input checked="" type="radio"/> 20/40               |
| Guard Interval               | <input type="radio"/> Long <input checked="" type="radio"/> Auto              |
| MCS                          | Auto ▼  |
| Reverse Direction Grant(RDG) | <input checked="" type="radio"/> Disable <input type="radio"/> Enable         |
| Extension Channel            | 2442MHz (Channel 7) ▼   |
| Aggregation MSDU(A-MSDU)     | <input checked="" type="radio"/> Disable <input type="radio"/> Enable         |
| Auto Block ACK               | <input type="radio"/> Disable <input checked="" type="radio"/> Enable         |
| Decline BA Request           | <input checked="" type="radio"/> Disable <input type="radio"/> Enable         |

The table below shows the relationship among PHY data rate, Bandwidth and Guard Interval.

| Data Rate<br>Mbps<br>MCS | Bandwidth = 20MHz    |                     | Bandwidth = 40MHz    |                     |
|--------------------------|----------------------|---------------------|----------------------|---------------------|
|                          | Short Guard Interval | Long Guard Interval | Short Guard Interval | Long Guard Interval |
| 0 (1S)                   | 7.2                  | 6.5                 | 15                   | 13.5                |
| 1                        | 14.4                 | 13                  | 30                   | 27                  |
| 2                        | 21.7                 | 19.5                | 45                   | 40.5                |

|        |               |               |     |       |
|--------|---------------|---------------|-----|-------|
| 3      | 28.9          | 26            | 60  | 54    |
| 4      | 43.3          | 39            | 90  | 81    |
| 5      | 57.8          | 52            | 120 | 108   |
| 6      | 65            | 58.5          | 135 | 121.5 |
| 7      | 72.2          | 65            | 150 | 135   |
| 8 (2S) | 14.4          | 13            | 30  | 27    |
| 9      | 28.9          | 26            | 60  | 54    |
| 10     | 43.3          | 39            | 90  | 81    |
| 11     | 57.8          | 52            | 120 | 108   |
| 12     | 86.7          | 78            | 180 | 162   |
| 13     | 115.6         | 104           | 240 | 216   |
| 14     | 130           | 117           | 270 | 243   |
| 15     | 144.4         | 130           | 300 | 270   |
| 32     | Not Supported | Not Supported | 6.7 | 6     |

MCS: Modulation Coding Scheme

MCS=0~7 (1S, One Tx Stream)

MCS=8~15 (2S, Two Tx Stream)

MCS 32: BPSK

## Advanced

| Advanced Wireless              |   |
|--------------------------------|---|
| Item                           | Description   |
| <b>BG Protection Mode</b>      | Default: Auto. The available options are “Auto, On, Off”.<br>The B/G protection technology is CTS-To-Self. It will try to reserve the throughput for 11g clients from 11b clients connecting to the device as AP mode.                                    |
| <b>Beacon Interval</b>         | Beacons are the packets sending by Access point to synchronize the wireless network. The beacon interval is the time interval between beacons sending by this unit in AP or AP+WDS mode. The default and recommended beacon interval is 100 milliseconds. |
| <b>Data Beacon Rate (DTIM)</b> | This is the Delivery Traffic Indication Map. It is used to alert the clients that multicast and broadcast packets buffered at the AP will be transmitted immediately after the transmission of this beacon frame. You can change the                      |

|                           |  |
|---------------------------|--|
|                           | value from 1 to 255. The AP will check the buffered data according to this value. For example, selecting “1” means to check the buffered data at every beacon.   |
| <b>Fragment Threshold</b> | The fragmentation threshold determines the size at which packets are fragmented (sent as several pieces instead of as one block). Use a low setting in areas where communication is poor or where there is a great deal of radio interference. This function will help you to improve the network performance.   |
| <b>RTS Threshold</b>      | The RTS threshold determines the packet size at which the radio issues a request to send (RTS) before sending the packet. A low RTS Threshold setting can be useful in areas where many client devices are associating with the device, or in areas where the clients are far apart and can detect only the device and not each other. You can enter a setting ranging from 0 to 2347 bytes.     |
| <b>TX Power</b>           | <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> TX Power <input style="width: 50px;" type="text" value="100"/> (range 1 - 100, default 100) </div> The default TX power is 100%. In case of shortening the distance and the coverage of the wireless network, input a smaller value to reduce the radio transmission power. For example, input 80 to apply 80% Tx power. |
| <b>Short Preamble</b>     | Default: Disable. It is a performance parameter for 802.11 b/g mode and not supported by some of very early stage of 802.11b station cards. If there is no such kind of stations associated to this AP, you can enable this function.  |
| <b>Short Slot</b>         | For a WLAN network with 802.11g/n devices, the time slot can be set short to increase the throughput. Disable this option for the backward compatibility with 802.11b device.  |
| <b>Tx Burst</b>           | The device will try to send a serial of packages with single ACK reply from the clients. Enable this function to apply it.   |
| <b>Pkt_Aggregate</b>      | Enable this function will improve performance. It transmits in each package.   |

| Advanced Wireless       |   |
|-------------------------|---|
| BG Protection Mode      | Auto ▾  |
| Beacon Interval         | 100 ms (range 20 - 999, default 100)                                  |
| Data Beacon Rate (DTIM) | 1 ms (range 1 - 255, default 1)                                       |
| Fragment Threshold      | 2346 (range 256 - 2346, default 2346)                                 |
| RTS Threshold           | 2347 (range 1 - 2347, default 2347)                                   |
| TX Power                | 100 (range 1 - 100, default 100)                                      |
| Short Preamble          | <input type="radio"/> Enable <input checked="" type="radio"/> Disable |
| Short Slot              | <input checked="" type="radio"/> Enable <input type="radio"/> Disable |
| Tx Burst                | <input checked="" type="radio"/> Enable <input type="radio"/> Disable |
| Pkt_Aggregate           | <input checked="" type="radio"/> Enable <input type="radio"/> Disable |

| Wi-Fi Multimedia         |   |
|--------------------------|---|
| Item                     | Description   |
| <b>WMM Capable</b>       | Choose "Enable" to enable WMM function.   |
| <b>APSD Capable</b>      | Automatic Power Save Delivery   |
| <b>WMM Parameter</b>     | Click the button to edit the WMM parameter.   |
| <b>WMM Configuration</b> | Choose to Enable or Disable WMM (WiFi Multimedia) function. This function provides features that improve audio, video and voice applications over the wireless network. |

| Wi-Fi Multimedia |   |
|------------------|---|
| WMM Capable      | <input checked="" type="radio"/> Enable <input type="radio"/> Disable |
| APSD Capable     | <input type="radio"/> Enable <input checked="" type="radio"/> Disable |
| WMM Parameters   | <input type="button" value="WMM Configuration"/>                      |

| Multicast-to-Unicast Converter |  |
|--------------------------------|--|
| Item                           | Description  |
| <b>Multicast-to-Unicast</b>    | Enable/Disable to enable this function.<br>This function converts to Unicast format from Multicast. Unicast is a one-to one connection between the client and the server. Unicast uses IP delivery methods such as Transmission Control Protocol (TCP) and User Datagram |

|  |  |
|--|--|
|  | Protocol (UDP), which are session-based protocols. Multicast is a true broadcast. The multicast source relies on multicast-enabled routers to forward the packets to all client subnets that have clients listening. |
|--|--|

**Multicast-to-Unicast Converter**

Multicast-to-Unicast  Enable  Disable

## Security

### Wireless Security/Encryption Settings

| Select SSID        |   |
|--------------------|---|
| Item               | Description   |
| <b>SSID choice</b> | Choose the ESSID to configure the security setting. |

**Select SSID**

SSID choice

| Wireless Security/Encryption Settings |   |
|---------------------------------------|---|
| Item                                  | Description   |
| <b>Security Mode</b>                  | Disable, OPEN, SHARED, WEPAUTO, WPA, WPA-PSK, WPA2, WPA2-PSK, WPA/WPA2 PSK, WPA/WPA2, 802.1X. |

**"WAP-6010PM"**

Security Mode 

- Disable
- OPEN
- SHARED
- WEPAUTO
- WPA-PSK
- WPA2-PSK**

**Access Point Encryption**

WPA Algorithms  TKIP/AES

Pass Phrase

Key Renewal Interval  seconds (default 3600)

**Wireless Distribute System Encryption**

WDS Encryption Type

WDS Encryption Key

The available options show according to the numbers of the BSSID in the Basic Setting. Each SSID can setup different encryption type. For example, set up 4 BSSID and 4 sets of security shows on this page:

- Security Mode: Choose one as the wireless authentication among the following types: Open, Shared, WEP Auto, WPA, WPA-PSK, WPA2, WPA2-PSK, WPA/WPA2-PSK, WPA/WPA2, and 802.1X.
- Encryption Type: Select one for the encryption type. The options vary depending on the Authentication mode. The corresponding options shows below.

| Authentication                | Encryption Type     | Key Option   |
|-------------------------------|---------------------|--|
| Open/Shared/WEP Auto          | WEP                 | Default Key ID, Key content of Key 1/2/3/4             |
| WPA/WPA2-PSK (Pre-Shared Key) | TKIP, AES, TKIP/AES | Pass Phrase (8-32 bytes), Key Renewal Interval         |
| WPA/WPA2 Enterprise           | TKIP, AES, TKIP/AES | Radius Server Network/Address/Port/Key/Session timeout |

### WEP Encryption Setting

Wired Equivalent Privacy (WEP) is implemented in this device to prevent unauthorized access to your wireless network. The WEP setting must be as same as each client in your wireless network.

- Authentication Type: Open, Shared and Auto. When choose “Open” or “Shared”, all of the clients must select the same authentication to associate this AP. If select “WEP Auto”, the clients don’t have to use the same “Open” or “Shared” authentication. They can choose any one to authenticate.
- Default Key ID: Select whether the Key ID as the default Key.
- Key 1/2/3/4: Select “ASCII” or “Hex” and then type the key in the text field.
  - 64-bit WEP Encryption : 64-bit WEP keys are as same as the encryption method of 40-bit WEP. When input 10 hexadecimal digits (0-9, a-f or A-F) or 5 ACSII chars as the key, it is using 64-bit WEP encryption.
  - 128-bit WEP Encryption : 128-bit WEP keys are as same as the encryption method of 104-bit WEP. When input 26 hexadecimal digits (0-9, a-f or A-F) or 10 ACSII chars, it is using 128-bit WEP encryption.

### WPA Authentication Mode

This device supports six WPA modes including WPA-PSK (Pre-Shared Key), WPA, WPA2-PSK, WPA2 and additional WPA/WPA2 PSK and WPA/WPA2 mixed mode. For individual and residential user, it is recommended to select WPA-PSK or

WPA2-PSK to encrypt the link without additional RADIUS server. This mode requires only an access point and client station that supports WPA-PSK. For WPA/WPA2, authentication is achieved via WPA RADIUS Server. You need a RADIUS or other authentication server on the network.

- **WPA/WPA2-PSK:**

- **Pass Phrase:**

Option: Pass Phrase (8-32 ACSII chars). This mode requires only an access point and client station that supports WPA-PSK. The WPA-PSK settings include Key Format, Length and Value. They must be as same as each wireless client in your wireless network. When Key format is Passphrase, the key value should have 8-63 ACSII chars.

- **Key Renewal Interval:**

The WPA Algorithm will regroup the key for a period. The default value is 3600 seconds and you can adjust the time interval.

- **WPA/WPA2:**

When selecting WPA/WPA2, you have to add user accounts and the target device to the RADIUS Server. In the device, you need to specify the Server Network, Server address, Server Port and Server Key of the target RADIUS server.

- **WPA Algorithms:** TKIP, AES, TKIP/AES. Select the encryption type. When selecting TKIP/AES, the client can use whether TKIP or AES for the authentication.

- **Pre-Authentication Support option:** This option only appears when selecting WPA2 or WPA/WPA2 as the authentication mode. Enable it to use this function.

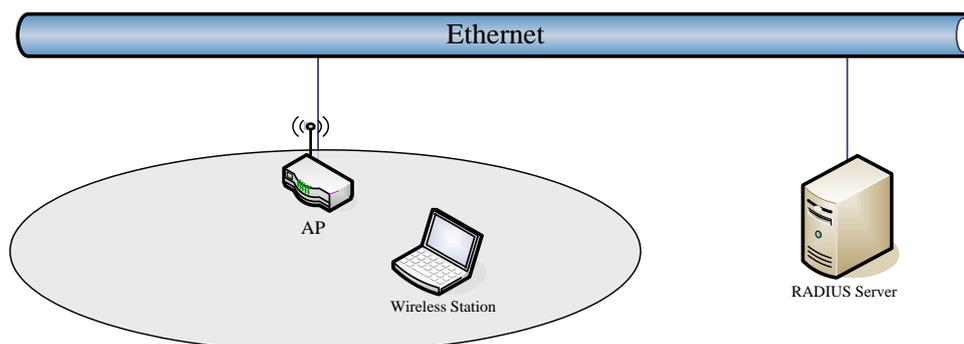
- **Radius Server setting:**

- **IP Address:** Input the IP Address of the Radius server.

- **Port:** Input the port of the Radius server. The default port is 1812.

- **Shared Secret:** Input the Authentication Key.

- **Session Timeout:** Input the maximum idle time for this connection.



Hereby, this is the available security setting for each mode.

| <b>WLAN security</b>          | <b>AP</b> | <b>Bridge</b> | <b>WDS Mode</b> | <b>Repeater</b> | <b>AP Client-Infrastructure</b> | <b>AP Client – Ad Hoc</b>                          |
|-------------------------------|-----------|---------------|-----------------|-----------------|---------------------------------|--|
| <b>No encryption</b>          | V         | V             | V               | V               | V                               | V  |
| <b>WEP (open/Shared/Auto)</b> | V         | V             | V               | V               | V                               | V  |
| <b>WPA</b>                    | V         | X             | X               | V               | X                               | X  |
| <b>WPA2</b>                   | V         | X             | X               | V               | X                               | X  |
| <b>WPA-PSK</b>                | V         | V             | V               | V               | V                               | V<br>WPA-NONE                                      |
| <b>WPA2-PSK</b>               | V         | V             | V               | V               | V                               | X  |
| <b>802.1X</b>                 | V         | X             | X               | V               | X                               | X  |
| <b>WPS</b>                    | V         | V             | X               | V               | V                               | X<br>Auto Change to Infrastructure when Enable WPS |

V: Supported.

X: Not supported.

WDS function supports the same model only.

WPS function supports only WPA-PSK or WPS2-PSK encryption.

### **Access Policy**

For each SSID, the Access Policy can be selected and setup. The policy includes “Reject” and “Allow”. The Reject policy rejects the station according to the MAC table in the policy configuration, and let the other stations to connect. The allow policy performs reversely.

Add a station MAC: Key in station MAC Address in the text field. The valid format of the MAC Address is “00:11:6B:11:12:13”. The station MAC Address can be found on the label or configure utility of the WLAN card. For deleting one record in the table, click the “Del” button of the record. The maximum number of record on the table is 64.

## Wireless Security/Encryption Settings

Setup the wireless security and encryption to prevent from unauthorized access and monitoring.

---

| Select SSID |              |
|-------------|--------------|
| SSID choice | WAP-6010PM ▾ |

---

| "WAP-6010PM"  |            |
|---------------|------------|
| Security Mode | WPA2-PSK ▾ |

---

| Access Point Encryption |  |
|-------------------------|--|
| WPA Algorithms          | <input type="radio"/> TKIP <input checked="" type="radio"/> AES <input type="radio"/> TKIP/AES |
| Pass Phrase             | ●●●●●●●●   |
| Key Renewal Interval    | 3600 seconds (default 3600)  |

---

| Wireless Distribute System Encryption |        |
|---------------------------------------|--------|
| WDS Encryption Type                   | TKIP ▾ |
| WDS Encryption Key                    |        |

---

| Access Policy      |           |
|--------------------|-----------|
| Policy             | Disable ▾ |
| Add a station Mac: |           |

# WPS

This function helps to establish the Wi-Fi security. For AP mode, it can be setup one WPS method including PIN (Personal Identification Number) and PBC (Push Button Configuration).

To begin the WPS progress, the WLAN security must be setup first. Please setup one among WPAPSK, WPA2PSK, WPA/WPA2PSK and then apply WPS setting.

**PIN:** query the PIN code in the utility of WLAN client, and then enter it in the PIN field. The Wi-Fi link between the WLAN client and the device should be encrypted.

**PBC:** Select PBC, and then you can begin the PBC process. Press the PBC button in the front panel can also trigger this process. Press or click the PBC button on the WLAN client

to finish the communication. You can press the PBC button on the WLAN client first and then click the PBC button on this device to establish the encryption.

The options and the information fields are showed below.

| WPS Configuration         |                                 |
|---------------------------|---------------------------------|
| Item                      | Description                     |
| <b>WPS Enable/Disable</b> | Select to enable this function. |

| WPS Summary—information of WPS |  |
|--------------------------------|--|
| Item                           | Description  |
| <b>WPS Current Status</b>      | It shows the current status of the WPS process.  |
| <b>WPS Configured</b>          | It indicated whether the WPS is configured.  |
| <b>WPS SSID</b>                | It is the first SSID of the device.  |
| <b>WPS Auth Mode</b>           | It indicates the authenticate mode of this device. It can be configured in the wireless security page.                               |
| <b>WPS Encryption Type</b>     | It indicates the encryption method of this device. Like WPS authentication mode, it can be configured in the wireless security page. |
| <b>AP PIN</b>                  | It shows the current PIN number of this device.  |
| <b>Reset OOB button</b>        | Press this button to reset the WPS of this device. The AP PIN number will be changed.  |

| WPS Progress    |  |
|-----------------|--|
| Item            | Description  |
| <b>WPS mode</b> | Choose to use PIN (Personal Identification Number) or PBC (Push Button Configuration). |
| <b>PIN</b>      | Input the 8-digit PIN of client.   |
| <b>PBC</b>      | Push Button Configuration control  |

## Wi-Fi Protected Setup

You could setup security easily by choosing PIN or PBC method to do Wi-Fi Protected Setup. WPS will only be available to WPAPSK, WPA2PSK, and WPAWPA2PSK encryption.

---

### WPS Config

WPS:  ▼

---

### WPS Summary

|                      |                   |
|----------------------|-------------------|
| WPS Current Status:  | Start WSC Process |
| WPS Configured:      | Yes               |
| WPS SSID:            | WAP-6010PM        |
| WPS Auth Mode:       | WPA2-PSK          |
| WPS Encryption Type: | AES               |

---

### WPS Progress

WPS mode:  PIN  PBC

PIN:

---

### WPS Status

WSC:Start WSC Process

## Station List

In the Station list, the information of associated clients is displayed.

Site contents

- Setup Wizard
- TCP/IP Settings
- Wireless Settings
- Operation Mode
- Basic
- Advanced
- Security
- WPS
- Station List
- Management

### Station List

You could monitor stations which associated to this AP here.

| MAC Address       | Aid | PSM | MimoPS | MCS | BW  | SGI | STBC |
|-------------------|-----|-----|--------|-----|-----|-----|------|
| 00:02:6F:52:33:00 | 2   | 0   | 3      | 7   | 40M | 1   | 1    |

# Client Mode

## Profile



In the first page, you can see the profile list to show the information including Profile name, SSID, Channel, Authentication, Encryption and Network Type. Use four buttons to manage the profile list. The “Add” button is to add a new profile. The “Delete” button is to delete the selected profile. The “Edit” button is to edit the selected profile. The “Activate” button is to enable the selected button, so this device will associate to the AP according to the profile.

**Note: The green icon will be shown if try to connect it in Ad Hoc of AP Client mode.**

| System Configuration      |  |
|---------------------------|--|
| Item                      | Description  |
| <b>Profile Name</b>       | Enter your profile name.   |
| <b>SSID</b>               | Enter the SSID of the AP or Ad Hoc network.  |
| <b>Network Type</b>       | Choose one between “802.11Ad Hoc” and Infrastructure.  |
| <b>Channel</b>            | This option shows only for the Ad Hoc network. Select one for it.  |
| <b>11B Preamble Type</b>  | In the Ad Hoc network, choose “Long” for the compatibility of the some old 802.11b station cards, or “Auto” for setup this option automatically. |
| <b>Power Saving Mode</b>  | For the Infrastructure network, this device can be setup to CAM (Constantly Awake Mode) or Power Saving Mode.                                    |
| <b>RTS Threshold</b>      | Check the box to setup the RTS Threshold. The default value is 2347 and the available range is from 0 to 2432.                                   |
| <b>Fragment Threshold</b> | Check the box to setup the Fragment Threshold. The default value is 2346 and the available range is from 256 to 2432.                            |

| System Configuration |   |
|----------------------|---|
| Profile Name         | PROF001   |
| SSID                 |   |
| Network Type         | Infrastructure  |
| Power Saving Mode    | <input checked="" type="radio"/> CAM (Constantly Awake Mode)<br><input type="radio"/> Power Saving Mode |
| RTS Threshold        | <input type="checkbox"/> Used <input type="text" value="2347"/> (range 1 - 2347)                        |
| Fragment Threshold   | <input type="checkbox"/> Used <input type="text" value="2346"/> (range 256 - 2346)                      |

| Security Policy      |  |
|----------------------|--|
| Item                 | Description  |
| <b>Security Mode</b> | Please choose the encryption method. The available options are OPEN, SHARED, WPA-Personal and WPA2-Personal. |

| Security Policy |      |
|-----------------|------|
| Security Mode   | OPEN |

| WEP/WPA PSK                 |  |
|-----------------------------|--|
| Item                        | Description  |
| <b>WEP Key Length</b>       | Choose to use 64bit or 128bit length of key.   |
| <b>WEP Key Entry Method</b> | Select the key type. The available options are ASCII Text or Hexadecimal.                        |
| <b>WEP Keys</b>             | For WEP key, please input the key1-4. The key text and the length must match the above settings. |
| <b>Default Key</b>          | Select the default Tx WEP key.   |
| <b>WPA Algorithms</b>       | Choose the algorithm between TKIP and AES.   |
| <b>Pass Phrase</b>          | Input the key for WPA-PSK/WPA2-PSK. The length is from 8 to 63 characters.                       |

| Wire Equivalence Protection (WEP) |   |                      |
|-----------------------------------|---|----------------------|
| WEP Key Length                    | 64 bit (10 hex digits / 5 ascii keys) ▾ |                      |
| WEP Key Entry Method              | Hexadecimal ▾                           |                      |
| WEP Keys                          | WEP Key 1 :                             | <input type="text"/> |
|                                   | WEP Key 2 :                             | <input type="text"/> |
|                                   | WEP Key 3 :                             | <input type="text"/> |
|                                   | WEP Key 4 :                             | <input type="text"/> |
| Default Key                       | Key 1 ▾                                 |                      |

## Link Status

The status of the radio shows in this field.

|                                  | SSID              | BSSID             | RSSI | Channel | Encryption | Authentication | Network Type   |
|----------------------------------|-------------------|-------------------|------|---------|------------|----------------|----------------|
| <input checked="" type="radio"/> | MeetingRoom       | 00-11-6B-B0-87-9C | 100% | 7       | WEP        | -----          | Infrastructure |
| <input type="radio"/>            | wan-1112          | 00-19-5B-43-29-8E | 34%  | 1       | Not Use    | OPEN           | Infrastructure |
| <input type="radio"/>            | WBR-6600          | 00-11-6B-53-94-E8 | 0%   | 1       | Not Use    | OPEN           | Infrastructure |
| <input type="radio"/>            | WBR-6003          | 00-50-18-21-CD-7D | 0%   | 1       | Not Use    | OPEN           | Infrastructure |
| <input type="radio"/>            | FON_AP_CK         | 00-18-84-A4-DB-05 | 0%   | 2       | Not Use    | OPEN           | Infrastructure |
| <input type="radio"/>            | WAP-0003          | 00-11-6B-60-6A-C5 | 100% | 6       | WEP        | -----          | Infrastructure |
| <input type="radio"/>            | default           | 00-C0-02-FF-AD-9C | 10%  | 10      | Not Use    | OPEN           | Infrastructure |
| <input type="radio"/>            | Danny_wbr3405     | 00-11-6B-B0-6A-01 | 0%   | 10      | Not Use    | OPEN           | Infrastructure |
| <input type="radio"/>            | WBR-6001          | 00-11-6B-2A-30-C6 | 100% | 11      | Not Use    | OPEN           | Infrastructure |
| <input type="radio"/>            | WBR-6003          | 00-50-18-21-CD-36 | 100% | 11      | Not Use    | OPEN           | Infrastructure |
| <input type="radio"/>            | WBR-3408          | 00-C0-02-FF-C4-9A | 24%  | 11      | TKIP; AES  | WPA-PSK        | Infrastructure |
| <input type="radio"/>            | QC-6000           | 00-11-6B-17-48-F6 | 50%  | 11      | Not Use    | OPEN           | Infrastructure |
| <input type="radio"/>            | 5400lab           | 00-50-18-00-0F-01 | 29%  | 11      | TKIP       | WPA-PSK        | Infrastructure |
| <input type="radio"/>            | WBR-6001          | 00-11-6B-29-36-D4 | 0%   | 11      | Not Use    | OPEN           | Infrastructure |
| <input type="radio"/>            | Admin             | 00-C0-02-FF-C7-F4 | 5%   | 11      | TKIP       | WPA2-PSK       | Infrastructure |
| <input type="radio"/>            | WBR-6000          | 00-11-6B-17-48-F0 | 0%   | 11      | Not Use    | OPEN           | Infrastructure |
| <input type="radio"/>            | Danny_wbr3400     | 00-C0-02-DF-F2-40 | 5%   | 11      | Not Use    | OPEN           | Infrastructure |
| <input type="radio"/>            | WBR-6000v3_TSD    | 00-11-6B-18-DB-FE | 15%  | 11      | Not Use    | OPEN           | Infrastructure |
| <input type="radio"/>            | -- Hidden SSID -- | 00-11-6B-22-51-50 | 10%  | 11      | Not Use    | OPEN           | Infrastructure |

## Site Survey

Site survey page shows information of APs nearby. You may choose one of these APs connecting or adding it to profile.

| Advance Configuration |   |
|-----------------------|---|
| Item                  | Description   |
| <b>Connect button</b> | Check the radio button in front of the ESSID and click “Connect” button to connect. |
| <b>Rescan</b>         | Click this button to refresh the list.  |
| <b>Add Profile</b>    | Check the radio button and click this button to add the ESSID to the profile.       |

|                                  | SSID  | BSSID             | RSSI | Channel | Encryption | Authentication | Network Type   |
|----------------------------------|---|-------------------|------|---------|------------|----------------|----------------|
| <input checked="" type="radio"/> |  MeetingRoom | 00-11-6B-B0-87-9C | 96%  | 7       | WEP        | -----          | Infrastructure |
| <input type="radio"/>            | ii  | 8A-31-7A-39-3D-F9 | 29%  | 1       | TKIP       | WPA-NONE       | Ad Hoc         |
| <input type="radio"/>            | WAP-0003  | 00-11-6B-60-6A-C5 | 60%  | 6       | WEP        | -----          | Infrastructure |
| <input type="radio"/>            | WBR-6001TSD   | 00-11-6B-29-30-84 | 29%  | 6       | Not Use    | OPEN           | Infrastructure |
| <input type="radio"/>            | WBR-6001  | 00-11-6B-2A-30-C6 | 100% | 11      | Not Use    | OPEN           | Infrastructure |
| <input type="radio"/>            | QC-6000   | 00-11-6B-17-48-F6 | 44%  | 11      | Not Use    | OPEN           | Infrastructure |
| <input type="radio"/>            | WBR-6003  | 00-50-18-21-CD-36 | 100% | 11      | Not Use    | OPEN           | Infrastructure |
| <input type="radio"/>            | -- Hidden SSID --   | 00-11-6B-22-51-50 | 15%  | 11      | Not Use    | OPEN           | Infrastructure |

Connected <--> MeetingRoom

## Statistics

The Status page shows the settings and current operation status of the Station.

| Station Statistics  |       |
|---|-------|
| The Status page shows the settings and current operation status of the Station. |       |
| Transmit Statistics   |       |
| Frames Transmitted Successfully   | 217   |
| Frames Transmitted Successfully Without Retry                                   | 206   |
| Frames Transmitted Successfully After Retry(s)                                  | 11    |
| Frames Fail To Receive ACK After All Retries                                    | 0     |
| RTS Frames Successfully Receive CTS   | 0     |
| RTS Frames Fail To Receive CTS  | 0     |
| Receive Statistics  |       |
| Frames Received Successfully  | 13338 |
| Frames Received With CRC Error  | 22245 |
| Frames Dropped Due To Out-of-Resource   | 0     |
| Duplicate Frames Received   | 3     |
| <input type="button" value="Reset Counters"/>                                   |       |

## QoS

| QoS Configuration       |   |
|-------------------------|---|
| Item                    | Description   |
| <b>WMM</b>              | Check the box to enable WMM function. It depends on the associated AP, if it supports WMM and you can enable this function on this device.  |
| <b>WMM Power Saving</b> | Check the box to enable WMM function. It depends on the associated AP, if it supports WMM and you can enable this function on this device. When enabled, the options below can be configured. |
| <b>PS Mode</b>          | The options are "AC_BE", "AC_BK", "AC_VI" and "AC_VO". Please select the respective options according to the AP.  |

| Qos Configuration                    |   |
|--------------------------------------|---|
| WMM                                  | <input checked="" type="checkbox"/> enable  |
| WMM Power Saving                     | <input type="checkbox"/> enable   |
| PS Mode                              | <input type="checkbox"/> AC_BE <input type="checkbox"/> AC_BK <input type="checkbox"/> AC_VI <input type="checkbox"/> AC_VO |
| <input type="button" value="Apply"/> |   |

## WPS

The WPS AP lists in the top of the page. The bottom panel shows the status of WPS. Please refer to the section of Access Point mode for the operation.

| 11n Configuration     |   |
|-----------------------|---|
| Item                  | Description   |
| <b>Refresh button</b> | Click this button to refresh the WPS AP list.   |
| <b>Mode</b>           | This device only supports Enrollee in WLAN client mode.                                   |
| <b>PIN</b>            | This is the PIN code for PIN communication. Click "Renew PIN" to generate a new PIN code. |
| <b>PIN Start</b>      | Click this button to start PIN process.   |
| <b>PBC Start</b>      | Click this button to start PBC process.   |
| <b>Cancel</b>         | Click this button to cancel the establishing WPS link.                                    |
| <b>Renew PIN</b>      | Click this button to discard current PIN and generate a new PIN code.                     |

| WPS AP site survey               |          |              |      |     |       |         |      |         |
|----------------------------------|----------|--------------|------|-----|-------|---------|------|---------|
| No.                              | SSID     | BSSID        | RSSI | Ch. | Auth. | Encrypt | Ver. | Status  |
| <input type="radio"/>            | WBR-6001 | 00116B2A30C6 | 100% | 11  | OPEN  | Not Use | 1.0  | Conf.   |
| <input type="radio"/>            | QC-6000  | 00116B1748F6 | 50%  | 11  | OPEN  | Not Use | 1.0  | Conf.   |
| <input checked="" type="radio"/> | WBR-6000 | 00116B1748F0 | 15%  | 11  | OPEN  | Not Use | 1.0  | Unconf. |

|  |   |  |  |  |                                       |
|--|---|--|--|--|---------------------------------------|
| <input type="button" value="Refresh"/>   | Mode: <input type="text" value="Enrollee"/> | PIN: <input type="text" value="12888696"/> | <input type="button" value="PIN Start"/> | <input type="button" value="PBC Start"/> | <input type="button" value="Cancel"/> |
| <input type="button" value="Renew PIN"/> |   |  |  |  |                                       |

| WPS Status        |
|-------------------|
| Start WSC Process |

# Management

## Status

### System Info

| Item                    | Description   |
|-------------------------|---|
| <b>Model</b>            | It shows the model name of the device.  |
| <b>Firmware Version</b> | It shows the version of firmware on this device.  |
| <b>System Time</b>      | It indicates the time on this device. If the NTP client is enabled, the time will sync with the NTP server. |
| <b>Operation Mode</b>   | It shows the operation mode of this device.   |

| System Info      |                      |
|------------------|----------------------|
| Model            | WAP-6010             |
| Firmware Version | 1.1.0k (Mar 24 2009) |
| System Time      | 2000/1/1 Sat 0:2:44  |
| Operation Mode   | AP Mode              |

### Local Network

| Item                    | Description                                   |
|-------------------------|---|
| <b>Local IP Address</b> | This is the IP Address of the LAN interface.  |
| <b>Local Netmask</b>    | This is the Netmask for the LAN.              |
| <b>MAC Address</b>      | This is the MAC Address of the LAN interface. |

| Local Network    |                   |
|------------------|-------------------|
| Local IP Address | 192.168.0.254     |
| Local Netmask    | 255.255.255.0     |
| MAC Address      | 00:05:9E:8D:85:B8 |

### Wireless Information

#### AP mode

| Item              | Description  |
|-------------------|--|
| <b>Mode</b>       | This is the wireless mode for the device such as AP, Client Mode.              |
| <b>Band</b>       | It shows the current radio mode such as "B+G+N", "B+G", "B only" and "G only". |
| <b>SSID</b>       | It shows the SSID of this device.  |
| <b>Channel</b>    | It shows the current channel of the radio.                                     |
| <b>Encryption</b> | It indicates the encryption type for the radio.                                |

|                           |   |
|---------------------------|---|
| <b>Bssid</b>              | It is the current BSSID of the radio. In this device, it is also the MAC Address of the WLAN interface. |
| <b>Associated Clients</b> | The number of associated WLAN clients show in this field.   |
| <b>Driver Vision</b>      | This is the driver version.   |

| Wireless Information |                          |
|----------------------|--------------------------|
| Mode                 | AP                       |
| Band                 | 2.4 GHz (B+G+N)          |
| SSID                 | WAP-6010PM               |
| Channel              | 11                       |
| Encryption           | WPA2PSK                  |
| Bssid                | 00:05:9E:8D:85:B8        |
| Associated Clients   | 1                        |
| Driver Version       | AP 2.0.0.0 / STA 1.8.0.0 |

### Client Mode

| Item                 | Description   |
|----------------------|---|
| <b>Mode</b>          | This is the wireless mode for the device such as AP, Client Mode. |
| <b>Status</b>        | This is the WLAN status.  |
| <b>Extra Info</b>    | Reserved for the future expansion.                                |
| <b>Channel</b>       | It indicates the current Wi-Fi channel.                           |
| <b>Link speed</b>    | It shows the PHY data rate of transmit and receive.               |
| <b>Link Quality</b>  | It indicates the link quality of current link.                    |
| <b>MAC Address</b>   | This is the MAC Address of the radio.                             |
| <b>Driver Vision</b> | This is the driver version.                                       |

| Wireless Information |   |
|----------------------|---|
| Mode                 | AP Client                               |
| Status               | MeetingRoom <--> 00-11-6B-B0-87-9C      |
| Extra Info           | Link is Up                              |
| Channel              | 7 <--> 2442000 KHz ; Central Channel: 7 |
| Link Speed           | Tx(Mbps) 54.0 Rx(Mbps) 6.0              |
| Link Quality         | Good 96%                                |
| MAC Address          | 00:05:9E:8D:85:B8                       |
| Driver Version       | AP 2.0.0.0 / STA 1.8.0.0                |

# Statistic

## Memory

| Item                | Description                                    |
|---------------------|--|
| <b>Memory total</b> | This is the total memory size for this device. |
| <b>Memory left</b>  | The available memory size shows in this field. |

## WAN/LAN

The information below shows the transmit status.

WAN Rx packets, WAN Rx bytes, WAN Tx packets, WAN Tx bytes, LAN Rx packets, LAN Rx bytes, LAN Tx packets, LAN Tx bytes.

## All interfaces

The information likes “Rx Packet”, “Rx Byte”, “Tx Packet” and “Tx Byte” shows the status of all interface including “eth2, lo, ra0, ra1, ra2, ra3, wds0, wds1, wds2, wds3, eth2.1, eth2.2, br0”

| Memory          |              |
|-----------------|--------------|
| Memory total:   | 29584 kB     |
| Memory left:    | 12776 kB     |
| LAN             |              |
| LAN Rx packets: | 948          |
| LAN Rx bytes:   | 73394        |
| LAN Tx packets: | 227          |
| LAN Tx bytes:   | 118006       |
| All interfaces  |              |
| Name            | LAN          |
| Rx Packet       | 344          |
| Rx Byte         | 36713        |
| Tx Packet       | 939          |
| Tx Byte         | 177934       |
| Name            | Wireless LAN |
| Rx Packet       | 3239         |
| Rx Byte         | 289614       |
| Tx Packet       | 81           |
| Tx Byte         | 8993         |

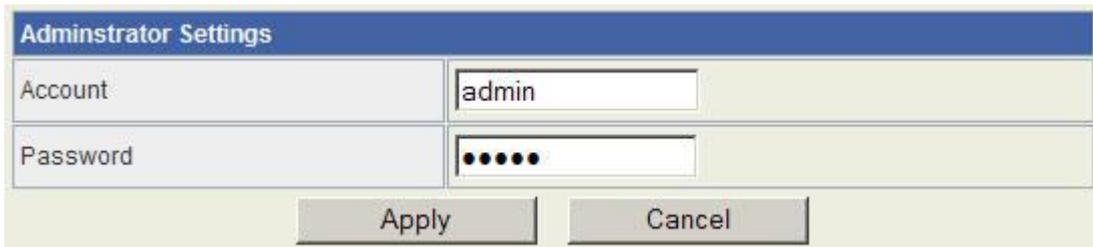
# System Management

## Administrator Settings

Enter the account for login the web interface.

Account: enter the name for login. The default name is “admin”.

Password: enter the password for login. The default password is “admin”.



The image shows a web form titled "Adminstrator Settings" (note the typo). It has two input fields: "Account" with the value "admin" and "Password" with six dots. Below the fields are two buttons: "Apply" and "Cancel".

## NTP Settings

Current Time:

The current time on the device shows in this field. Click “Sync” button to sync the time with NTP server.

Time Zone:

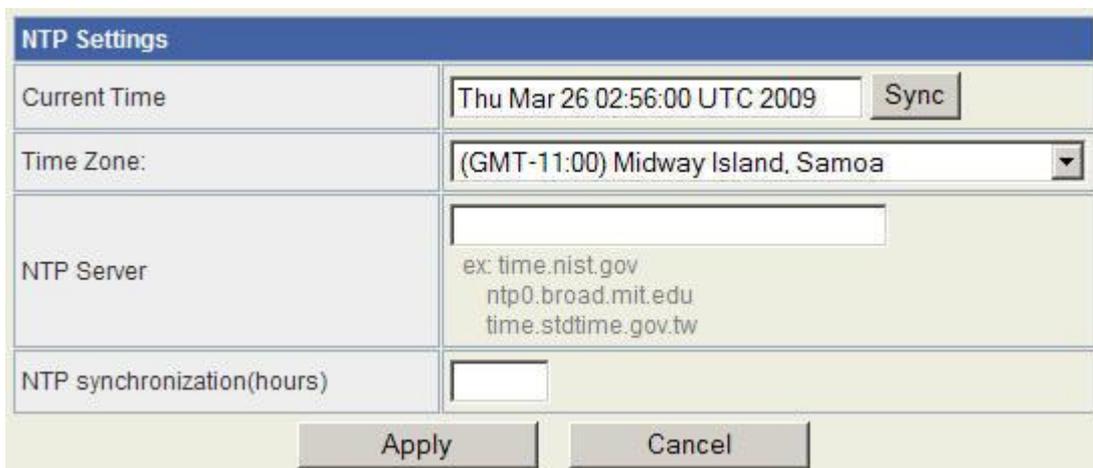
Select local time zone.

NTP Server:

Input the NTP server address. If you are not sure about the local NTP server address, you can input pool.ntp.org.

NTP synchronization (hours):

This is the time interval of NTP synchronization. The range is 1-300 hours. It is the necessary field for NTP setting and please input it to apply.



The image shows a web form titled "NTP Settings". It has four input fields: "Current Time" with the value "Thu Mar 26 02:56:00 UTC 2009" and a "Sync" button; "Time Zone:" with a dropdown menu showing "(GMT-11:00) Midway Island, Samoa"; "NTP Server" with a text input field and examples: "ex: time.nist.gov", "ntp0.broad.mit.edu", "time.stdtime.gov.tw"; and "NTP synchronization(hours)" with an empty text input field. Below the fields are two buttons: "Apply" and "Cancel".

## Reboot System

Click the button to reboot the device.



## SNMP

To configure the SNMP settings. You can get some of the system information via setting the SNMP network protocol.

| SNMP Settings             |           |
|---------------------------|-----------|
| SNMP                      | Enable ▾  |
| Read Community            | public    |
| Trap Host                 |           |
| Trap Community            | public    |
| System Name               | WAP6010   |
| System Location           | Somewhere |
| System Contact            | Someone   |
| Trap Receiver IP Address1 |           |
| Address1 Community String |           |
| Trap Receiver IP Address2 |           |
| Address2 Community String |           |
| Trap Receiver IP Address3 |           |
| Address3 Community String |           |

This device is compatible with SNMP v1/v2c and provides standard MIB II. Currently only the “public” community string is available and the modified settings by SNMP SET request will be lost after rebooting the device

| <b>SNMP Settings</b>              |  |
|-----------------------------------|--|
| <b>Item</b>                       | <b>Description</b>   |
| <b>snmp Enable text</b>           | Options: Enable/Disable. Select “Enable” to enable this function. The details setting shows only when enables this function. |
| <b>Read Community</b>             | This is password sent with each trap to the SNMP Manager.  |
| <b>Write Community</b>            | Input the password for the write community. This function is still under development.  |
| <b>Trap Host</b>                  | Reserved for the write community.  |
| <b>Trap Community</b>             | Reserved for the write community.  |
| <b>System Name</b>                | Type in the Name of this device.   |
| <b>System Location</b>            | Type in the Location which is location of device   |
| <b>System Contact</b>             | Type in the Name which is person or group when the device has problem can find they.   |
| <b>Trap Receiver IP Address 1</b> | This device supports up to 3 traps.<br>Type in the IP Address of the first SNMP Manager.                                     |
| <b>Address 1 Community String</b> | This is password receive with the first trap from the device (SNMP Agent).   |
| <b>Trap Receiver IP Address 2</b> | Type in the IP Address of the second SNMP Manager.   |
| <b>Address 2 Community String</b> | This is password receive with the second trap from the device (SNMP Agent).  |
| <b>Trap Receiver IP Address 3</b> | Type in the IP Address of the third SNMP Manager.  |
| <b>Address 3 Community String</b> | This is password receive with the third trap from the device (SNMP Agent).   |

| <b>SNMP Traps</b>                |   |
|----------------------------------|---|
| <b>Item</b>                      | <b>Description</b>  |
| <b>Cold Start(0)</b>             | This is the trap from device after reboot the device.                                     |
| <b>Link Down(2)</b>              | The trap is sent when any of the links are down. See the following table.                 |
| <b>Linkup(3)</b>                 | The trap is sent when any of the links are UP. See the following table.                   |
| <b>Authentication Failure(4)</b> | The trap is sent when the device receiving gets or sets requirement with wrong community. |

## Upgrade Firmware

This page provides the firmware upgrade function. Click the browse button to browse the file and click “open” button to select the file. The upgrade process takes about 1 minute and do not power off the device during this period.



## Save/Reload Settings

In this page, you can export the setting, import the setting or load the factory default.

### Export Settings:

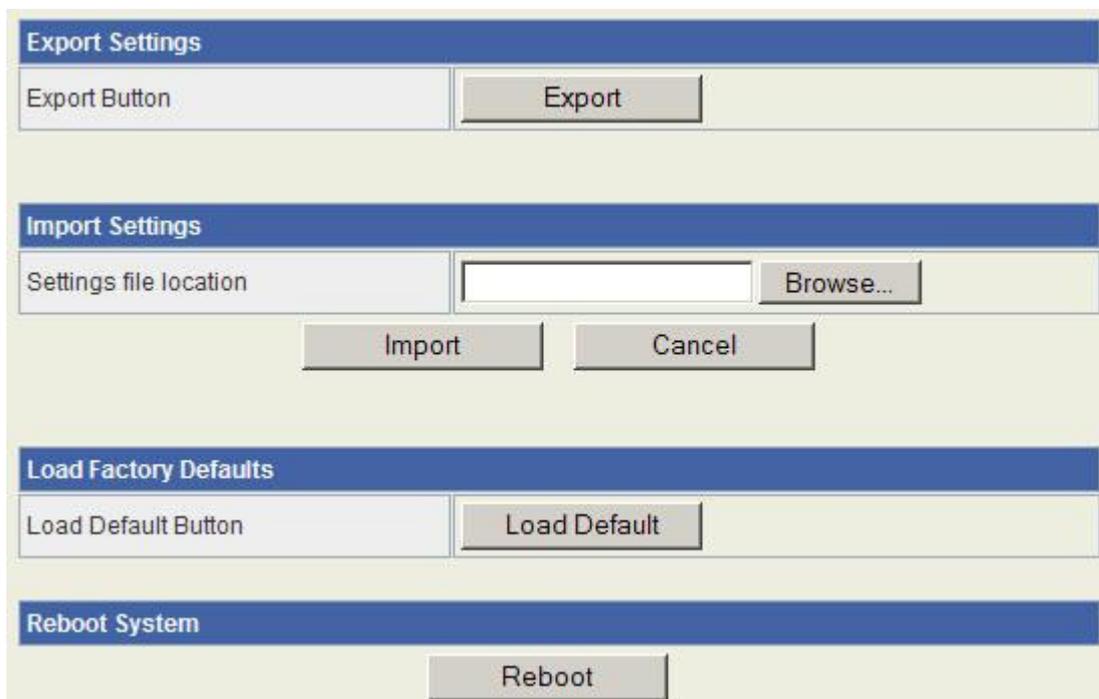
To export the settings, click "Export" button to open or save the configuration. In the pop up window, click "Open" to open the configuration. You can read the configuration in the next page. Click "Save" to save the configuration file. The file extension is ".dat".

### Import Settings:

To import the settings, click "Browse" to browse the file, and then click "Import" to import the setting file.

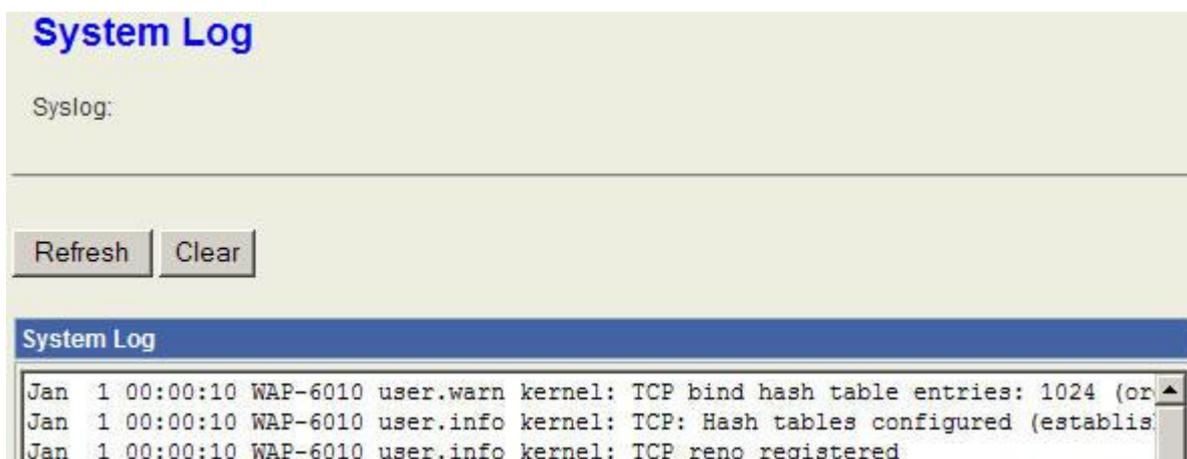
### Load Factory Defaults:

Click "Load Default" button to reset the device to factory default. All users' settings will be cleared.



## System Log

The system log shows in this window. For technical support, you may need to copy and save the log to text file and send it to the technical service. Click “Refresh” button to refresh the page or “Clear” button to clear the log.



## Channel Number

The following table is the available frequencies (in MHz) for the 2.4 GHz radio:

| Channel No. | Frequency | Region Domain  |
|-------------|-----------|--|
| 1           | 2412      | Americas, Taiwan, EMEA, Japan, Israel, Australia and China |
| 2           | 2417      | Americas, Taiwan, EMEA, Japan, Israel, Australia and China |
| 3           | 2422      | Americas, Taiwan, EMEA, Japan, Israel, Australia and China |
| 4           | 2427      | Americas, Taiwan, EMEA, Japan, Israel, Australia and China |
| 5           | 2432      | Americas, Taiwan, EMEA, Japan, Israel, Australia and China |
| 6           | 2437      | Americas, Taiwan, EMEA, Japan, Israel, Australia and China |
| 7           | 2442      | Americas, Taiwan, EMEA, Japan, Israel, Australia and China |
| 8           | 2447      | Americas, Taiwan, EMEA, Japan, Israel, Australia and China |
| 9           | 2452      | Americas, Taiwan, EMEA, Japan, Israel, Australia and China |
| 10          | 2457      | Americas, Taiwan, EMEA, Japan, Israel, Australia and China |
| 11          | 2462      | Americas, Taiwan, EMEA, Japan, Israel, Australia and China |
| 12          | 2467      | EMEA, Japan, Israel, Australia and China                   |
| 13          | 2472      | EMEA, Japan, Israel, Australia and China                   |
| 14          | 2484      | Japan, only in 802.11b mode                                |

\*: EMEA (Europe, the Middle East and Africa).

The available channel is set by the factory according to the region of distribution and can't be changed by user. For example, the available channel of the American model is from ch1 to ch11.

## Specification

|                               |  |
|-------------------------------|--|
| <b>Frequency Range</b>        | 2.4~2.4835GHz  |
| <b>802.11b TX power</b>       | 17dBm ± 1dB@11Mbps   |
| <b>802.11g TX power</b>       | 14dBm ± 1dB@54Mbps   |
| <b>802.11n TX power</b>       | 14dBm ± 1dB@150Mbps  |
| <b>802.11b RX sensitivity</b> | -89dBm ± 2dB@11Mbps  |
| <b>802.11g RX sensitivity</b> | -74dBm ± 2dB@54Mbps  |
| <b>802.11n RX sensitivity</b> | -66dBm ± 2dB@150Mbps   |
| <b>Data Rate</b>              | 802.11b: 11, 5.5, 2, 1Mbps<br>802.11g: 54, 48, 36, 24, 18, 12, 9, 6Mbps<br>802.11n (20MHz): MCS0~15, Up to 144.4Mbps<br>802.11n (40MHz): MCS0~15, Up to 300Mbps  |
| <b>Standards</b>              | WLAN: IEEE 802.11 b/g, IEEE 802.11n Draft 4.0<br>LAN: IEEE 802.3, IEEE 802.3u, IEEE 802.3x, IEEE 802.1d  |
| <b>Operation Mode</b>         | Access Point, AP Client, Bridge, WDS, Repeater   |
| <b>Security</b>               | Password Protection, MAC filtering, Hidden SSID<br>Broadcasting, 64/128-bit WEP Encryption, SPI (Stateful Packet Inspection) firewall, WPS Push button and PIN code, WPA for 802.1x and WPA-PSK, WPA2 / IEEE 802.11i   |
| <b>Antenna type</b>           | 2T2R 2dBi<br>RP-SMA external antenna x2  |
| <b>Operating Environment</b>  | Temperature 0~60° C<br>Humidity 10~90%(non-condensing)   |
| <b>Power Consumption</b>      | 12VDC +/- 5%, 1A   |
| <b>Dimension</b>              | 146 x 101.5 x 33.5 mm  |
| <b>Software Feature</b>       | WLAN: b/g protection, Block WLAN Relay, Tx Burst, Tx Short Preamble, Packet Aggregation, HT Operation mode, HT Guard Interval, MAC ACL, Site survey.<br>LAN: 802.1d Spanning Tree, DHCP server, DNS relay.<br>Management: NTP Client, System log, Upload config file, Firmware upgrade, password management. |
| <b>Certification</b>          | CE, FCC, NCC, TELEC, BSMI, VCCI, Anatel, Wi-Fi compliant   |