PLANET
Networking & Communication

AP Management User's Manual

300Mbps 802.11n Wireless In-wall PoE Access Point

► **WNAP-W2201A**

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Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

FCC Caution

To assure continued compliance, use only shielded interface cables when connecting to computer or peripheral devices. Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference

(2) This device must accept any interference received, including interference that may cause undesired operation.

Federal Communication Commission (FCC) Radiation Exposure Statement

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

R&TTE Compliance Statement

This equipment complies with all the requirements of DIRECTIVE 1999/5/CE OF THE EUROPEAN PARLIAMENT AND THE COUNCIL OF 9 March 1999 on radio equipment and telecommunication terminal Equipment and the mutual recognition of their conformity (R&TTE). The R&TTE Directive repeals and replaces in the directive 98/13/EEC (Telecommunications Terminal Equipment and Satellite Earth Station Equipment) as of April 8, 2000.

Safety

This equipment is designed with the utmost care for the safety of those who install and use it. However, special attention must be paid to the dangers of electric shock and static electricity when working with electrical equipment. All guidelines of this and of the computer manufacture must therefore be allowed at all times to ensure the safe use of the equipment.

National Restrictions

This device is intended for home and office use in all EU countries (and other countries following the EU directive 1999/5/EC) without any limitation except for the countries mentioned below:

Country	Restriction	Reasons/remarks
Bulgaria	None	General authorization required for outdoor use and public service
France	Outdoor use; limited to 10 mW e.i.r.p. within the band 2454-2483.5 MHz	Military Radiolocation use. Refarming of the 2.4 GHz band has been ongoing in recent years to allow current relaxed regulation. Full implementation planned 2012
Italy	None	If used outside of own premises, general authorization is required
Luxembourg	None	General authorization required for network and service supply (not for spectrum)
Norway	Implemented	This subsection does not apply for the geographical area within a radius of 20 km from the centre of Ny-Ålesund
Russian Federation	None	Only for indoor applications

Note: Please don't use the product outdoors in France.

WEEE regulation

To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste and have to collect such WEEE separately.

Revision

User Manual of PLANET 300Mbps 802.11n Wireless In-wall PoE Access Point

Model: WNAP-W2201A

Rev: 1.0 (February, 2016)

Part No. EM-WNAP-W2201A_v1.0

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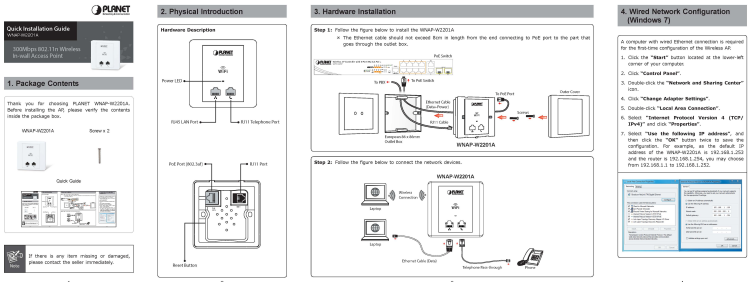
Chapter 1. Product Introduction

1.1 Package Contents

Thank you for choosing PLANET WNAP-W2201A. Before installing the AP, please verify the contents inside the package box.

WNAP-W2201A	Screw x 2

Quick Guide



Note

If there is any item missing or damaged, please contact the seller immediately.

1.2 Product Description

All-in-One Manageable Wi-Fi Solution for Hospitality Industry

PLANET WNAP-W2201A enables hospitality industry to build a high-speed wireless network with a maximum data rate of 11n 300Mbps via **PLANET AP controller**. Furthermore, it conforms to **standard 86-type** electrical junction box and **IEEE 802.3af PoE**, suitable for in-wall installation. The WNAP-W2201A has also a built-in **RJ11** port for phone pass-through and **100BASE-TX RJ45** port for Ethernet connection to such device as IPTV or laptop, enabling to integrate a hotel network with its all-in-one interface. This definitely helps guests gain good user experience.

Ease of Deployment with PLANET AP Controller

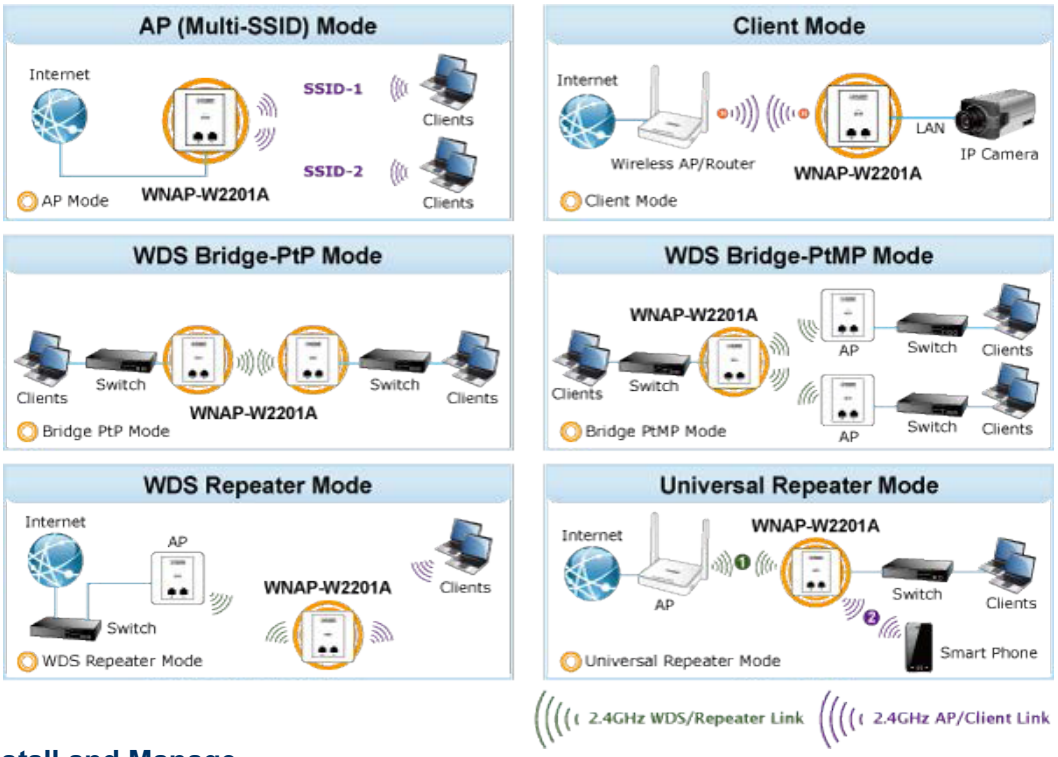
To expand the capability of in-wall AP, PLANET WNAP-W2201A comes with centralized management, enabling the hospitality industry to deploy multiple APs with a single interface of **AP controller** and reducing repetitive tasks including **AP provisioning**, **AP status monitoring** and **AP maintenance**. In addition, by connecting with PLANET WAPC AP controller series, the WNAP-W2201A comes with **PoE alive check** and **PoE schedule** features, which help hoteliers optimize their wireless network within minutes.

Suitable for Any Room Installation without Breaking Interior Design

Featuring attractive in-wall design, the WNAP-W2201A can be firmly installed into the wall via the standard **86 x 86 mm** or **75 x 75 mm** European outlet box, which makes electrical wiring invisible and convenient for room installation without affecting the original interior design. It is ideal for hotels, residences, hospitals and more to establish wireless network.

Comprehensive Wireless Operation Mode

The WNAP-W2201A supports multiple wireless communication connectivities such as **AP (Multi-SSIDs)**, **Client**, **Repeater/Universal Repeater**, **WDS Point-to-Point (PtP)** and **WDS Point-to-Multipoint (PtMP)**, allowing users to comprehensively experience various applications.

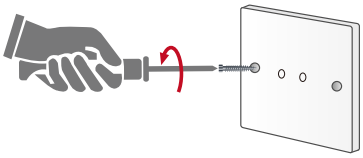


Easy to Install and Manage

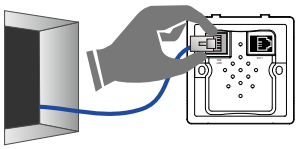
Integrated with RJ11 phone pass-through, RJ45 Ethernet connection and IEEE 802.3af PoE PD scheme, the WNAP-W2201A is easy to be installed to any room's existing 86-type or 75-type junction box with only 6 steps. The setup wizard and on-line help can simplify the configuration even for a user who has never experienced in setting up a wireless network. In aspect of centralized management, besides the **SNMP**, multiple devices can be configured and monitored by PLANET AP controller. The WNAP-W2201A helps the system administrator overcome the difficulties of wireless deployment.

Easy 6-Step Installation

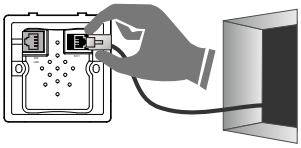
1 Dismantle the existing panel in the wall



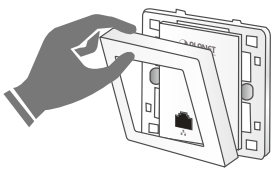
2 Connect network cable to the PoE Port



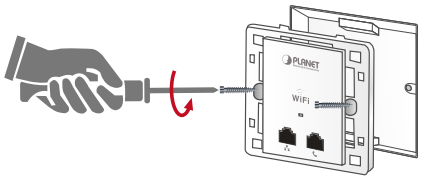
3 Connect Phone wire to the RJ11 Port



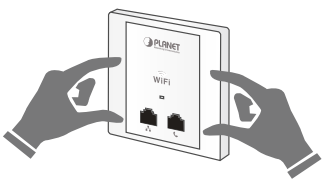
4 Open the front panel



5 Screw the AP on the wall



6 Place the front panel over AP to tightly close, and turn it on



1.3 Product Features

- **Standard Compliant Hardware Interface**
  - Compliant with IEEE 802.11n wireless technology with data rate of up to 300Mbps
  - One 10/100BASE-TX port and one PoE powered device (PD) port
  - One RJ11 port for phone line connection
  - European 86-type and 75-type wall outlet compatibility

- **Secure Network Connection**
  - Advanced security: 64-/128-bit WEP, WPA/WPA2 and WPA-PSK/WPA2-PSK (TKIP/AES encryption), 802.1x
  - Supports wireless MAC address filtering control to limit the connected wireless clients

- **Comprehensive Wireless Advanced Features**
  - Multiple operation modes including AP (Multi-SSIDs), Client, Repeater/Universal Repeater, WDS Point-to-Point (PtP) and WDS Point-to-Multipoint (PtMP)
  - Up to 5 multiple-SSIDs to allow users to access different networks through a single AP
  - Supports WMM (Wi-Fi Multimedia) and wireless QoS to enhance the efficiency of multimedia application
  - Supports IAPP (Inter Access Point Protocol) wireless roaming to enable clients to roam across multiple APs
  - Provides 5-level Transmit Power Control to adapt various environments
  - Wireless schedule allows administrators to enforce time-based internet access
  - Self-healing (Schedule Reboot) mechanism for reliable connection

- **Easy Deployment & Centralized Management**
  - Supports AP controller to enable administrator to configure and monitor multiple APs simultaneously
  - Flexible deployment with standard 802.3af PoE/PD supported
  - Stylish in-wall design perfectly matches the room decoration
  - Step-by-step configuration with intelligent setup wizard and graphical Web-based UI
  - Supports SNMP-based management interface
  - System status monitoring including associated client list and system log

1.4 Product Specifications

Product	**WNAP-W2201A** 300Mbps 802.11n Wireless In-wall PoE Access Point	
Hardware Specifications		
Interface	PoE Port	1 x 10/100Mbps auto MDI/MDI-X RJ45 port (rear panel) ※ IEEE 802.3af PoE PD Port
	LAN Port	1 x 10/100Mbps auto MDI/MDI-X RJ45 port
	RJ11 Port	Connect to the telephone through the 4-conductor phone line
PoE	802.3af PoE PD, Class 3	
Antenna	Built-in 3dBi antenna x 2	
Reset Button	Reset button on side panel (Press over 5 seconds to reset the device to factory default)	
LED Indicators	PWR/SYS LED	
Material	Plastic	
Dimensions (W x D x H)	86 x 35 x 86 mm	
Weight	76g	
Power Requirements	802.3af/at PoE, 48-56V DC input, 0.35A (max.)	
Power Consumption	< 10W	
Wireless interface Specifications		
Standard	Compliant with IEEE 802.11b/g/n	
Frequency Band	Europe -- ETSI: 2.412~2.472GHz	
Operating Channel	Europe -- ETSI: 1~13	
Channel Width	20 or 20/40MHz	
Data Transmission Rates	802.11n (HT40): 270/243/216/162/108/81/54/27Mbps 135/121.5/108/81/54/40.5/27/13.5Mbps (dynamic) 802.11n (HT20): 130/117/104/78/52/39/26/13Mbps 65/58.5/52/39/26/19.5/13/6.5Mbps (dynamic) 802.11g: 54/48/36/24/18/12/9/6Mbps (dynamic) 802.11b: 11/5.5/2/1Mbps (dynamic)	
Transmission Distance	802.11n: up to 70m 802.11g: up to 30m The estimated transmission distance is based on the theory. The actual distance will vary in different environments.	
Max. RF Power	802.11n: 17 ± 2dBm 802.11g: 17 ± 2dBm 802.11b: 18 ± 2dBm	
Receiver Sensitivity	IEEE 802.11b: -92dBm @ 1Mbps; -85dBm @ 11Mbps, PER < 8% IEEE 802.11g: -88dBm @ 6Mbps; -73dBm @ 54Mbps, PER <10% IEEE 802.11n: -90dBm @ MCS8; -70dBm @ MCS15, PER <10%	
Data Rate	IEEE 802.11b: 1/2/5.5/11Mbps IEEE 802.11g: 6/9/12/18/24/36/48/54Mbps IEEE 802.11n: 300 Mbps in 40MHz mode/150Mbps in 20MHz mode	
TX Power	Provides 5-level Tx Power Control (100%, 70%, 50%, 35%, 15%)	

Wireless Management Features	
Operation Mode	■ Standalone AP ■ Managed AP
Wireless Mode	■ AP (Multiple-SSIDs) ■ Client ■ Repeater (WDS+AP) ■ Universal Repeater (AP+Client) ■ WDS PtP Bridge ■ WDS PtMP Bridge
Encryption Security	■ WEP (64-/128-bit) encryption security ■ WPA/WPA2 (TKIP/AES) ■ WPA-PSK/WPA2-PSK (TKIP/AES) ■ 802.1x RADIUS Authentication
Wireless Security	Wireless MAC address filtering (up to 20 entries)
	Supports WPS (Wi-Fi Protected Setup)
	SSID broadcast and hide
Wireless Advanced	Supports WMM (Wi-Fi Multimedia) for better data transmission of video or on-line demand
	Supports wireless schedule
	Multiple SSIDs: up to 5
	Wireless Isolation: Enables it to isolate each connected wireless client of a BSSID from communicating with each other
	IAPP (Inter Access Point Protocol): 802.11f wireless roaming
	Provides wireless statistics, max. associated station number
Max. Supported Clients	Wired: 253 2.4GHz Wireless: 32
LAN	Built-in DHCP server supporting static IP address distribution
	Supports static IP and dynamic IP
	Supports UPnP
	Supports 802.1d Spanning Tree
System Management	Web-based (HTTP) management interface
	Supports SNTP synchronization
	Easy firmware upgrade via HTTP/TFTP (through AP controller)
	Easily locate deployed APs through the LED control
	Supports SNMP management, LED On/Off control, Schedule Reboot
	Supports Smart Discovery Utility, System Log
	Supports WAPC series of AP controllers for central management
Max. WDS Peers	8
IEEE Standards	IEEE 802.11n (2T2R, up to 300Mbps) IEEE 802.11g IEEE 802.11b IEEE 802.11i IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3x flow control
Other Protocols and	CSMA/CA, CSMA/CD, TCP/IP, DHCP, ICMP, SNTP

Standards	
Environment & Certification	
Temperature	Operating: -10 ~ 50 degrees C Storage: -40 ~ 70 degrees C
Humidity	Operating: 10 ~ 90% (non-condensing) Storage: 5 ~ 90% (non-condensing)
Regulatory	CE, RoHS

Chapter 2. Hardware Introduction

2.1 Product Outlook

- **Dimensions**: 86 x 35 x 86 mm

2.1.1 Panel Layout

The front and rear panels provide a simple interface monitoring the AP.

- **Front Panel**

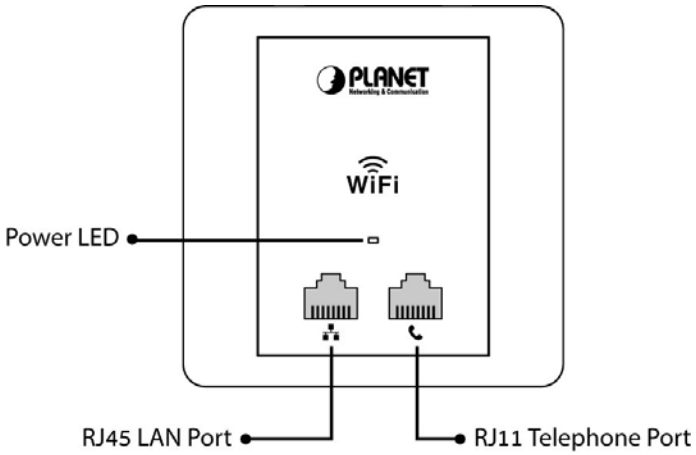


Figure 2-1 WNAP-W2201A Front Panel

- **Rear Panel**

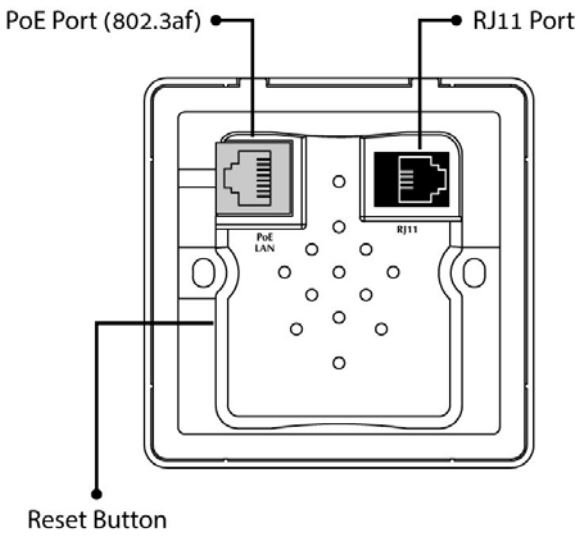


Figure 2-2 WNAP-W2201A Rear Panel

2.1.2 Hardware Description

LED Definition

LED	COLOR	STATUS	FUNCTION
PWR	Green	On	Device power on
	Green	Flash	Detect and identify the LED (controlled by S/W)
	Green	Off	Device power off (controlled by S/W)

Button definition

Object	Description
Reset	Press the Reset button for over 5 seconds and then release it to restore system to the factory default settings.

H/W Interface definition

Object	Description
PoE Port (802.3af/at PoE)	10/100bps RJ45 port, auto MDI/ MDI-X Connect PoE port to the IEEE 802.3af/at PoE switch to power on the device.
LAN Port	10/100Mbps RJ45 port, auto MDI/ MDI-X Connect this port to the network equipment.
RJ11 Port	Connect to the telephone through the 4-conductor RJ11 phone line

Chapter 3. Hardware Installation

3.1 Installing the AP

Before installing the AP, make sure your PoE switch is connected to the Internet through the broadband service successfully at this moment. If there is any problem, please contact your local ISP. After that, please install the AP according to the following steps. Don't forget to pull out the power plug and keep your hands dry.

3.1.1 Installing the AP – WNAP-W2201A

Step 1. Follow the figure below to install WNAP-W2201A.

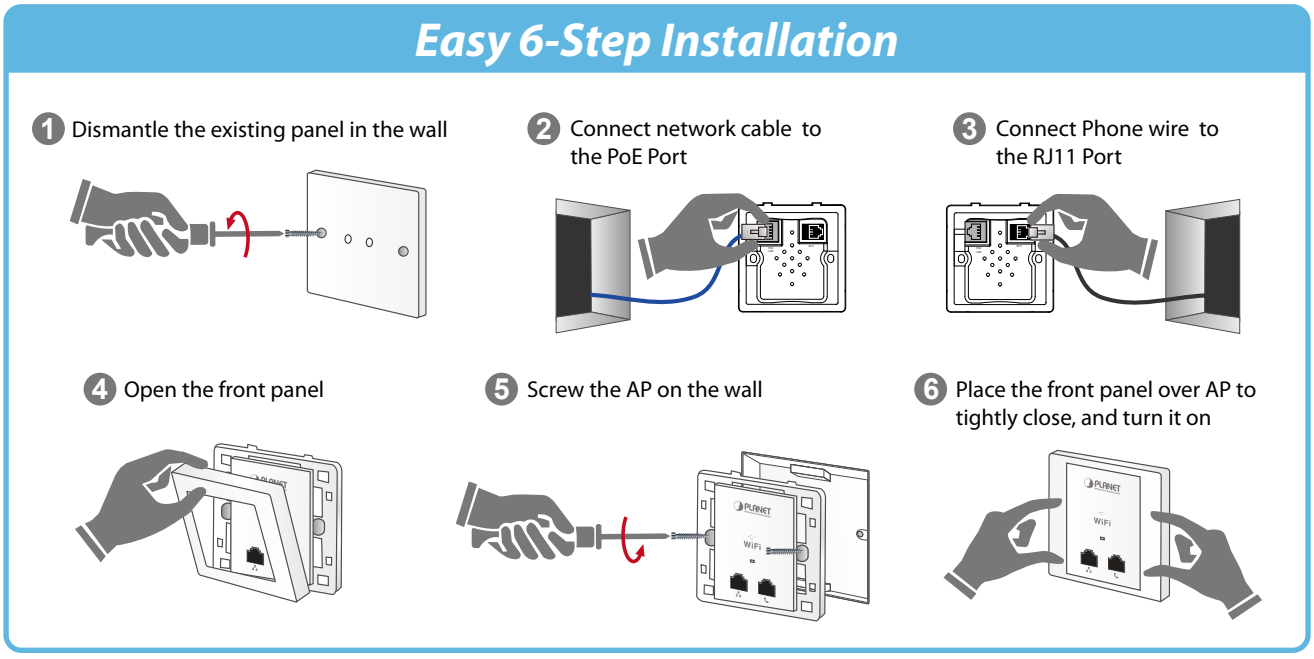
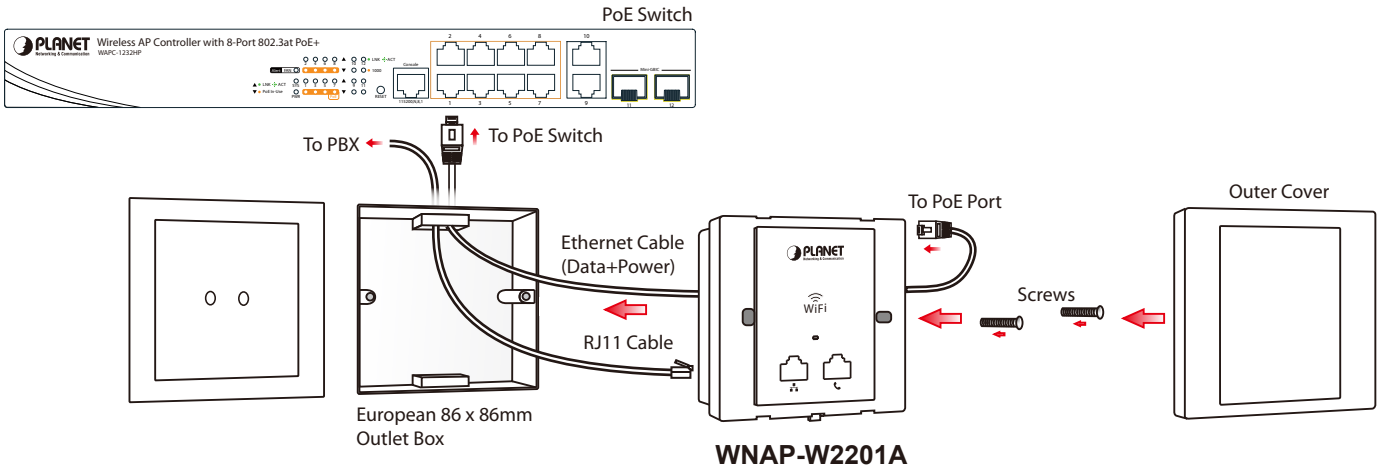


Figure 3-1 WNAP-W2200 Installation Diagram 1

※ The Ethernet cable should not exceed 8cm in length from the end connecting to PoE port to the part that goes through the outlet box.



Step 2. Follow the figure below to connect the network devices.

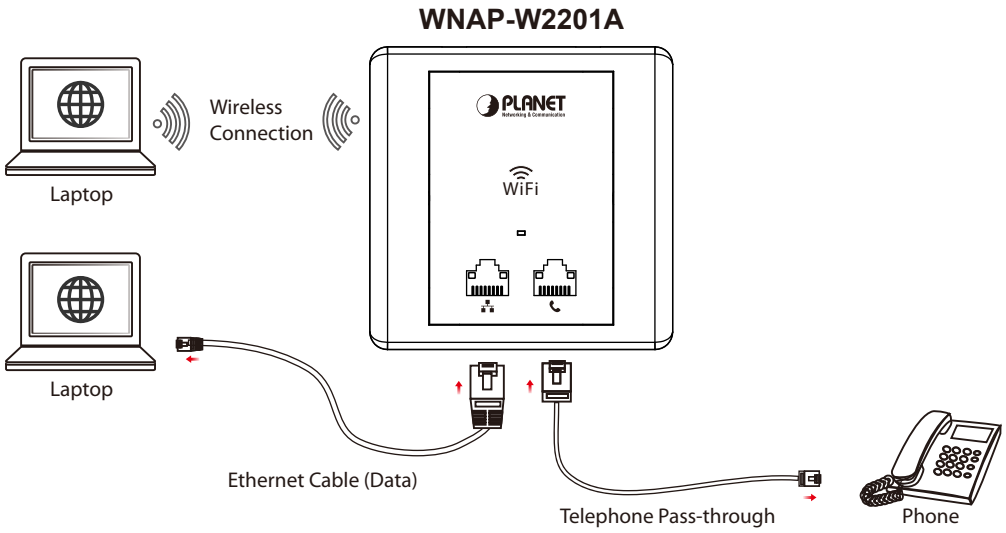


Figure 3-3 WNAP-W2201A Installation Diagram 3

Chapter 4. Connect to the AP

This chapter will show you how to configure the basic functions of your AP within minutes.

Note

A computer with wired Ethernet connection to the Wireless AP is required for the first-time configuration.

4.1 System Requirements

- Broadband Internet Access Service (Cable/xDSL/Ethernet connection)
- One IEEE 802.3af/at PoE switch (supply power to the WNAP-W2201A)
- PCs with a working Ethernet adapter and an Ethernet cable with RJ45 connectors
- PCs running Windows XP, Windows Vista, Win 7, Win8, Win10, MAC OS 9 or later, Linux, UNIX or other platforms compatible with **TCP/IP** protocols

Note

1. The AP in the following instructions refers to PLANET WNAP-W2201A.
2. It is recommended to use Internet Explore 8.0 or above to access the AP.

4.2 Manual Network Setup -- TCP/IP Configuration

The default IP address of the WNAP-W2201A is **192.168.1.253**. And the default Subnet Mask is 255.255.255.0. These values can be changed as you want. In this guide, we use all the default values for description.

Connect the WNAP-W2201A with your PC by an Ethernet cable plugging in LAN port on one side and in LAN port of PC on the other side. Please power on the WNAP-W2201A by PoE switch through the PoE port.

In the following sections, we'll introduce how to install and configure the TCP/IP correctly in **Windows 7**. And the procedures in other operating systems are similar. First, make sure your Ethernet Adapter is working, and refer to the Ethernet adapter manual if needed.

4.2.1 Configuring the IP Address Manually

Summary:

- Set up the TCP/IP Protocol for your PC.
- Configure the network parameters. The IP address is 192.168.1.xxx (If the default IP address of the WNAP-W2201A is 192.168.1.253, and the DSL router is 192.168.1.254, the "xxx" can be configured to any number from 1 to 252.) and subnet mask is 255.255.255.0.

1 Select **Use the following IP address**, and then configure the IP address of the PC.

2 For example, as the default IP address of the WNAP-W2201A is 192.168.1.253 and the DSL router is 192.168.1.254, you may choose from 192.168.1.1 to 192.168.1.252.

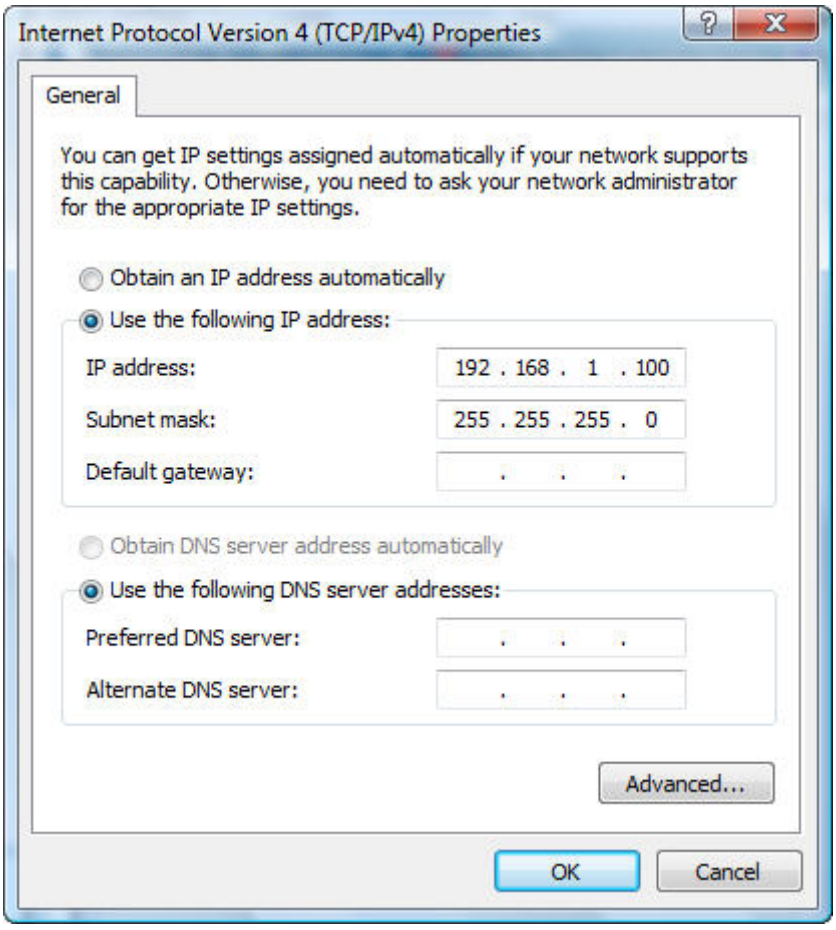


Figure 4-1 TCP/IP Setting

Now click **OK** to save your settings.

Now, you can run the ping command in the **command prompt** to verify the network connection between your PC and the AP. The following example is in **Windows 7** OS. Please follow the steps below:

1. Click on **Start > Run**.

2. Type "**cmd**" in the Search box.

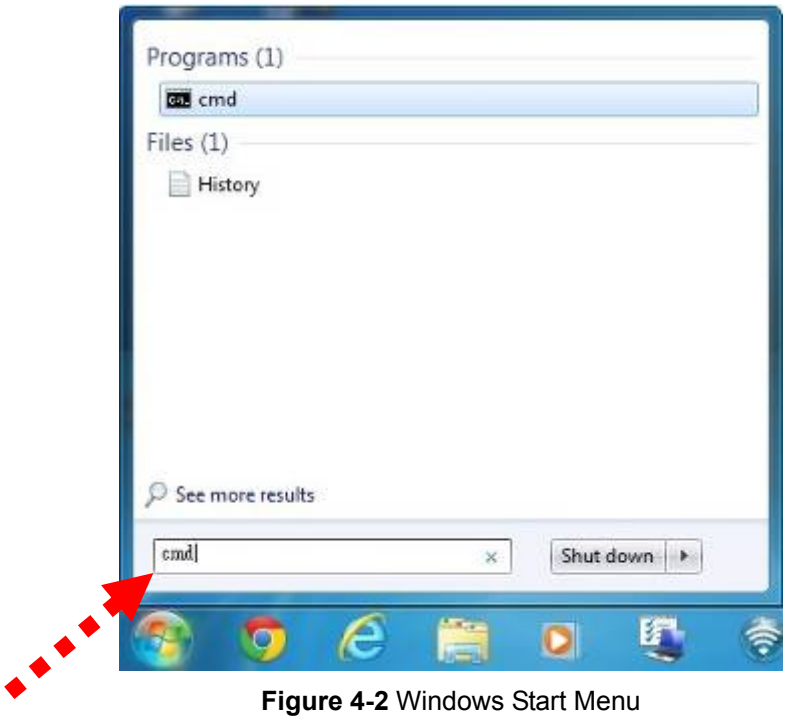


Figure 4-2 Windows Start Menu

3. Open a command prompt, type ping **192.168.1.253** and then press **Enter**.

- If the result displayed is similar to **Figure 4-3**, it means the connection between your PC and the AP has been established well.

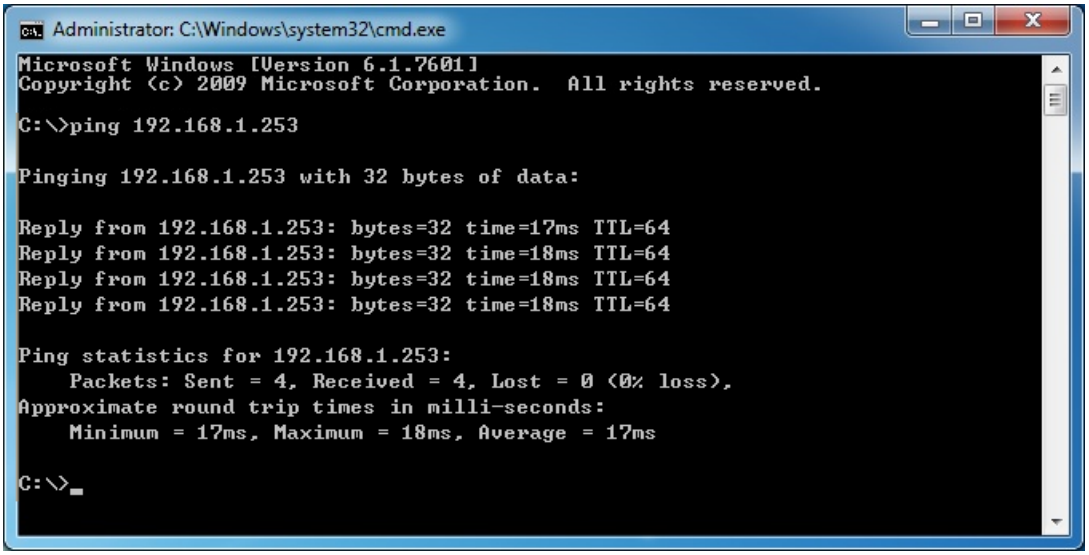


Figure 4-3 Successful Result of Ping Command

- If the result displayed is similar to **Figure 4-4**, it means the connection between your PC and the AP has failed.

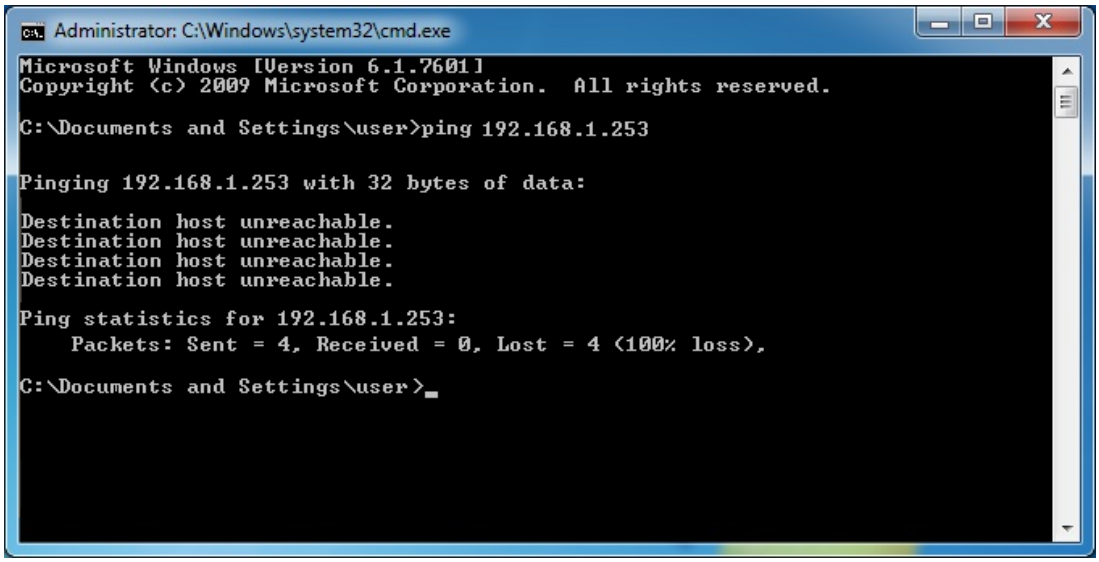


Figure 4-4 Failed Result of Ping Command

If the address is 0.0.0.0, check your adapter installation, security settings, and the settings on your AP. Some firewall software programs may block a DHCP request on newly installed adapters.

4.3 Starting Setup in the Web UI

It is easy to configure and manage the AP with the web browser.

Step 1. To access the configuration utility, open a web-browser and enter the default IP address http://192.168.1.253 in the web address field of the browser.

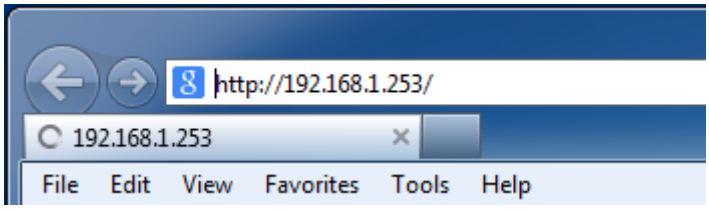


Figure 4-5 Login by Default IP Address

After a moment, a login window will appear. Enter **admin** for the User Name and Password, both in lower case letters. Then click **OK** or press the **Enter** key.

Figure 4-6 Login Window

Default IP Address: **192.168.1.253**

Default User Name: **admin**

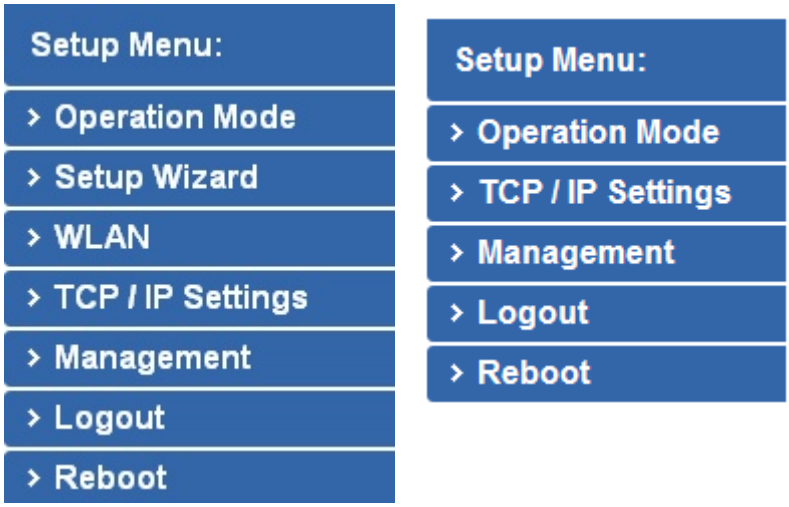
Default Password: **admin**

Note

If the above screen does not pop up, it may mean that your web browser has been set to a proxy. Go to Tools menu> Internet Options> Connections> LAN Settings on the screen that appears, uncheck **Using Proxy** and click **OK** to finish it.

Chapter 5. Configuring the AP

This chapter delivers a detailed presentation of AP's functionalities and features the main items below, allowing you to manage the AP with ease.



Standalone AP Mode **Managed AP Mode**

Figure 5-1 Main Menu

During operation, if you are not clear about a certain feature, you can refer to the "**Help**" section at the right side of the screen to read all the related helpful information.

5.1 Operation Mode

The Operation Mode section guides you to configuring the WNAP-W2201A to **Standalone AP** or **Managed AP**. When switching the operation mode to **Managed AP**, the administrator will be able to manage the AP by PLANET Wireless AP Controller. To configure the managed AP by PLANET Wireless AP Controller, please refer to the WAPC-1232HP/WAPC-2864HP AP Management user's manual.

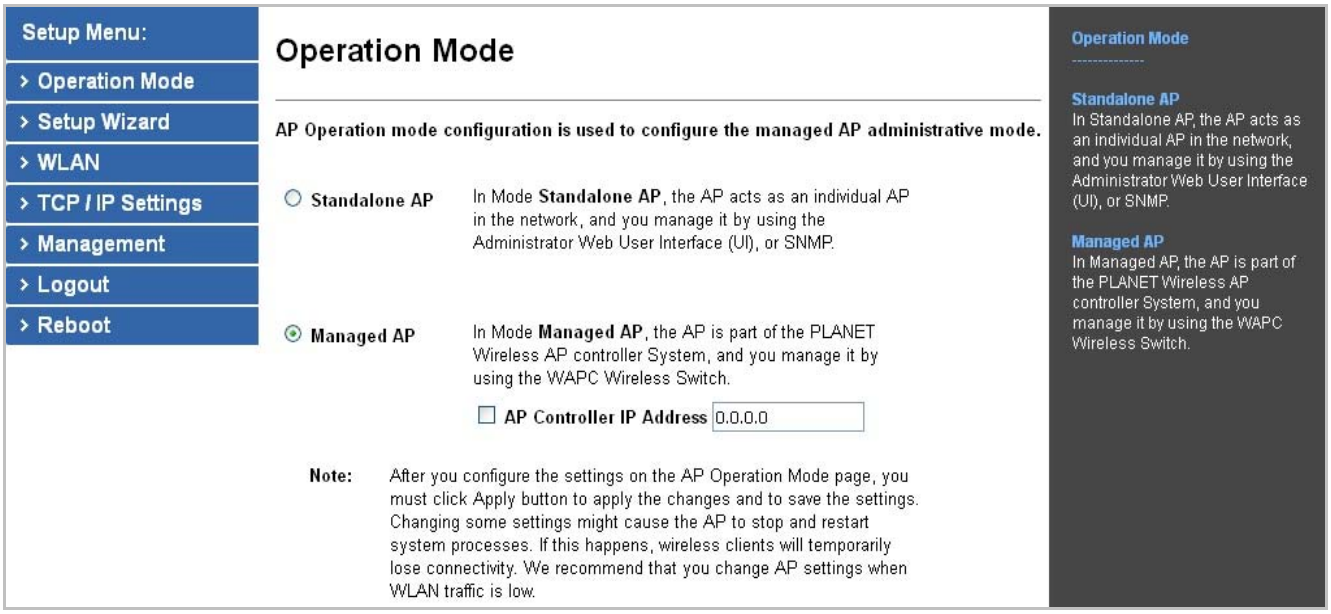


Figure 5-2 Operation Mode

The page includes the following fields:

Object	Description
Standalone AP	In Standalone AP, the AP acts as an individual AP in the network, and you manage it by using the Administrator Web User Interface (UI), or SNMP.
Managed AP	In Managed AP, the AP is part of the PLANET Wireless AP controller System, and you manage it by using the WAPC Wireless AP controller.
AP Controller IP Address	Check this option and enter the IP address of the AP controller that user specifies. The default “0.0.0.0” means any AP controller existed in the local network can control this AP.
Apply Change	Click “**Apply Change**” to save and apply the settings.
Reset	Click “**Reset**” to erase all settings.

After you configure the settings on the AP Operation Mode page, you must click **Apply** to apply the changes and to save the settings. Changing some settings might cause the AP to stop and restart system processes. If this happens, wireless clients will temporarily lose connectivity. We recommend that you change AP settings when WLAN traffic is low.

Please back up the configuration settings before switching from the Standalone AP mode to the Managed AP mode.

All the configurations will be erased and at the same time, the system will return to the factory default settings once it is reverted to the Standalone AP mode.

5.2 Setup Wizard

The Setup Wizard will guide the user to configuring the WNAP-W2201A easily and quickly. Select **Setup Wizard** on the left side of the screen and by clicking on Next on the Setup Wizard screen shown below, you will then name your WNAP-W2201A and set up its security.

Figure 5-3 Setup Wizard

Step 1. LAN Interface Setup

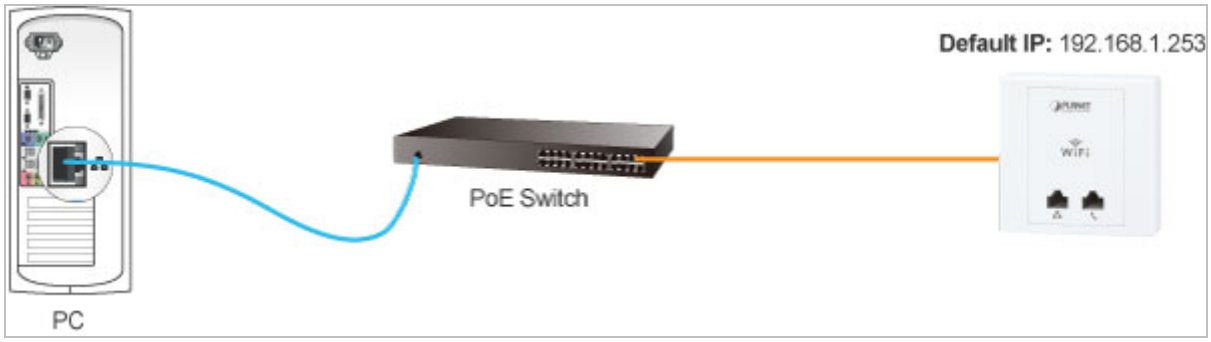


Figure 5-4 LAN Interface Setup Topology

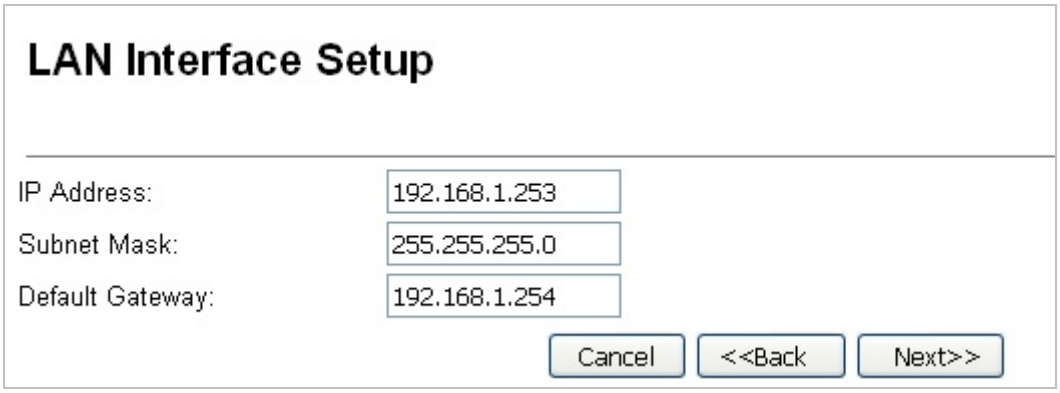


Figure 5-5 Wizard – LAN Interface Setup

The page includes the following fields:

Object	Description
IP Address	Displays the current IP address of the AP. (Default = **192.168.1.253**)
Subnet Mask	Displays LAN mask of the AP. (Default = **255.255.255.0**)
Default Gateway	IP address of the associated router. (Default = **192.168.1.254**)

Step 2. Time Zone Setting

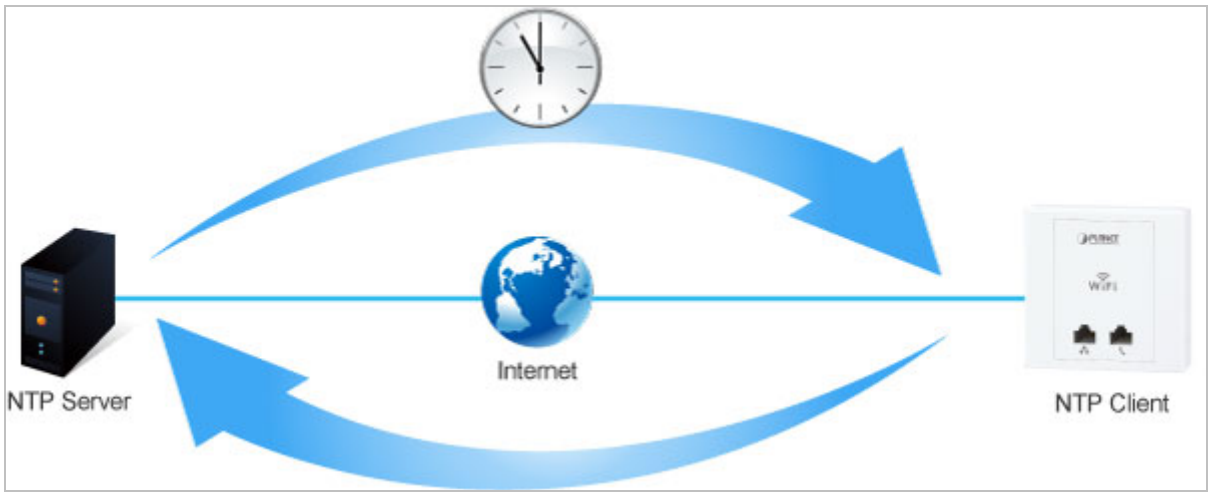


Figure 5-6 Time Zone Setup Topology

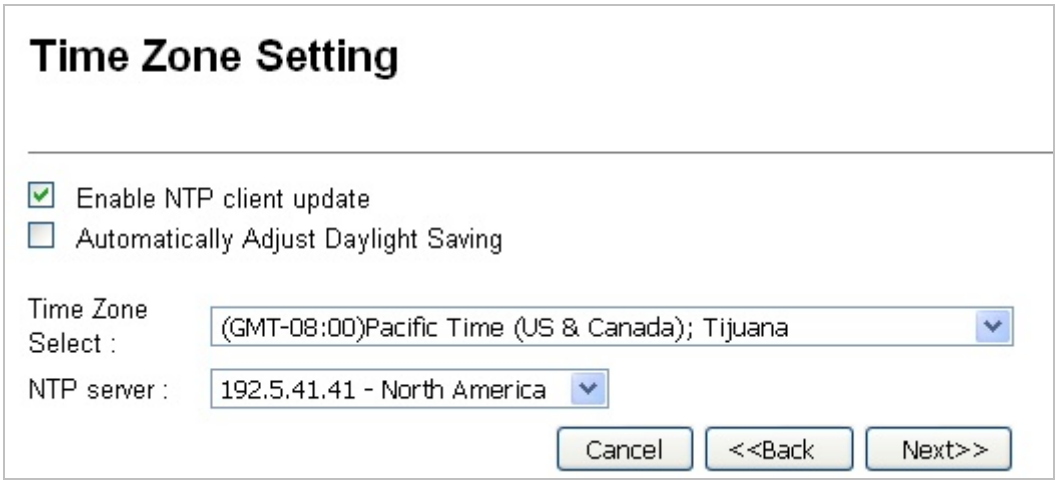


Figure 5-7 Wizard – Time Zone Setup

The page includes the following fields:

Object	Description
Enable NTP Client Update	Check this box to connect NTP Server and synchronize internet time.
Automatically Adjust Daylight Saving	Check this box and system will adjust the daylight saving automatically.

Time Zone Select	Select the Time Zone from the drop-down menu.
NTP Server	Select the NTP Server from the drop-down menu.
Enable NTP Client Update	Check this box to connect NTP Server and synchronize internet time.

Step 3. Wireless Basic Settings

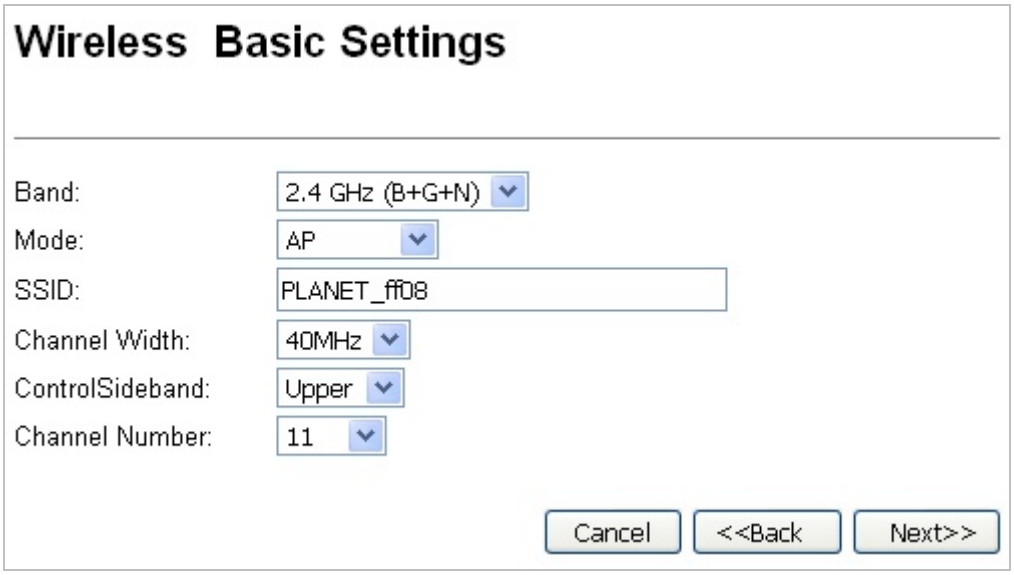


Figure 5-8 Wizard – Wireless Basic Settings

The page includes the following fields:

Object	Description
Band	Supports 802.11b, 802.11g, 802.11n and mixed mode. Please choose its band according to your clients.
Mode	Supports AP, Client, WDS and AP+WDS mode.
SSID	Service Set Identifier identifies your wireless network.
Channel Width	Select 40MHz if you use 802.11n, otherwise, 20MHz is for the 802.11b/g mode.
Control Sideband	It is only valid when you choose a 40MHz channel width.
Channel Number	Indicates the channel setting for the AP.

Step 4. Wireless Security Settings

Secure your wireless network by turning on the WPA or WEP security feature on the router. For this section, you can set **WEP** and **WPA-PSK** security mode.

Figure 5-9 Wizard – Wireless Security Setup

■ Encryption: WEP

The following picture shows how to set the WEP security.

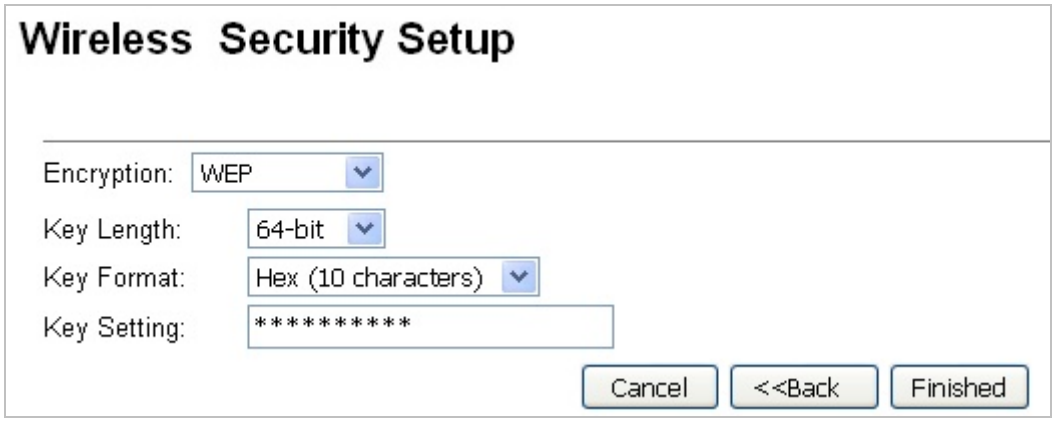


Figure 5-10 Wireless Security Setup – WEP Setting

The page includes the following fields:

Object	Description
Key Length	WEP supports 64-bit or 128-bit security key.
Key Format	User can enter key in ASCII or Hex format.
Key Setting	Enter the key whose format is limited by the key format, ASCII or Hex.

■ Encryption: WPA-PSK

The following picture shows how to set **WPA-PSK** security. You can select **WPA (TKIP)**, **WPA2 (AES)** and **Mixed mode**.

Figure 5-11 Wireless Security Setup – WPA Setting

The page includes the following fields:

Object	Description
Pre-shared Key Format	Specify the format of the key, pass phrase or hex.
Pre-shared Key	Enter the key whose format is limited by the key format.

Click **Finished** making your wireless configuration effective and finishing the **Setup Wizard**.

After rebooting, please check whether you can access the Internet or not on the "**Status**" page.

5.3 TCP/IP Settings

This page is used to configure the parameters for local area network which connects to the LAN port of your AP. Here you may change the setting for IP address, subnet mask, DHCP, etc.

5.3.1 LAN Settings

On the LAN Settings page, you can configure the IP parameters of the LAN on the screen as shown below.

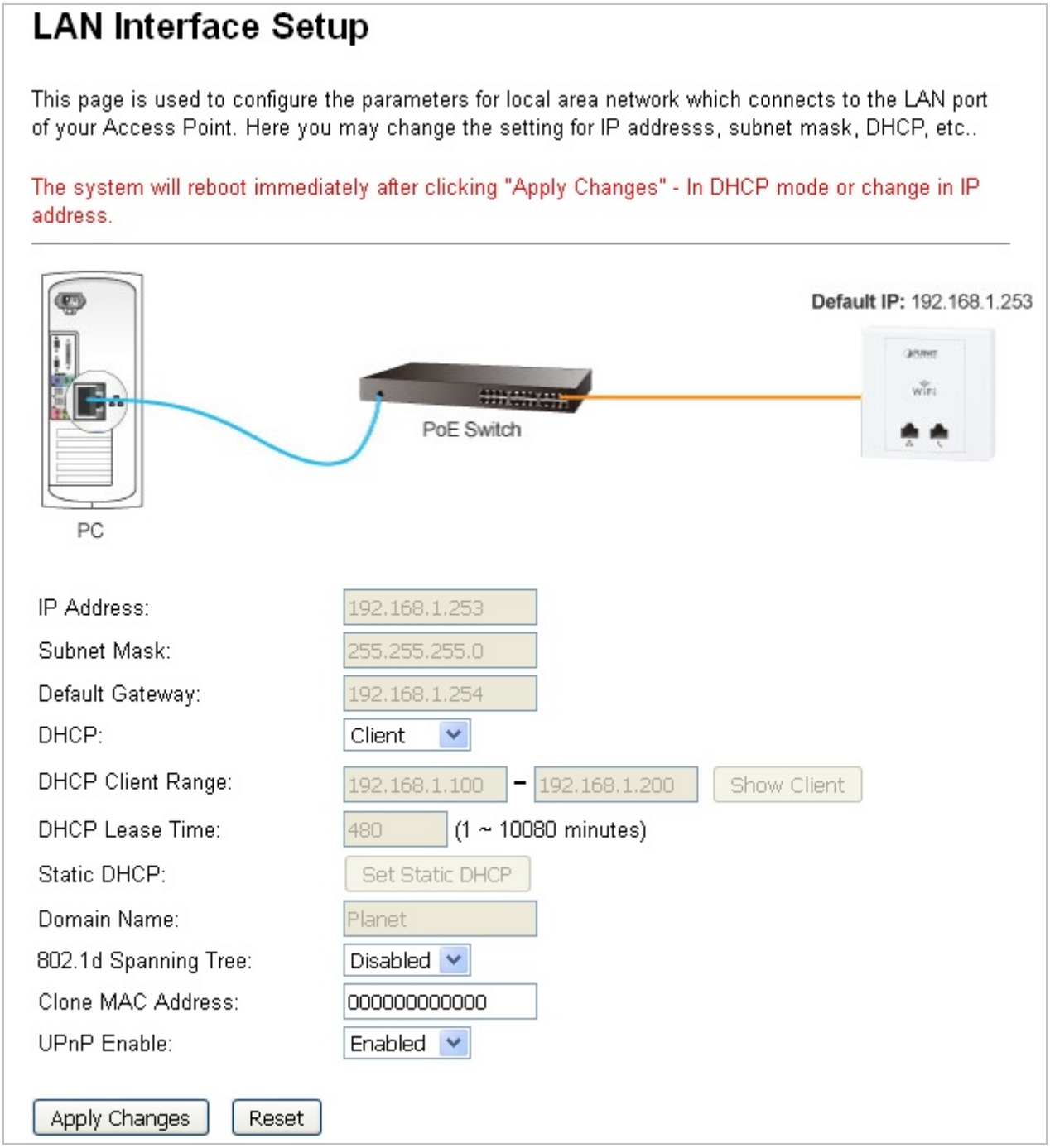


Figure 5-12 LAN Setting

The page includes the following fields:

Object	Description
IP Address	The default LAN IP address of the WNAP-W2201A is **192.168.1.253**. You can change it according to your request.
Subnet Mask	Default is **255.255.255.0**. You can change it according to your request.
Default Gateway	Default is **192.168.1.254**. You can change it according to your request.
DHCP	You can select a **Disabled**, **Client**, **and Server**. Default is **Client**, meaning the WNAP-W2201A must be connected to a router to assign IP addresses.
DHCP Client Range	For the **Server** mode, you must enter the DHCP client IP address range in the field. And you can click "**Show Client**" to show the Active DHCP Client Table.
Static DHCP	Click "**Set Static DHCP**" and you can reserve some IP addresses for those network devices with the specified MAC addresses anytime when they request IP addresses.
Domain Name	Default is **Planet**.
802.1d Spanning Tree	You can enable or disable the Spanning Tree function.
Clone MAC Address	You can input an MAC address here for using clone function.
UPnP Enable	You can enable or disable the UPnP function. The UPnP feature allows the devices, such as Internet computers, to access the local host resources or devices as needed. UPnP devices can be automatically discovered by the UPnP service application on the LAN.

If you change the IP address of LAN, you must use the new IP address to login the AP.

When the IP address of the WNAP-W2201A is changed, the clients on the network often need to wait for a while or even reboot before they can access the new IP address. For an immediate access to the AP, please flush the netbios cache on the client computer by running the "nbtstat –r" command before using the device name of the WNAP-W2201A to access its Web Management page.

5.4 WLAN

The Wireless menu contains submenus of the settings about wireless network. Please refer to the following sections for the details.

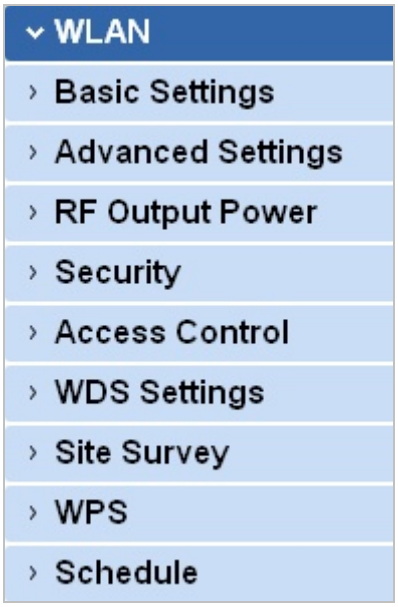


Figure 5-13 Wireless Main Menu

5.4.1 Basic Settings

Choose menu "**WLAN → Basic Settings**" to configure the basic settings for the wireless network on this page. After the configuration is done, please click "**Apply Changes**" to save the settings.

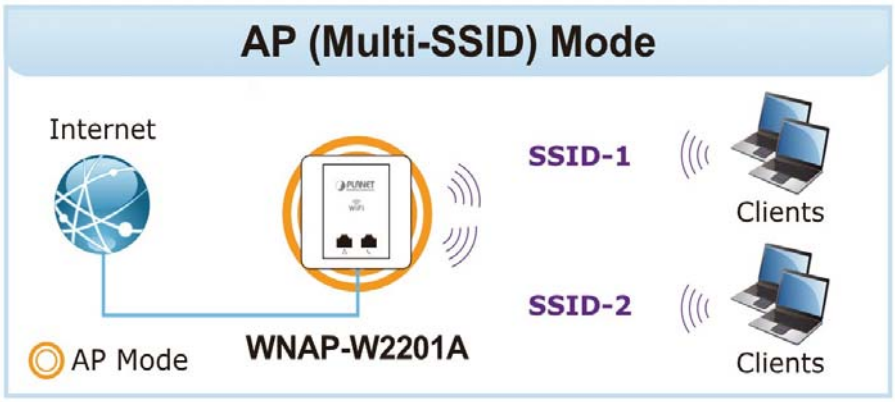
First of all, the wireless AP supports multiple wireless modes for different network applications, which include:

- **AP**
- **Multiple SSIDs**
- **Universal Repeater**
- **Client**
- **WDS**
- **Repeater**

It is so easy to combine the WNAP-W2201A with the existing wired network. The WNAP-W2201A definitely provides a total network solution for the home and the SOHO users.

- **AP**

  Standard **Access Point**



Wireless Basic Settings

This page is used to configure the parameters for wireless LAN clients which may connect to your Access Point. Here you may change wireless encryption settings as well as wireless network parameters.

Disable Wireless LAN Interface

Band: 2.4 GHz (B+G+N)

Mode: AP MultipleAP

Network Type: Infrastructure

SSID: PLANET_ff08 Add to Profile

Channel Width: 40MHz

Control Sideband: Upper

Channel Number: 11

Broadcast SSID: Enabled

WMM: Enabled

Data Rate: Auto

TX restrict: 0 Mbps (0:no restrict)

RX restrict: 0 Mbps (0:no restrict)

Associated Clients: Show Active Clients

Enable Mac Clone (Single Ethernet Client)

Enable Universal Repeater Mode (Acting as AP and client simultaneouly)

SSID of Extended Interface: Planet Rpt0 Add to Profile

Figure 5-14 Wireless Basic Settings – AP

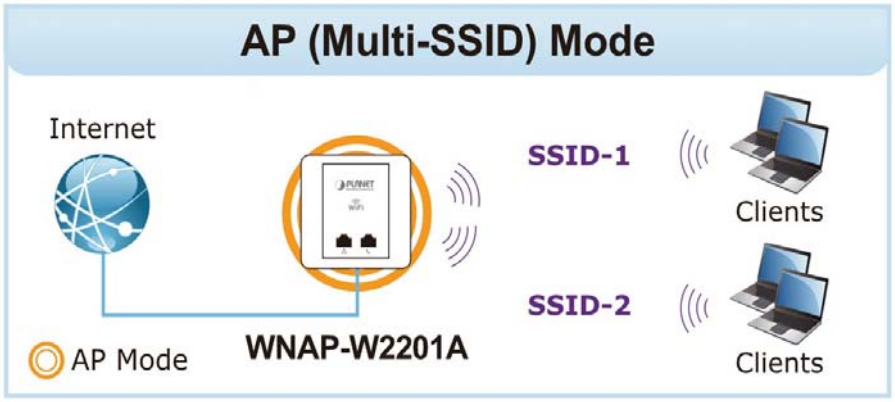
The page includes the following fields:

Object	Description
Disable Wireless LAN Interface	Check the box to disable the wireless function.
Band	Select the desired mode. Default is "**2.4GHz (B+G+N)**". It is strongly recommended that you set the Band to "2.4GHz (B+G+N)", and all of 802.11b, 802.11g, and 802.11n wireless stations can connect to the WNAP-W2201A. ■ **2.4 GHz (B)**: 802.11b mode, rate is up to 11Mbps ■ **2.4 GHz (G)**: 802.11g mode, rate is up to 54Mbps ■ **2.4 GHz (N)**: 802.11n mode, rate is up to 300Mbps(2T2R) ■ **2.4 GHz (B+G)**: 802.11b/g mode, rate is up to 11Mbps or 54Mbps ■ **2.4 GHz (G+N)**: 802.11g/n mode, rate is up to 54Mbps or 300Mbps ■ **2.4 GHz (B+G+N)**: 802.11b/g/n mode, rate is up to 11Mbps, 54Mbps, or 300Mbps
Mode	There are four kinds of wireless mode selections: ■ **AP** ■ **Client** ■ **WDS** ■ **Repeater** If you select WDS or Repeater, please click "**WDS Settings**" in the submenu for the related configuration. Furthermore, click "**Multiple AP"** to enable multiple SSID functions.
SSID	It's the ID of the wireless network. User can access the wireless network via the ID only. However, if you switch to Client Mode, this field becomes the SSID of the AP you want to connect with. Default: **PLANET_XXXX ("X" means the last 4 digits of the MAC address)**
Channel Width	You can select **20MHz**, or **40MHz**.
Channel Number	You can select the operating frequency of wireless network. Default: **11**
Broadcast SSID	If you enable "Broadcast SSID", every wireless station located within the coverage of the AP can discover its signal easily. If you are building a public wireless network, enabling this feature is recommended. In private network, disabling "Broadcast SSID" can provide better wireless network security. Default is "**Enabled**".
Data Rate	Set the wireless data transfer rate to a certain value. Since most of wireless devices will negotiate with each other and pick a proper data transfer rate automatically, **it's not necessary to change this value unless you know what will happen after modification.** Default is "**Auto"**.

Associated Clients	Click "**Show Active Clients**" to show the status table of active wireless clients.
Enable Universal Repeater Mode **(Acting as AP and client simultaneously)**	Universal Repeater is a technology used to extend wireless coverage. To enable Universal Repeater mode, check the box and enter the SSID you want to broadcast in the field below. Then please click "**Security**" in the submenu for the related settings of the AP you want to connect with.

■ Multiple-SSIDs

Enabling multiple-SSIDs can broadcast multiple WLAN SSIDs using virtual interfaces. You can have different encryption settings for each WLAN and you can restrict what they have access to.



Choose menu "**WLAN → Basic Settings → Multiple AP**" to configure the device as a general wireless access point with multiple SSIDs.

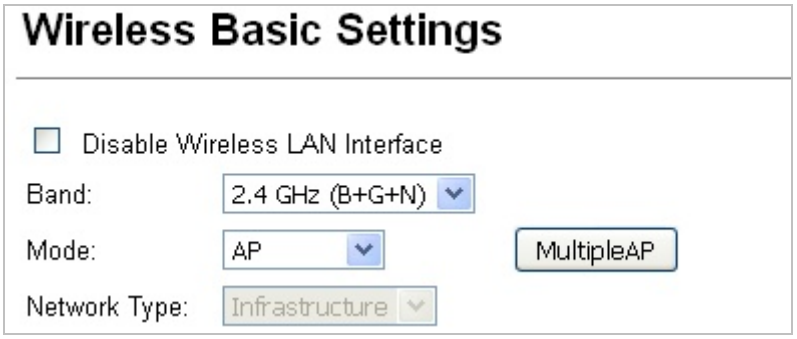


Figure 5-15 Wireless Basic Settings – Multiple APs

The device supports up to four multiple Service Set Identifiers. You can go back to the **Basic Settings** page to set the Primary SSID. The SSID's factory default setting is **PLANET_XXXX (Multiple-SSID 1~4)**. The SSID can be easily changed to connect to an existing wireless network or to establish a new wireless network. When the information for the new SSID is finished, click **Apply Changes** to let your changes take effect.

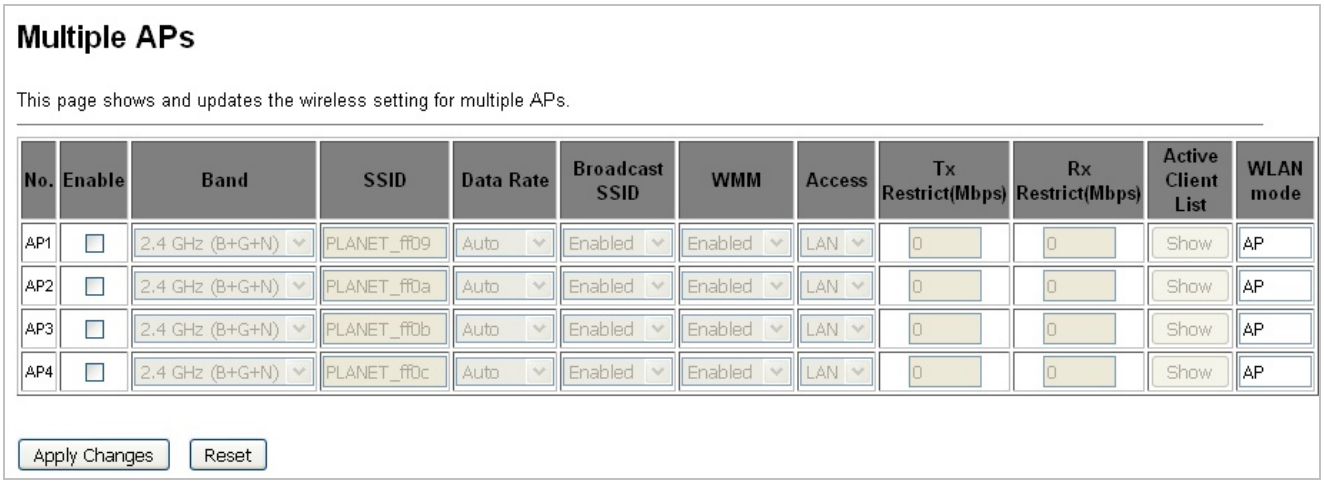
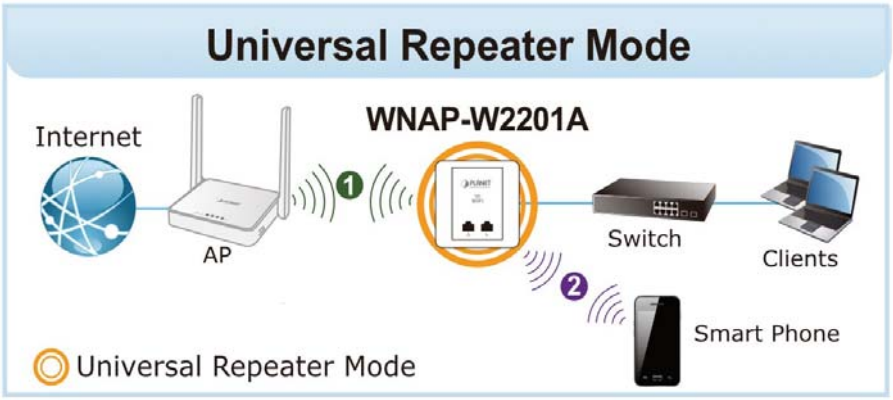


Figure 5-16 Multiple-SSIDs

Once you have applied and saved those settings, you can then go to the "**WLAN → Security**" page on the AP to set up security settings for each of the SSIDs.

■ Universal Repeater

This mode allows the AP with its own BSS to relay data to a root AP to which it is associated with WDS disabled. The wireless repeater relays signal between its stations and the root AP for greater wireless range.



➢ Example of how to configure **Universal Repeater Mode**. Please take the following steps:

To configure each wireless parameter, please go to the "**WLAN → Basic Settings**" page.

Step 1. Configure wireless mode to "**AP**" and then check "**Enable Universal Repeater Mode (Acting as AP and client simultaneously)**". Click "**Apply Changes**" to take effect.

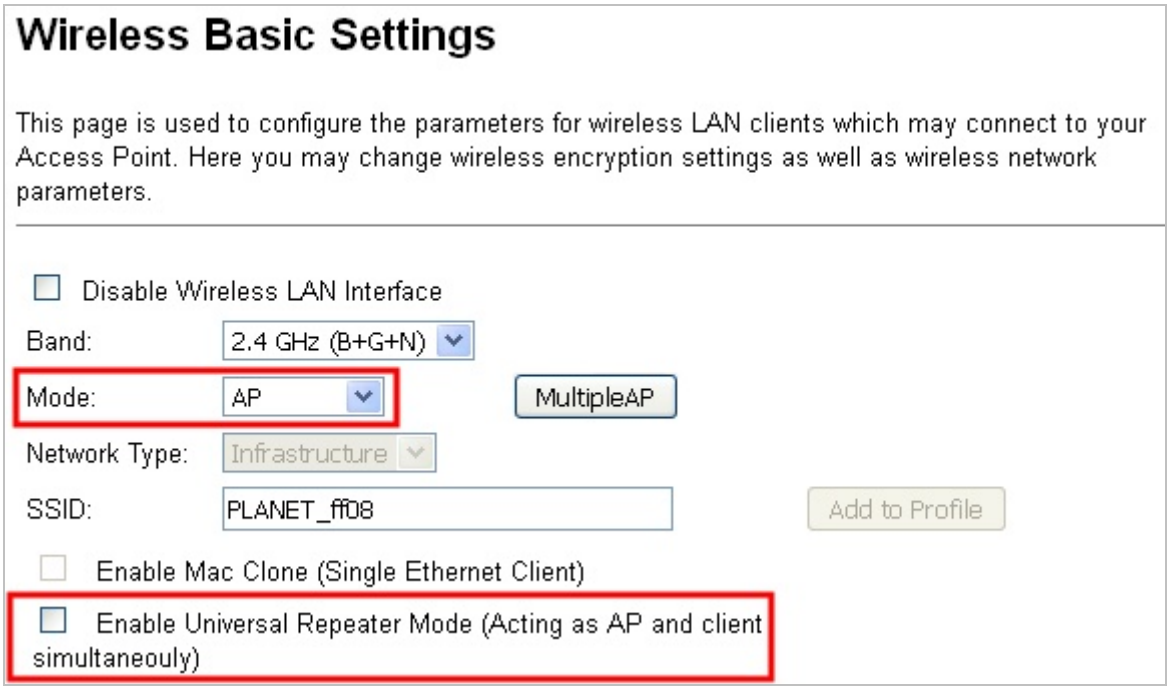


Figure 5-17 Universal Repeater-1

Step 2. Go to **Site Survey** page to find the root AP. Select the root AP that you want to repeat the signal, and then click "**Next**".

Figure 5-18 Universal Repeater-2

Step 3. Select the correct encryption method and enter the security key. Then click "**Connect**".

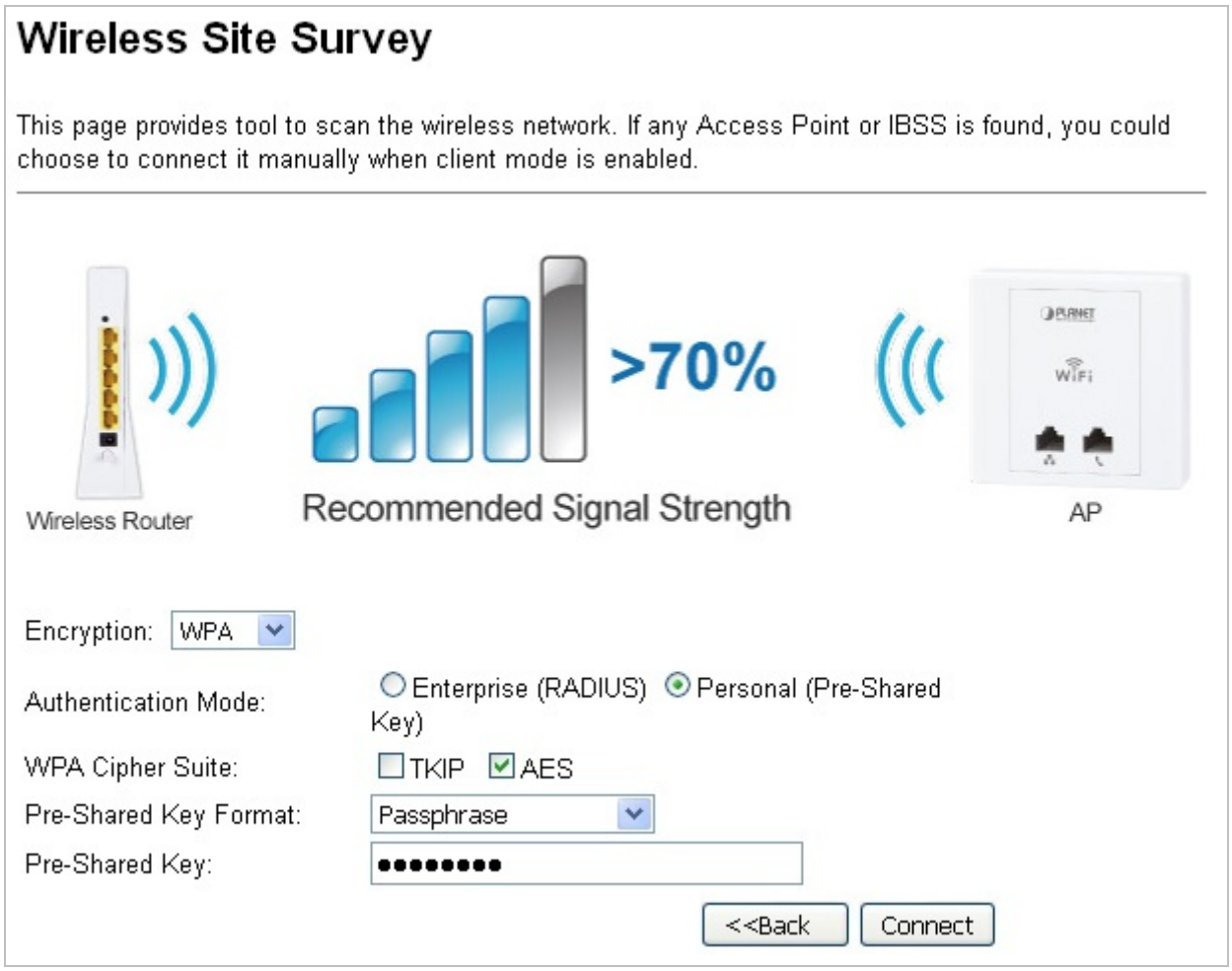
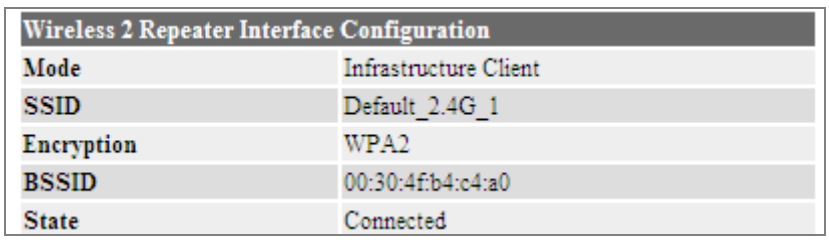


Figure 5-19 Universal Repeater-3

Step 4. Check "**Add to Wireless Profile**" and click "**Reboot Now**".

Figure 5-20 Universal Repeater-4

Step 5. Go to the "**Management-> Status**" page to check whether the state of Repeater interface should be "**Connected**".

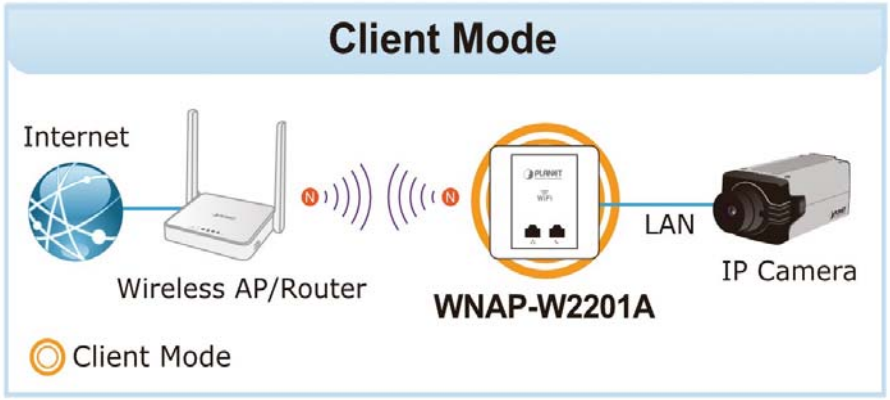


Wireless 2 Repeater Interface Configuration	
Mode	Infrastructure Client
SSID	Default_2.4G_1
Encryption	WPA2
BSSID	00:30:4f:b4:c4:a0
State	Connected

Figure 5-21 Universal Repeater-5

■ Client (Infrastructure)

Combine the Wireless Router to the Ethernet devices such as TV, Game player, or HDD and DVD, to make them be wireless stations.



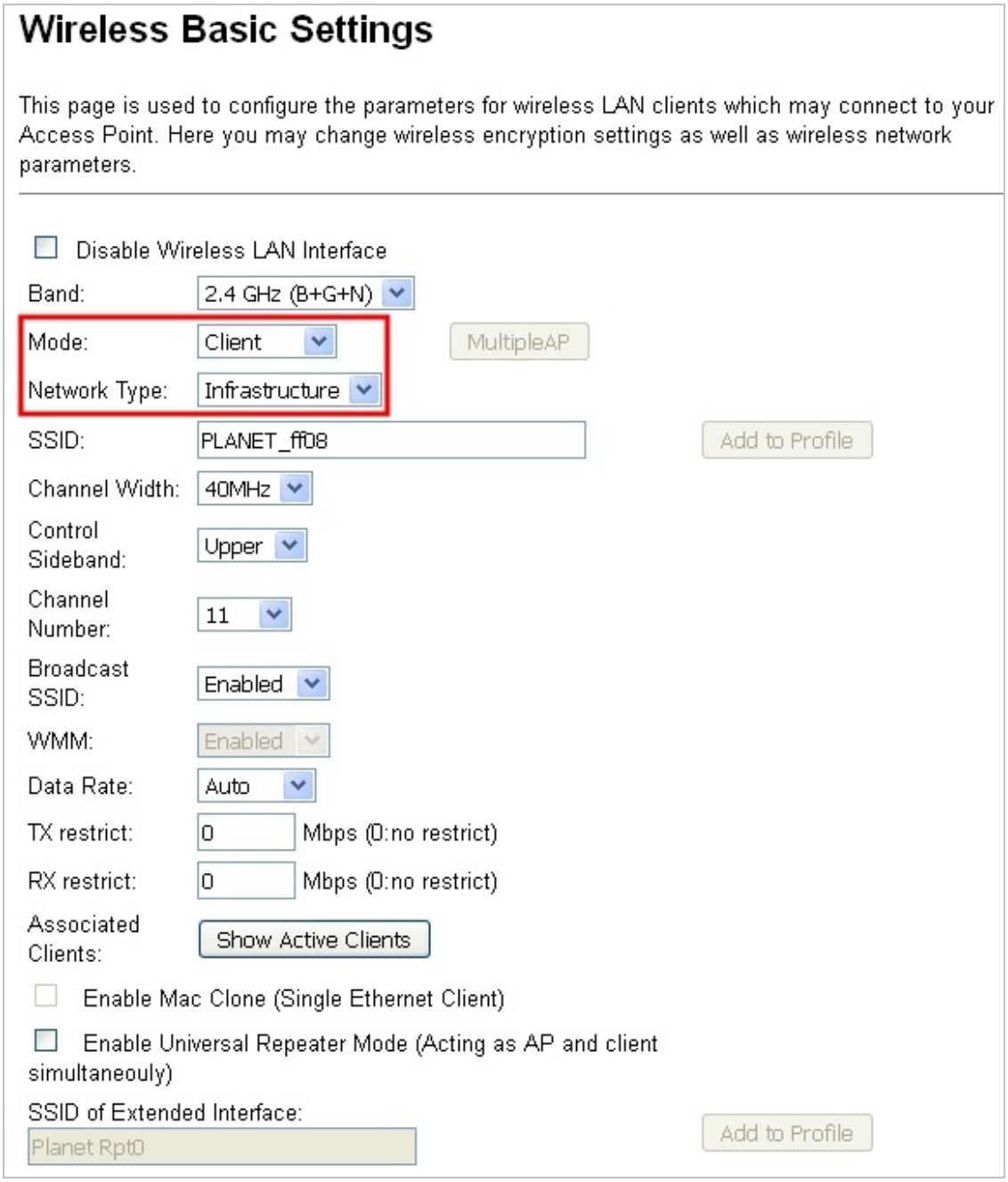


Figure 5-22 Wireless Basic Settings – Client

The page includes the following fields:

Object	Description
Disable Wireless LAN Interface	Check the box to disable the wireless function.
Band	Select the desired mode. Default is "**2.4GHz (B+G+N)**". It is strongly recommended that you set the Band to "2.4GHz (B+G+N)", and all of 802.11b, 802.11g, and 802.11n wireless stations can connect to the WNAP-W2201A. ■ **2.4 GHz (B)**: 802.11b mode, rate is up to 11Mbps ■ **2.4 GHz (G)**: 802.11g mode, rate is up to 54Mbps ■ **2.4 GHz (N)**: 802.11n mode, rate is up to 300Mbps(2T2R) ■ **2.4 GHz (B+G)**: 802.11b/g mode, rate is up to 11Mbps or 54Mbps ■ **2.4 GHz (G+N)**: 802.11g/n mode, rate is up to 54Mbps or 300Mbps ■ **2.4 GHz (B+G+N)**: 802.11b/g/n mode, rate is up to 11Mbps, 54Mbps, or 300Mbps
Mode	There are four kinds of wireless mode selections: ■ **AP** ■ **Client** ■ **WDS** ■ **Repeater** If you select WDS or Repeater, please click "**WDS Settings**" in the submenu for the related configuration. Furthermore, click "**Multiple AP"** to enable multiple SSID functions.
Network Type	In **Infrastructure**, the wireless LAN serves as a wireless station. And the user can use the PC equipped with the WNAP-W2201A to access the wireless network via other access points. In **ad hoc**, the wireless LAN will use the ad-hoc mode to operate. Default is "**Infrastructure**". Note: only while the wireless mode is set to "**Client**", then the **Network Type** can be configured.
SSID	It's the ID of the wireless network. User can access the wireless network via the ID only. However, if you switch to Client Mode, this field becomes the SSID of the AP you want to connect with. Default: **PLANET_XXXX ("X" means the last 4 digits of the MAC address)**
Broadcast SSID	If you enable "Broadcast SSID", every wireless station located within the coverage of the WNAP-W2201A can discover its signal easily. If you are building a public wireless network, enabling this feature is recommended. In private network, disabling "Broadcast SSID" can

	provide better wireless network security. Default is "**Enabled**".
Data Rate	Set the wireless data transfer rate to a certain value. Since most of wireless devices will negotiate with each other and pick a proper data transfer rate automatically, **it's not necessary to change this value unless you know what will happen after modification.** Default is "**Auto"**.
Enable Mac Clone (Single Ethernet Client)	Enable Mac Clone.

➢ Example of how to configure **Client Mode**. Please take the following steps:

To configure each wireless parameter, please go to the "**WLAN → Basic Settings**" page.

Step 1. Go to the "**WLAN → Site Survey**" page and click "**Site Survey**".

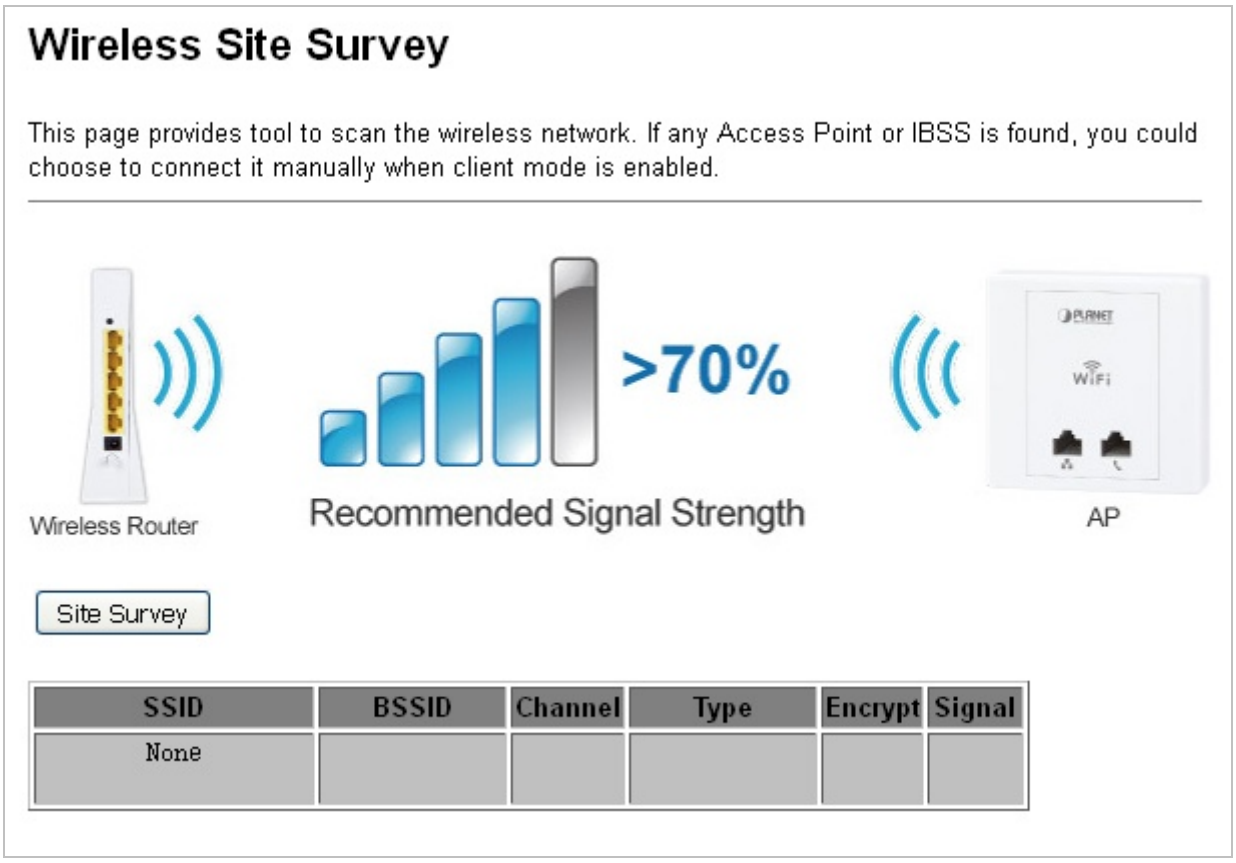


Figure 5-23 Client – Survey

Step 2. Choose the root AP from the list. If the root AP is not listed in the table, re-click "**Site Survey**" to update the list.

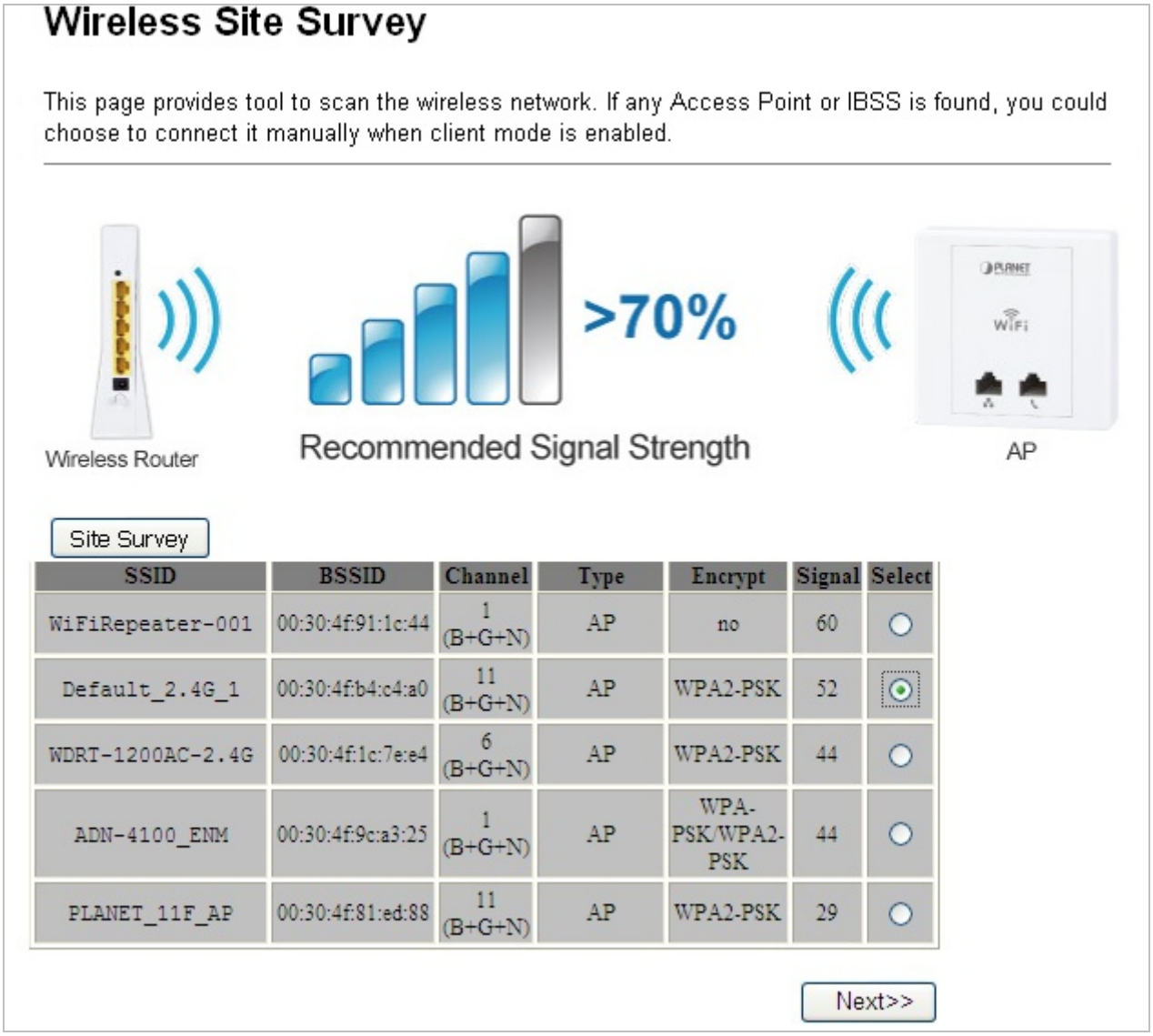


Figure 5-24 Client – AP List

Step 3. Enter the Security Key of the root AP and then click "**Connect**".

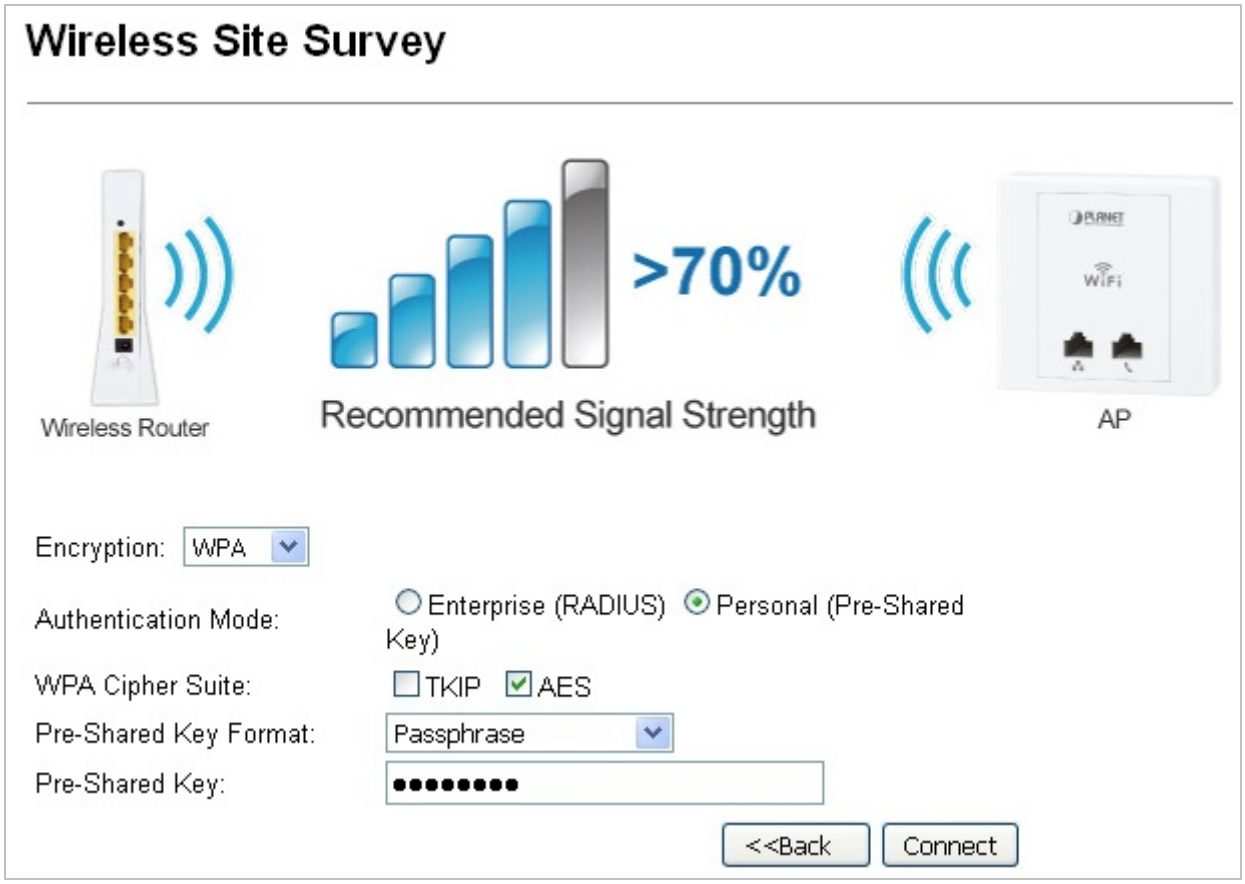


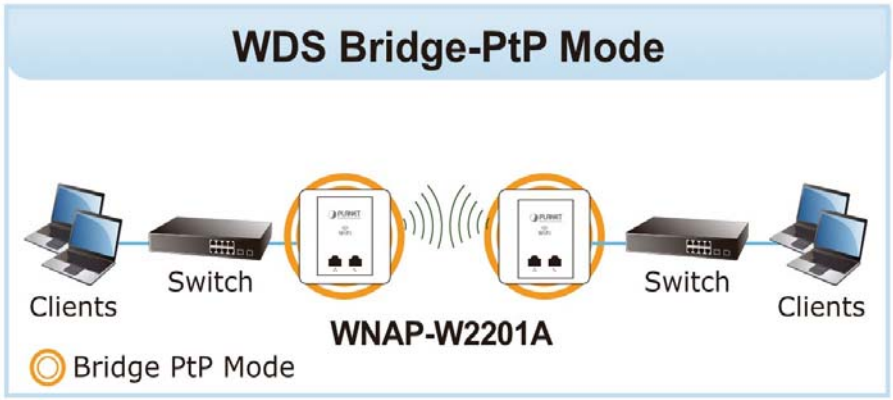
Figure 5-25 Client – Security

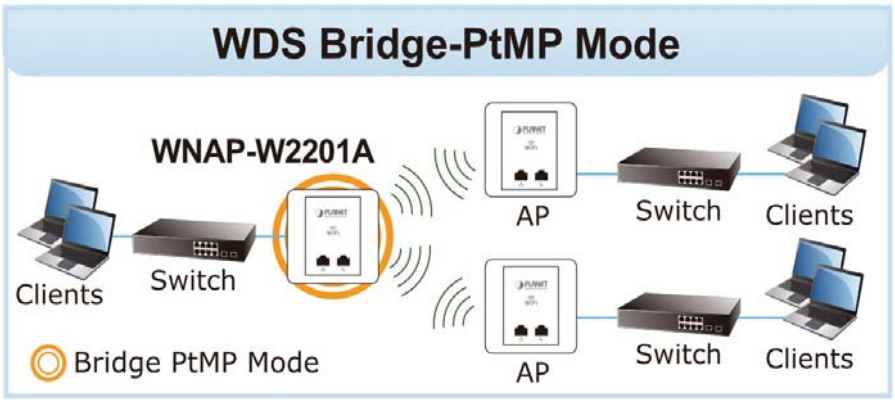
Step 4. Wait until the connection is established. Check the "**Add to Wireless Profile**" option and then reboot it.

Figure 5-26 Client – Status

■ WDS

Connect this Wireless AP with up to 8 WDS-capable wireless APs to expand the scope of network.





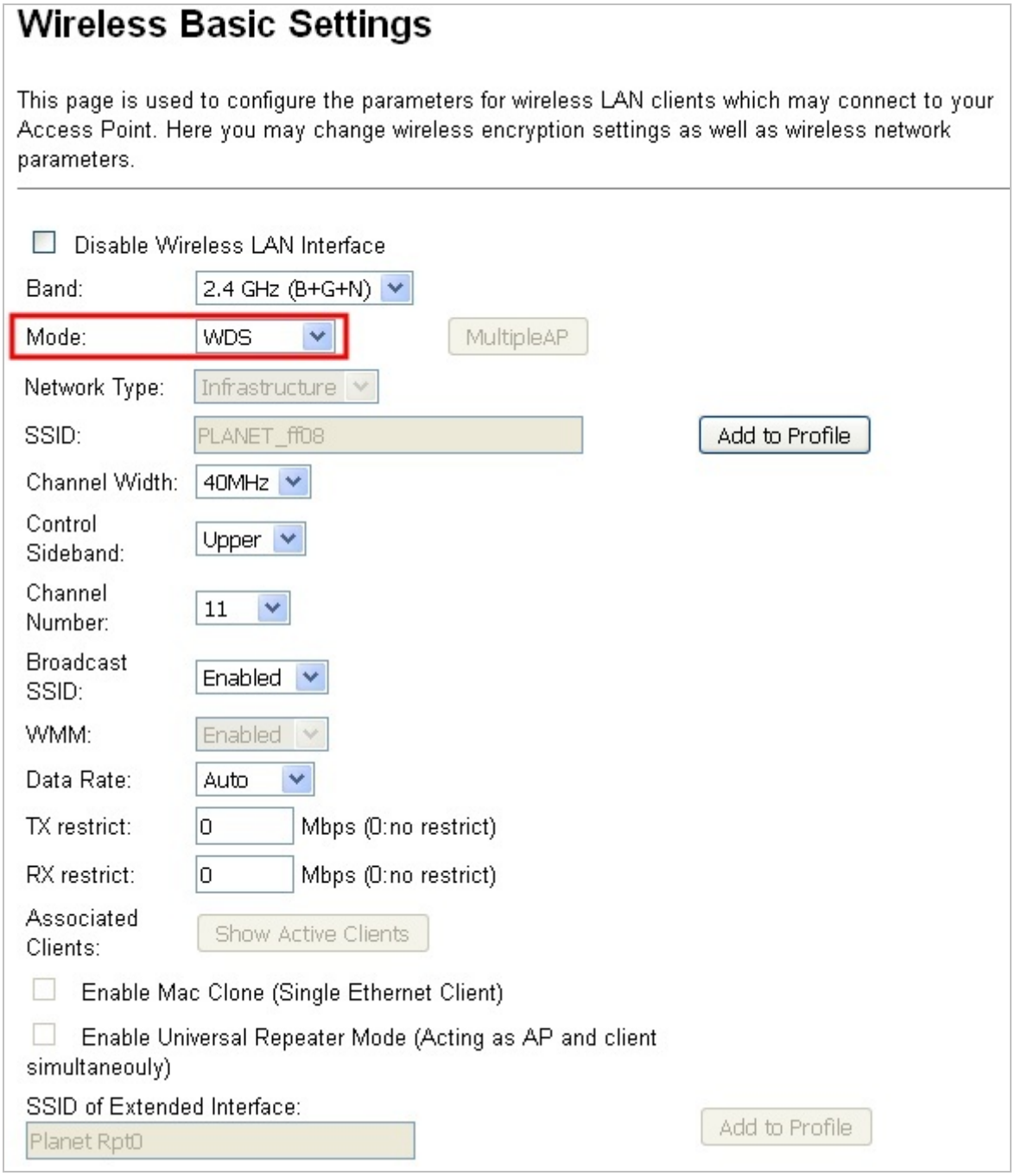


Figure 5-27 Wireless Basic Settings – WDS

The page includes the following fields:

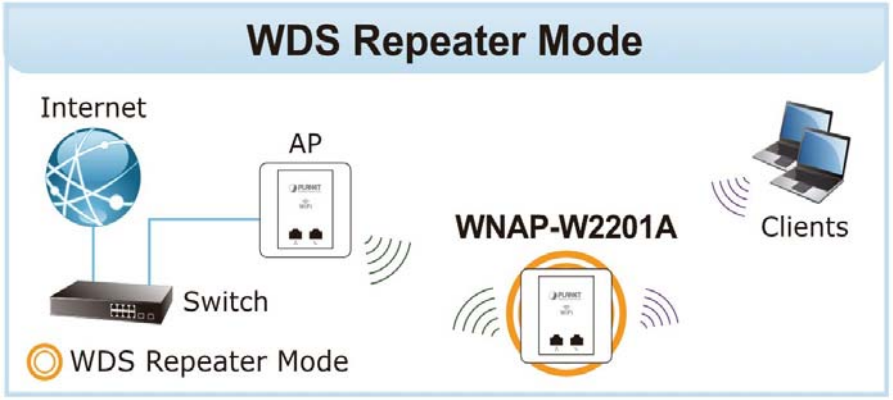
Object	Description
Disable Wireless LAN Interface	Check the box to disable the wireless function.
Band	Select the desired mode. Default is "**2.4GHz (B+G+N)**". It is strongly recommended that you set the Band to "2.4GHz (B+G+N)", and all of 802.11b, 802.11g, and 802.11n wireless stations can connect to the WNAP-W2201A. ■ **2.4 GHz (B)**: 802.11b mode, rate is up to 11Mbps

	■ **2.4 GHz (G)**: 802.11g mode, rate is up to 54Mbps ■ **2.4 GHz (N)**: 802.11n mode, rate is up to 300Mbps(2T2R) ■ **2.4 GHz (B+G)**: 802.11b/g mode, rate is up to 11Mbps or 54Mbps ■ **2.4 GHz (G+N)**: 802.11g/n mode, rate is up to 54Mbps or 300Mbps ■ **2.4 GHz (B+G+N)**: 802.11b/g/n mode, rate is up to 11Mbps, 54Mbps, or 300Mbps
Mode	There are four kinds of wireless mode selections: ■ **AP** ■ **Client** ■ **WDS** ■ **Repeater** If you select WDS or Repeater, please click "**WDS Settings**" in the submenu for the related configuration. Furthermore, click "**Multiple AP"** to enable multiple SSID function.
Channel Width	You can select **20MHz**, or **40MHz**
Control Sideband	You can select **Upper** or **Lower**.
Channel Number	You can select the operating frequency of wireless network.
Data Rate	Set the wireless data transfer rate to a certain value. Since most of wireless devices will negotiate with each other and pick a proper data transfer rate automatically, **it's not necessary to change this value unless you know what will happen after modification.** Default is "**Auto"**.

Once you have applied and saved the settings of WDS mode, you can then go to the "**WLAN → WDS Settings**" page on the AP to set up the MAC address of the remote slave AP.

■ **Repeater**

Connect this Wireless AP with up to 8 WDS-capable wireless APs, and connect another AP to provide service for all wireless stations within its coverage.



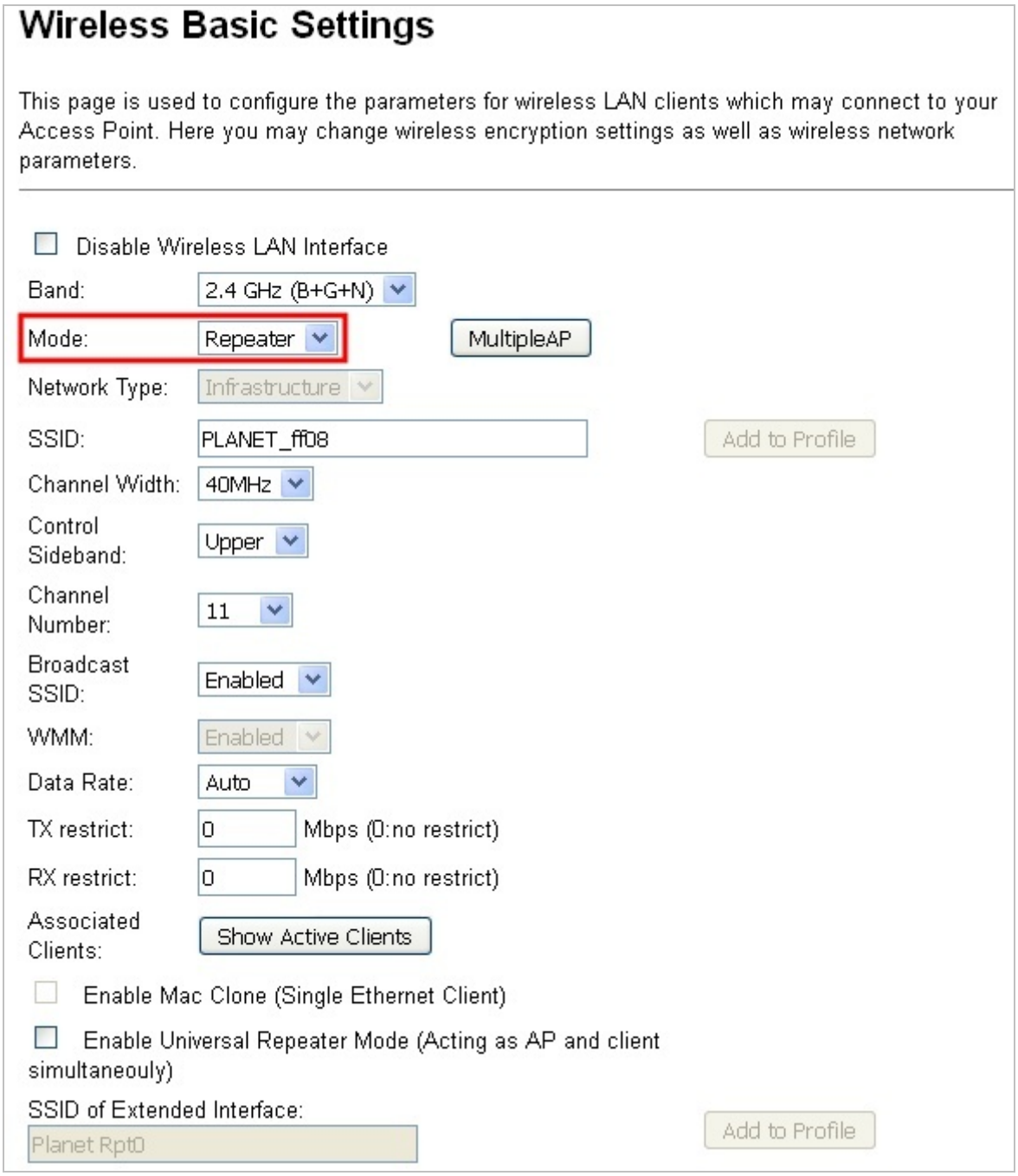


Figure 5-28 Wireless Basic Settings – Repeater

The page includes the following fields:

Object	Description
Disable Wireless LAN Interface	Check the box to disable the wireless function.
Band	Select the desired mode. Default is "**2.4GHz (B+G+N)**". It is strongly recommended that you set the Band to "2.4GHz (B+G+N)", and all of 802.11b, 802.11g, and 802.11n wireless stations can connect to the WNAP-W2201A.

	■ **2.4 GHz (B)**: 802.11b mode, rate is up to 11Mbps ■ **2.4 GHz (G)**: 802.11g mode, rate is up to 54Mbps ■ **2.4 GHz (N)**: 802.11n mode, rate is up to 300Mbps(2T2R) ■ **2.4 GHz (B+G)**: 802.11b/g mode, rate is up to 11Mbps or 54Mbps ■ **2.4 GHz (G+N)**: 802.11g/n mode, rate is up to 54Mbps or 300Mbps ■ **2.4 GHz (B+G+N)**: 802.11b/g/n mode, rate is up to 11Mbps, 54Mbps, or 300Mbps
Mode	There are four kinds of wireless mode selections: ■ **AP** ■ **Client** ■ **WDS** ■ **Repeater** If you select WDS or Repeater, please click "**WDS Settings**" in the submenu for the related configuration. Furthermore, click "**Multiple AP"** to enable multiple SSID functions.
SSID	It's the ID of the wireless network. User can access the wireless network via the ID only. However, if you switch to Client Mode, this field becomes the SSID of the AP you want to connect with. Default: **PLANET_XXXX ("X" means the last 4 digits of the MAC address)**
Channel Width	You can select **20MHz**, or **40MHz**
Control Sideband	You can select **Upper** or **Lower**.
Channel Number	You can select the operating frequency of wireless network.
Broadcast SSID	If you enable "**Broadcast SSID**", every wireless station located within the coverage of the WNAP-W2201A can discover its signal easily. If you are building a public wireless network, enabling this feature is recommended. In private network, disabling "**Broadcast SSID**" can provide better wireless network security. Default is "**Enabled**".
Data Rate	Set the wireless data transfer rate to a certain value. Since most of wireless devices will negotiate with each other and pick a proper data transfer rate automatically, **it's not necessary to change this value unless you know what will happen after modification.** Default is "**Auto"**.
Associated Clients	Click "**Show Active Clients**" to show the status table of active wireless clients.
Enable Universal Repeater Mode (Acting as AP and client simultaneously)	Universal Repeater is a technology used to extend wireless coverage. To enable Universal Repeater Mode, check the box and enter the SSID you want to broadcast in the field below. Then please click "**Security**" in the submenu for the related settings of the AP you want to connect with.

5.4.2 Advanced Settings

Choose menu "**WLAN→ Advanced Settings**" to configure the advanced settings for the wireless network on this page. After the configuration, please click "**Apply**" to save the settings.

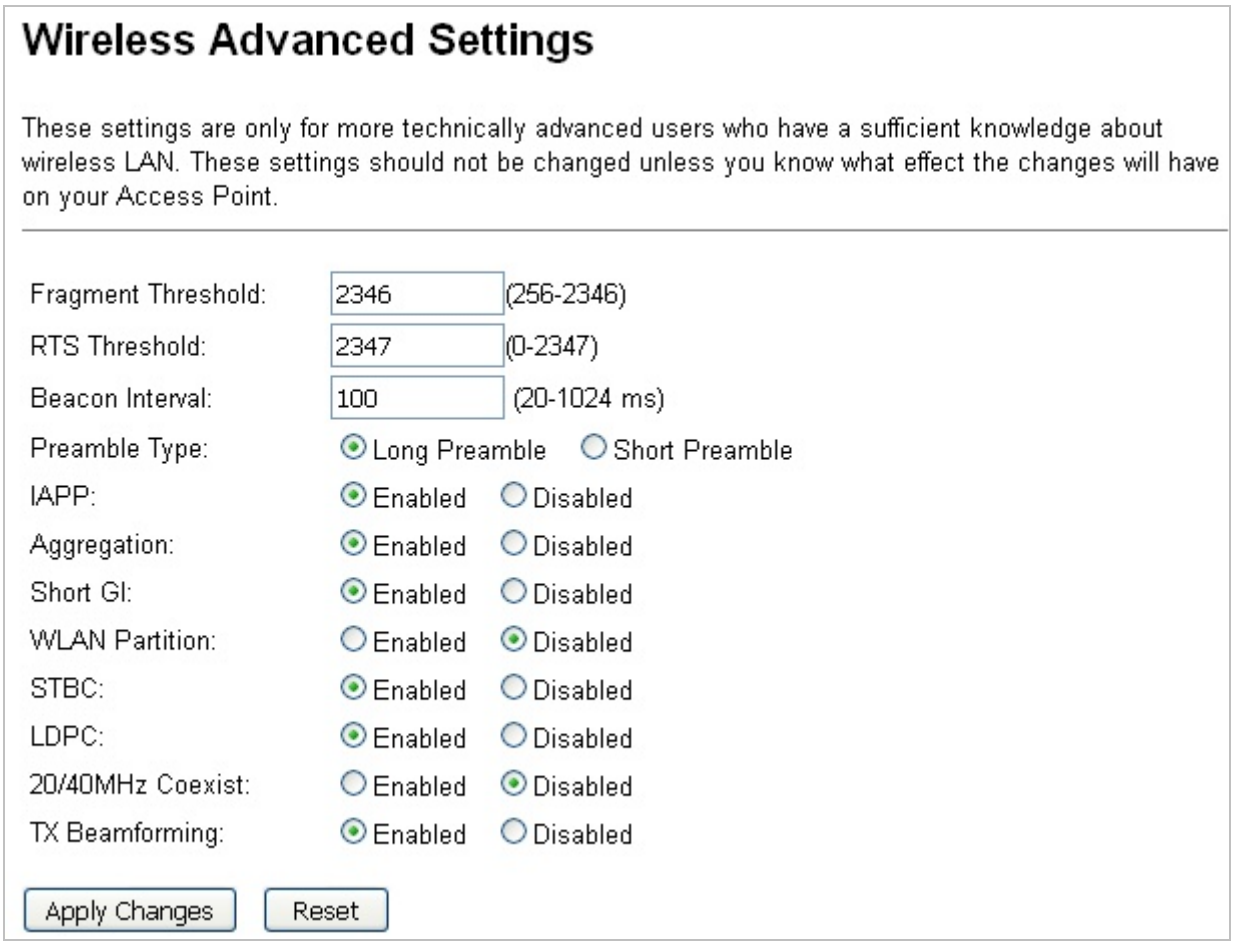


Figure 5-29 Wireless Advanced Settings

The page includes the following fields:

Object	Description
Fragment Threshold	You can specify the maximum size of packet during the fragmentation of data to be transmitted. If you set this value too low, it will result in bad performance. Default is "2346".
RTS Threshold	When the packet size is smaller than the RTS threshold, the access point will not use the RTS/CTS mechanism to send this packet. Default is "2347".
Beacon Interval	The interval of time that this access point broadcasts a beacon. Beacon is used to synchronize the wireless network. Default is "100".
IAPP	**IAPP (Inter-Access Point Protocol)** enabled is recommended as it describes an optional extension to IEEE 802.11 that provides wireless access-point communications among multivendor systems. Default is "Enabled".

Protection	It is recommended to enable the protection mechanism. This mechanism can decrease the rate of data collision between 802.11b and 802.11g wireless stations. When the protection mode is enabled, the throughput of the AP will be a little lower due to the transmission of heavy frame traffic. Default is “Disabled”.
Aggregation	It is a function where the values of multiple rows are grouped together. Default is “Enabled”
Short GI	It is used to set the time that the receiver waits for RF reflections to settle out before sampling data. Default is “Enabled”
WLAN Partition	This feature also called “**WLAN isolation**” or “**Block Relay**”. If this is enabled, wireless clients cannot exchange data through the WNAP-W2201A. Default is “Disabled”.
STBC	Activate **Space Time Blocking Code (STBC)** which does not need channel statement information (CSI). Default Setting: "Enabled"
LDPC	Low-density Parity-check Code is wireless data transmit algorithm. Default Setting: "Enabled"
20/40MHz Coexist	Configure 20/40MHz coexisting scheme. If you set up as "Enabled", "20MHz" and "40MHz" will coexist. Default Setting: "Disabled"

5.4.3 RF Output Power

Choose menu "**WLAN2 (2.4GHz) → RF Output Power**" to adjust to different levels of transmitting power for the wireless network according to various environment on this page. After the configuration, please click "**Apply Changes**" to save the settings.

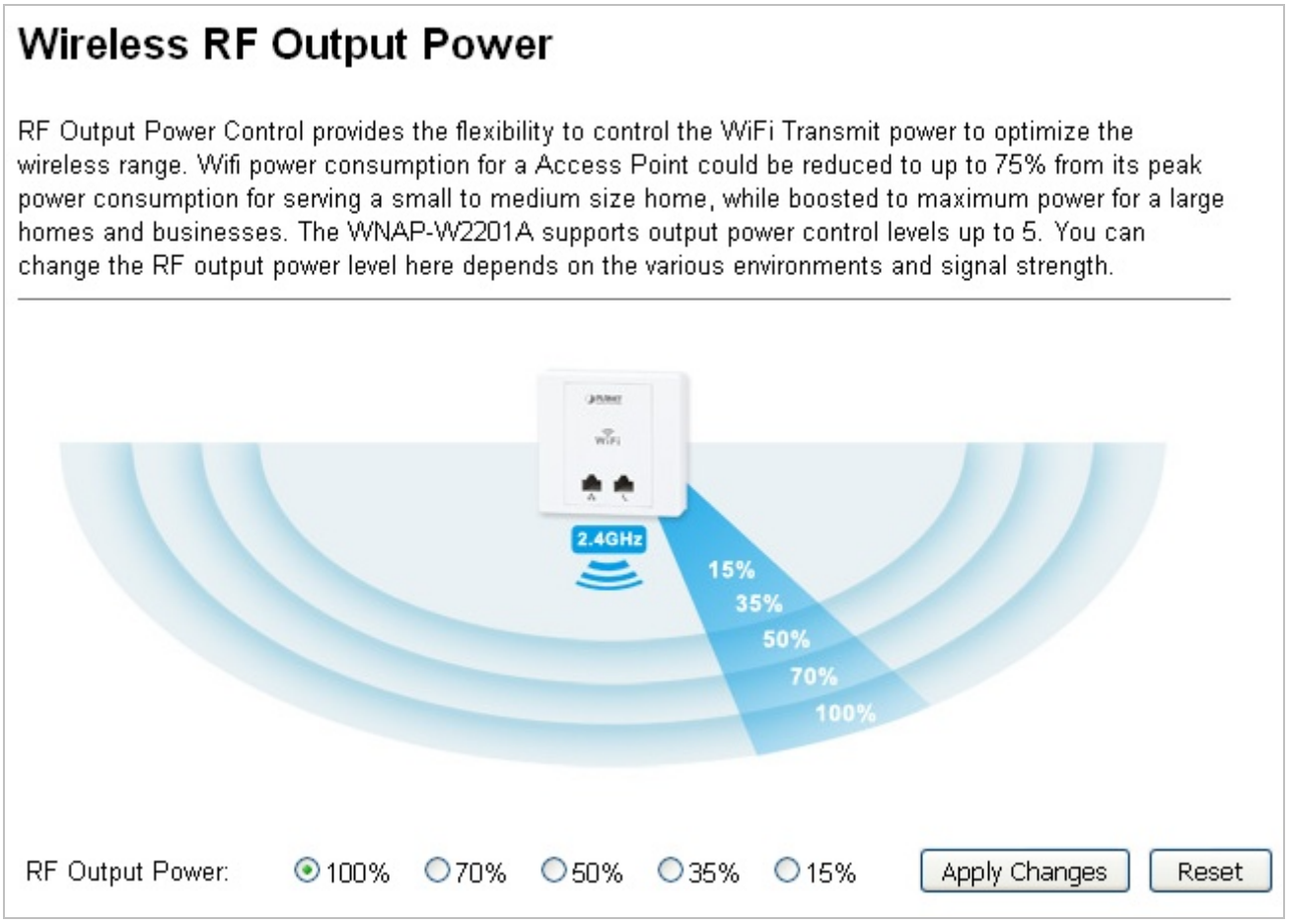


Figure 5-30 RF Output Power

RF Output Power Control provides the flexibility to control the Wi-Fi Transmit power to optimize the wireless range. Wi-Fi power consumption for an Access Point could be reduced to up to 75% from its peak power consumption for serving small to medium size homes, while maximum power is boosted for large homes and businesses. The WNAP-W2201A supports output power control levels up to 5. You can change the RF output power level here in accordance with various environments and signal strength.

5.4.4 Security

Choose menu "**WLAN → Security**" to configure the settings of wireless security for the wireless network on this page. After the configuration, please click "**Apply Changes**" to save the settings.

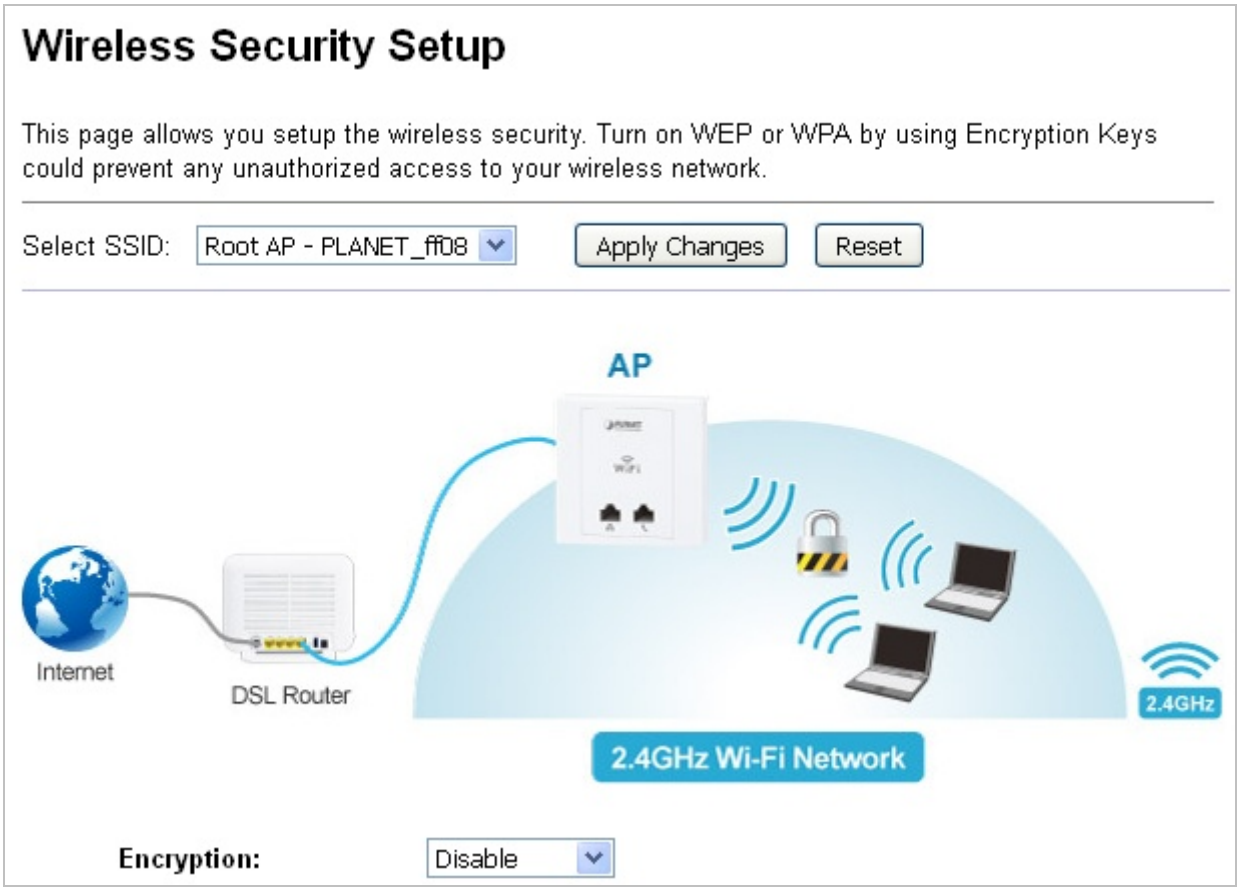


Figure 5-31 Wireless Security Settings

The page includes the following fields:

Object	Description
Select SSID	Select the SSID you want to configure the wireless security function, which includes the root one and the client one.
Encryption	**Disable:** No security setup for wireless connection.
	■ **WEP:** It is based on the IEEE 802.11 standard. And the default setting of authentication is **Automatic**, which can select **Open System** or **Shared Key** authentication type automatically based on the wireless station's capability and request. Furthermore, you can select **Key Length** and enter 10 and 26 **Hexadecimal** digits (any combination of 0-9, a-f, A-F, zero key is not promoted) or 5 and 13 **ASCII** characters in the **Encryption Key** field.
	■ **WPA:** WPA is a medium level encryption and is supported by most wireless devices and operating systems.

	■ **WPA2:** WPA2 is a high level encryption and is supported by most wireless devices and operating systems.
	■ **WPA / WPA2 / WPA-Mixed:** WPA Mixed Mode allows the use of both WPA and WPA2 at the same time.
Authentication Mode	■ **Enterprise (RADIUS)** When you select the authentication mode based on Enterprise (RADIUS Server), please enter the **IP Address**, **Port**, and **Password** of the RADIUS Server.
	■ **Personal (Pre-shared Key)** When you select the other authentication mode based on Personal (Pre-shared Key), please enter at least 8 ASCII characters (Passphrase) or 64 Hexadecimal characters. All of the Cipher Suites support **TKIP** and **AES**.
802.1x Authentication	Enable 802.1x authentication function and then enter the **IP Address**, **Port**, and **Password** of the RADIUS Server.

5.4.5 Access Control

Choose menu "**WLAN → Access Control**" to allow or deny the computer of specified MAC address to connect with the WNAP-W2201A on this page. After the configuration, please click "**Apply Changes**" to save the settings.

Figure 5-32 Wireless Access Control

The page includes the following fields:

Object	Description
Wireless Access Control Mode	You can choose to set the **Allow Listed**, **Deny Listed**, or **Disable** this function.
MAC Address	Enter the MAC address you want to allow or deny connection to the WNAP-W2201A in the field.
Comment	You can make some comment on each MAC address on the list.
Current Access Control List	You can select some MAC addresses and click "**Delete Selected**" to delete it.

■ **Wireless Access Control example:**

To deny a PC at the MAC address of 00:30:4F:00:00:01 to connect to your wireless network, do as follows:

Step 1. Select "**Deny Listed**" from MAC Address Filter drop-down menu.

Step 2. Enter 00:30:4F:00:00:01 in the MAC address box and click "**Add**".

Step 3. Click "**OK**" to save your settings and you can add more MAC addresses, if you like, simply repeat the above steps.

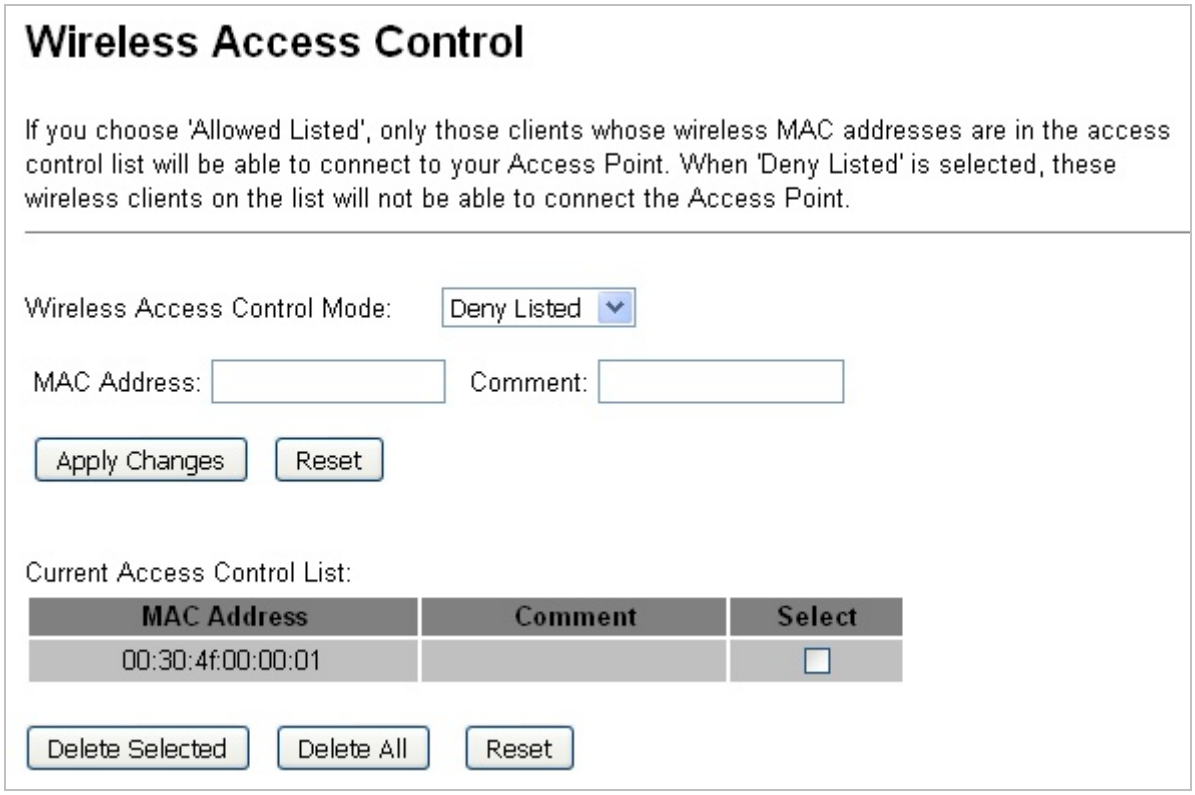
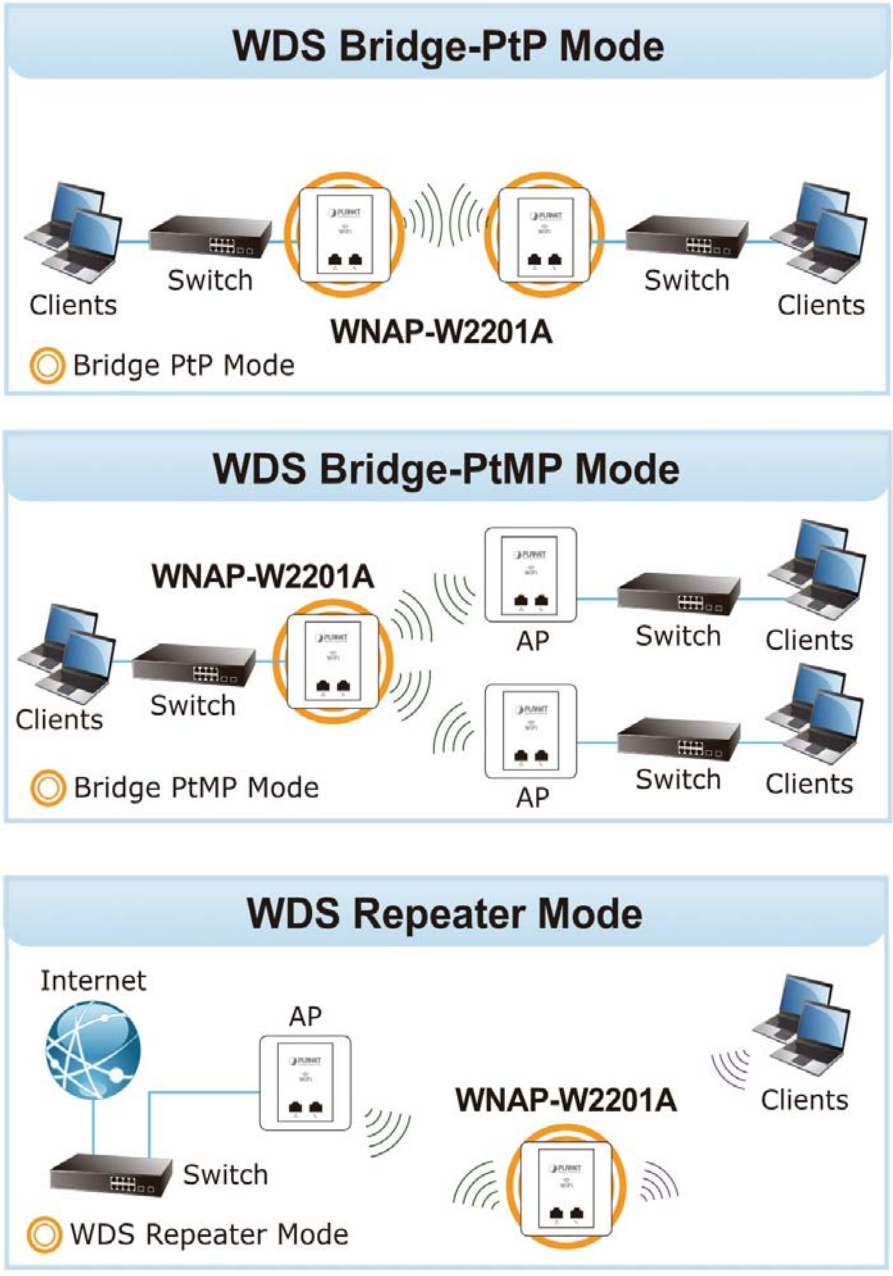


Figure 5-33 Wireless Access Control – Deny

5.4.6 WDS

WDS (Wireless Distribution System) feature can be used to extend your existing wireless network coverage. Here we present you how to configure such feature in the AP.



Before configuring the WDS Setting page, you have to select the wireless mode to "**WDS**" on the **WLAN → Basic Settings** web page.

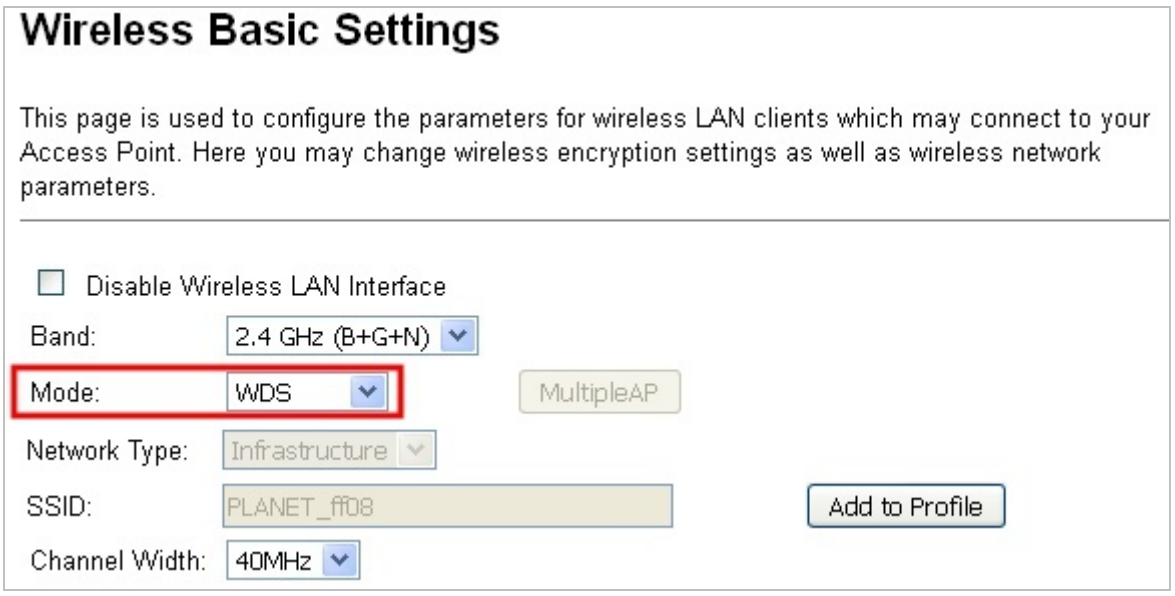


Figure 5-34 WDS Mode

Choose menu "**WLAN → WDS Settings**" to configure WDS to connect the WNAP-W2201A with another AP on this page. After the configuration, please "**Apply Changes**" to save the settings.

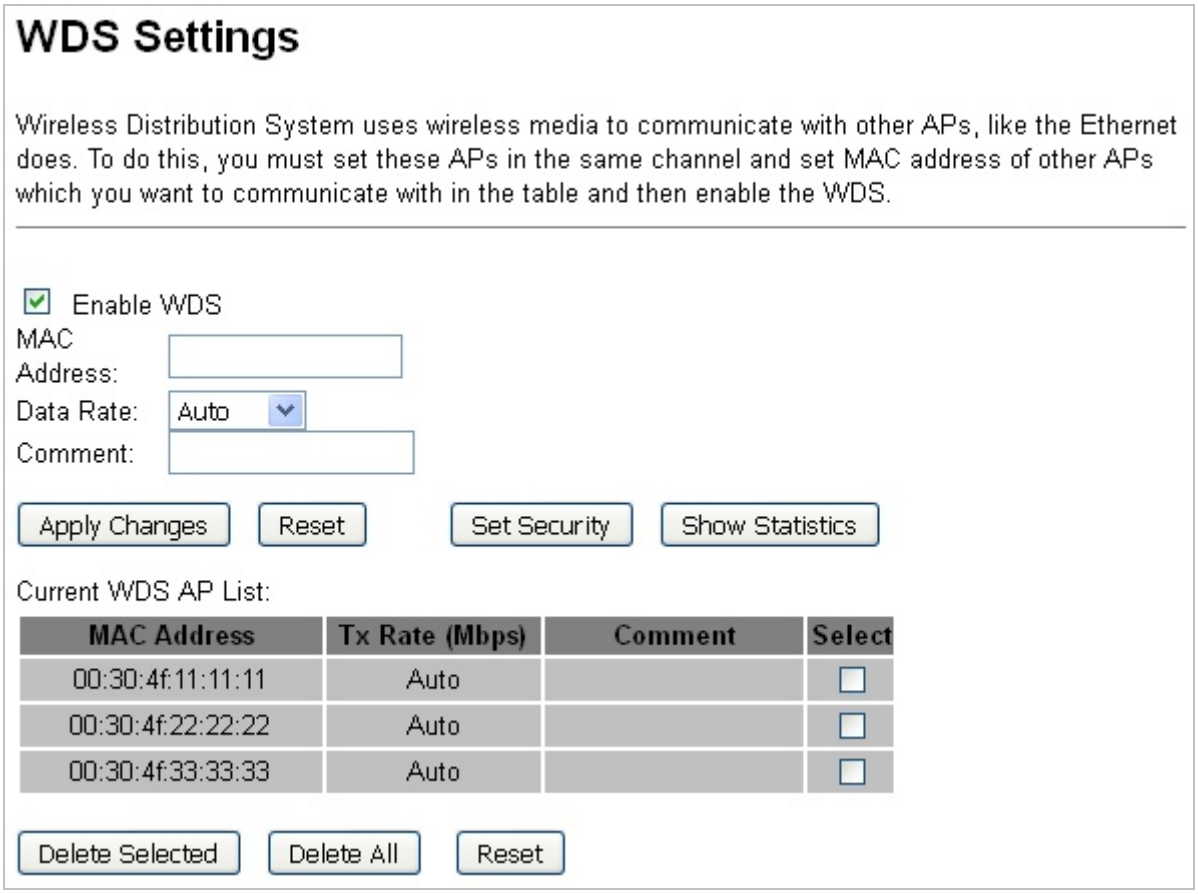


Figure 5-35 WDS Settings

Figure 5-36 WDS – Set Security

The page includes the following fields:

Object	Description
Enable WDS	Check the box to enable the WDS function. Please select **WDS** or **Repeater** in the Mode of **Wireless Basic Settings** before you enable WDS on this page.
MAC Address	You can enter the MAC address of the AP you want to connect with. Max. 8 MAC addresses can be configured.
Data Rate	Default is "**Auto"**.
Comment	You can make some comment for each MAC address on the list.
Set Security	Click "**Set Security**" to configure the wireless security parameters of the AP you want to connect via WDS.
Show Statics	Click "**Show Statics**" to show the WDS AP.
Current WDS AP List	You can select some MAC addresses of the AP and click "**Delete Selected**" to delete it.

Note

WDS feature can only be implemented between 2 wireless devices that both support the WDS feature. Plus, **channel**, **security settings** and **security key** must be **the same** on both such devices.

Note

To encrypt your wireless network, click "**Set Security**". For the detail of wireless security, see section 5.4.4. Do remember to reboot the device after you save your wireless security settings; otherwise, the WDS feature may not function.

5.4.7 Site Survey

Choose menu "**WLAN → Site Survey**" to scan the available local AP. If any Access Point is found, you could choose any one to connect with manually when the **Client Mode** is enabled.

Figure 5-37 Site Survey

5.4.8 WPS

WPS (**Wi-Fi Protected Setup**) is designed to ease setup of security Wi-Fi networks and subsequently network management. This Wireless Router supports WPS features for **AP mode**, **Repeater mode**, **Infrastructure-Client mode**, and the wireless root interface of **Universal Repeater mode**.

Figure 5-38 WPS

Simply enter a Pin code or press the software PBC button or hardware WPS button (if any) and a secure wireless connection is established.

- **PBC:** If you find the WPS LED blinking for 2 minutes after you press the hardware WPS button on the device, it means that PBC encryption method is successfully enabled. And an authentication will be performed between your router and the WPS/PBC-enabled wireless client device during this time; if it succeeds, the wireless client device connects to your device, and the WPS LED turns off. Repeat steps mentioned above if you want to connect more wireless client devices to the device.

- **PIN**: To use this option, you must know the Pin code from the wireless client and enter it in corresponding field on your device while using the same Pin code on client side for such connection.

The page includes the following fields:

Object	Description
Disable WPS	You can check the box to disable the WPS function.
WPS Status	Here you can check if the connection via WPS is established or not.
Self-Pin Number	It is the Pin number of the WNAP-W2201A here.
Push Button Configuration	Click "**Start PBC**" to activate WPS as well in the client device within 2 minutes.
Client Pin Number	In addition to the PBC method, you can also use the Pin method to activate the WPS. Just enter the Pin number of the client device in the field and click "Start Pin".

The WPS encryption can be implemented only between your Router and another WPS-capable device.

➢ Example of how to establish wireless connection using **WPS**. Please take the following steps:

Step 1. Choose menu "**WLAN → WPS**" to configure the setting for WPS. After the configuration, please click "**Apply Changes**" to save the settings.

Step 2. Add a new device.

If the wireless adapter supports Wi-Fi Protected Setup (WPS), you can establish a wireless connection between wireless adapter and AP using either Push Button Configuration (PBC) method or Pin method.

To build a successful connection by WPS, you should also do the corresponding configuration of the new device for WPS function.

A. By Push Button Configuration (PBC)

i. Click "**Start PBC**" on the WPS page of the AP.

Figure 5-39 WPS-PBC -1

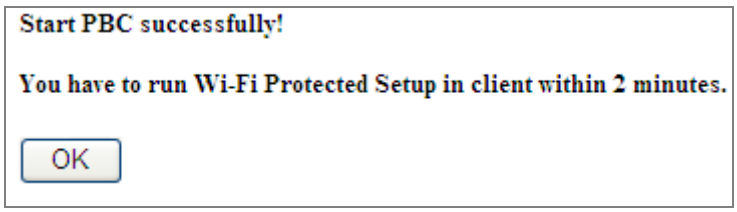


Figure 5-40 WPS-PBC -2

ii. Press and hold the WPS button equipped on the adapter directly for 2 or 3 seconds. Or you can click the WPS button with the same function in the configuration utility of the adapter. The process must be finished within 2 minutes.

iii. Wait for a while until the next screen appears. Click **OK** to complete the WPS configuration.

B. By Pin

If the new device supports Wi-Fi Protected Setup and the Pin method, you can add it to the network by Pin with the following two methods.

Method One: Enter the Pin of your wireless adapter into the configuration utility of the AP

i. Enter the Pin code of the wireless adapter in the field behind **Client Pin Number** in the following figure and then click **Start Pin**.

Note

The Pin code of the adapter is always displayed on the WPS configuration screen.

Figure 5-41 WPS-Pin -1

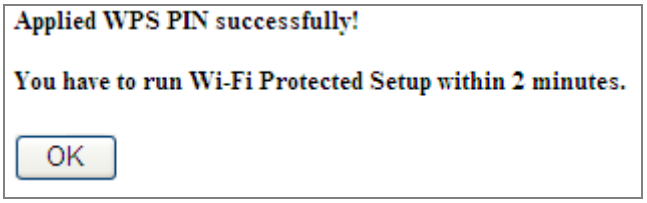


Figure 5-42 WPS-Pin -2

ii. For the configuration of the wireless adapter, please choose the option that you want to **enter Pin into the AP (Enrollee)** in the configuration utility of the WPS and click **Next** until the process finishes.

Method Two: Enter the Pin of the AP into the configuration utility of your wireless adapter

i. Click "**Start PBC**" on the WPS page of the AP. Get the current Pin code of the AP on WPS page (each AP has its unique Pin code).

Figure 5-43 WPS-Pin -3

ii. For the configuration of the wireless adapter, please choose the option that you want to **enter the Pin of the AP (Registrar)** in the configuration utility of the wireless adapter and enter it into the field. Then click **Next** until the process finishes.

5.4.9 Schedule

Wireless Schedules will enable or disable your wireless access at a set time based on your predefined schedule. This feature is often used for restricting access to all users (such as children, employees and guests) during specific times of the day for parental control or security reasons.

Choose menu "**WLAN → Schedule**" to configure the schedule rule of enabling wireless function. After the configuration, please click "**Apply Changes**" to save the settings.

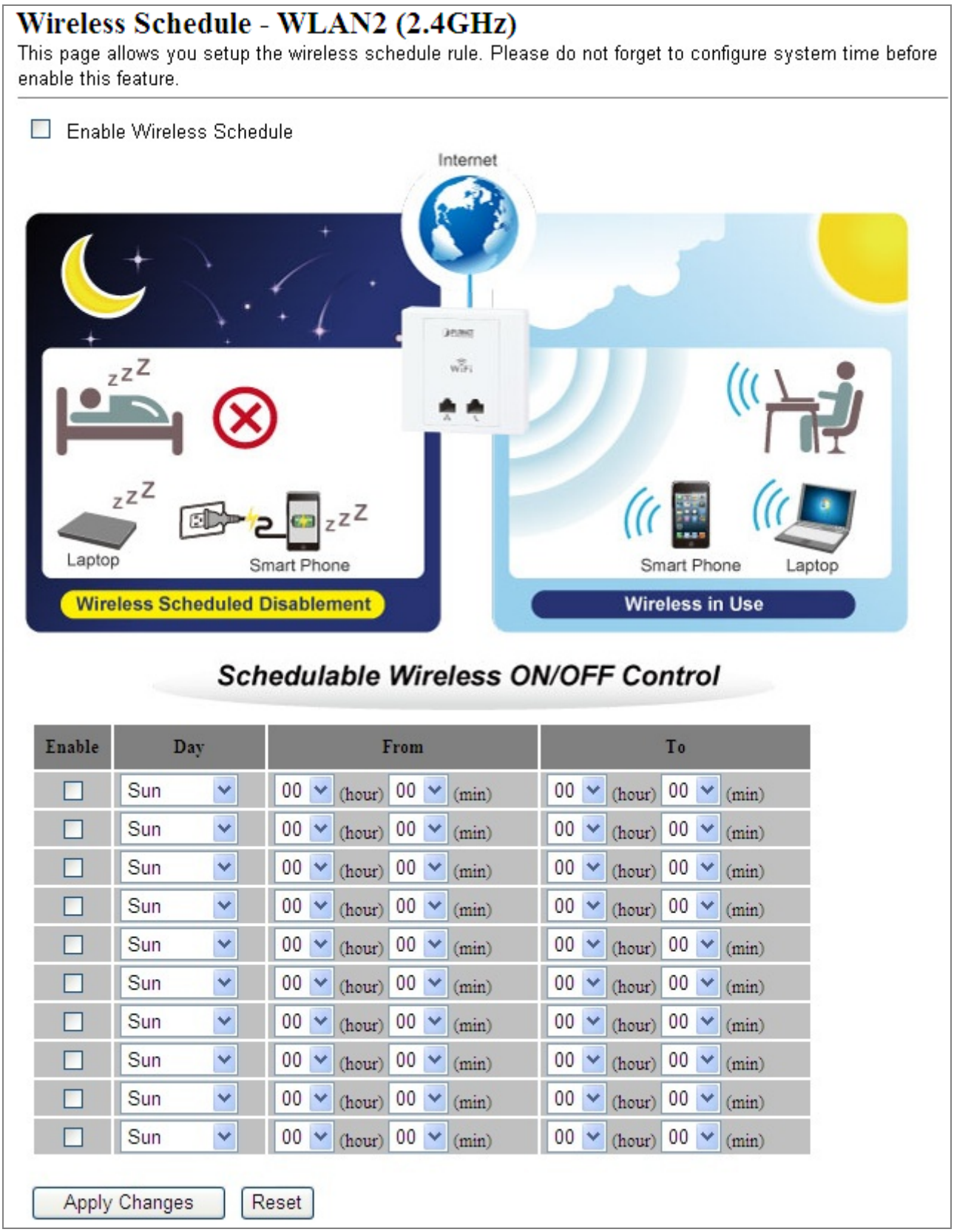


Figure 5-44 Schedule

Note

When setting the Wireless Schedule, it is important to ensure that your **System Clock** settings have been configured. If not, your Wireless Schedule will not function correctly.

5.5 Management

This section focuses on how to maintain AP, including Restore to Factory Default Setting, Backup/Restore, Firmware Upgrade, Reboot, Password Change and Syslog.

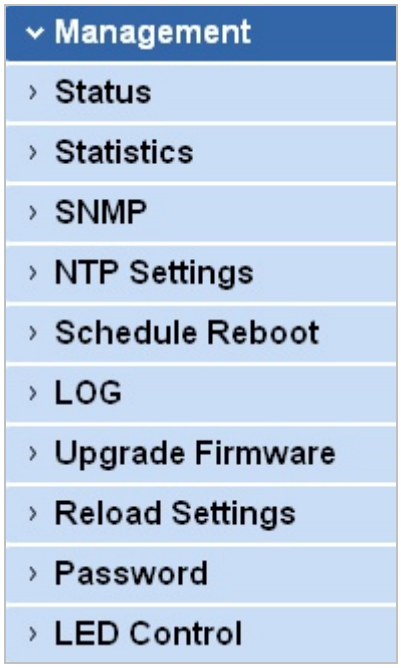


Figure 5-45 Management – Main Menu

5.5.1 Status

You can use this function to realize the instantaneous information of the wireless AP. The information displayed here may vary on different configurations.

Choose menu "**Management → Status**" to show the current status and some basic settings of the WNAP-W2201A.

Access Point Status

System	
Uptime	0day:0h:7m:18s
Firmware Version	1.3465cb151228
Build Time	Mon Dec 28 16:37:50 CST 2015
Operation Configuration	
Mode	Standalone AP
Wireless Configuration	
Mode	AP
Band	2.4 GHz (B+G+N)
SSID	PLANET_ff04
Channel Number	11
Encryption	Disabled
BSSID	a8:f7:e0:16:ff:04
Associated Clients	0
Virtual AP1 Configuration	
Band	2.4 GHz (B+G+N)
SSID	PLANET_ff05
Encryption	Disabled
BSSID	02:f7:e0:16:ff:05
Associated Clients	0
Virtual AP2 Configuration	
Band	2.4 GHz (B+G+N)
SSID	PLANET_ff06
Encryption	Disabled
BSSID	02:f7:e0:16:ff:06
Associated Clients	0
Virtual AP3 Configuration	
Band	2.4 GHz (B+G+N)
SSID	PLANET_ff07
Encryption	Disabled
BSSID	02:f7:e0:16:ff:07
Associated Clients	0
Virtual AP4 Configuration	
Band	2.4 GHz (B+G+N)
SSID	PLANET_ff08
Encryption	Disabled
BSSID	02:f7:e0:16:ff:08
Associated Clients	0
LAN Configuration	
Attain IP Protocol	DHCP
IP Address	192.168.1.253
Subnet Mask	255.255.255.0
Default Gateway	192.168.1.254
MAC Address	a8:f7:e0:16:ff:03

Figure 5-46 Status

5.5.2 Statistics

Choose menu "**Management → Statistics**" to show the packet counters for transmission and reception regarding wireless and Ethernet network.

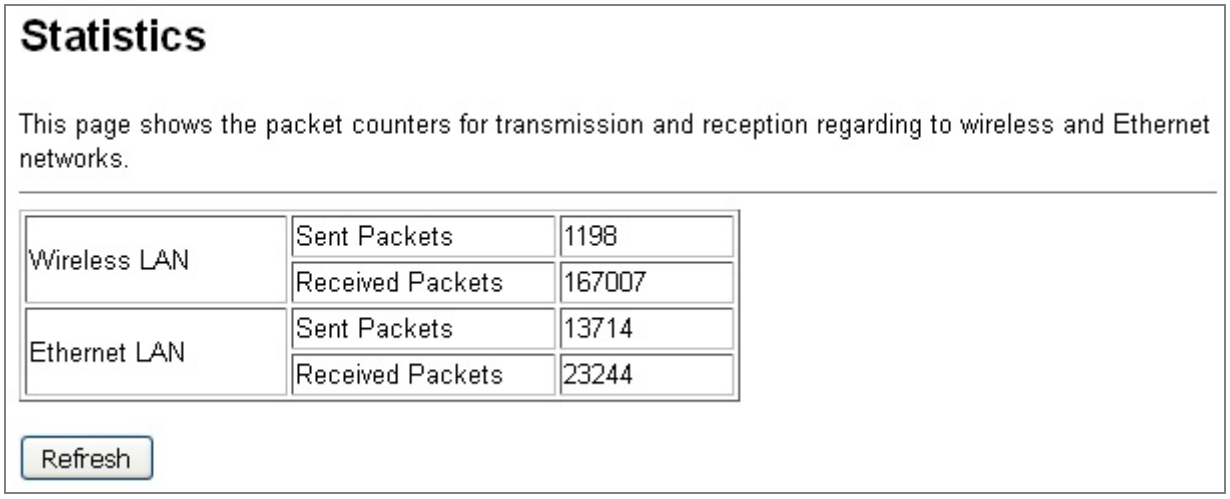


Figure 5-47 Statistics

The page includes the following fields:

Object	Description
Wireless LAN ***Sent Packets***	It shows the statistic count of sent packets on the wireless LAN interface.
Wireless LAN ***Received Packets***	It shows the statistic count of received packets on the wireless LAN interface.
Ethernet LAN ***Sent Packets***	It shows the statistic count of sent packets on the Ethernet LAN interface.
Ethernet LAN ***Received Packets***	It shows the statistic count of received packets on the Ethernet LAN interface.
Refresh	Click the refresh the statistic counters on the screen.

5.5.3 SNMP

Choose menu "**Management → SNMP**" to enable SNMP to allow the network management station to retrieve statistics and status from the SNMP agent in the AP. Simple Network Management Protocol (SNMP) is a popular network monitoring and management protocol, used to refer to a collection of specifications for network management that includes the protocol itself.

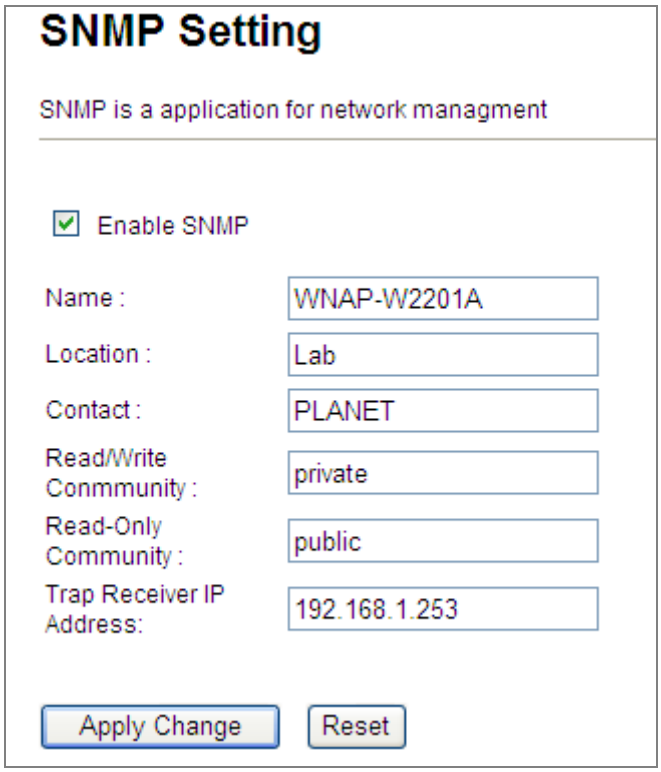


Figure 5-48 SNMP

The page includes the following fields:

Object	Description
Enable SNMP	It shows the statistic count of sent packets on the wireless LAN interface.
Name	An administratively-assigned name for this managed node.
Location	The physical location of this node.
Contact	The textual identification of the contact person for this managed node.
Read/Write Community	Enter the community name that allows Read/Write access to the AP's SNMP information. The community name can be considered a group password. The default setting is "**private**".
Read-Only Community	Enter the community name that allows Read-Only access to the AP's SNMP information. The community name can be considered a group password. The default setting is "**public**".
Trap Receiver IP Address	Enter the IP address s of the SNMP trap receiver.
Apply Change	Click "Apply Change" to save and apply the settings.
Reset	Click "Reset" to reset the values to default.

5.5.4 NTP Settings

This section assists you in setting the Wireless AP's system time. You can either select to set the time and date manually or automatically obtain the GMT time from Internet.

Choose menu "**Management → NTP Settings**" to configure the system time. You can also maintain the system time by synchronizing with a public time server over the Internet. After the configuration, please click "**OK**" to save the settings.

Note

The configured time and date settings are lost when the wireless AP is powered off.

Figure 5-49 Time Zone Settings

The page includes the following fields:

Object	Description
Current Time	Input current time manually. You can click "**Copy Computer Time**" to copy the PC's current time to the AP.
Time Zone Select	Select the time zone of the country you are currently in. The router will set its time based on your selection.
Automatically Adjust Daylight Saving	Select the time offset, if your location observes daylight saving time.
Enable NTP client update	Check to enable NTP update. Once this function is enabled, AP will automatically update the current time from NTP server.
NTP Server	User may select prefer NTP sever or input address of NTP server manually.

If the AP loses power for any reason, it cannot keep its clock running, and will not have the correct time when it is started again. To maintain correct time for schedules and logs, either you must enter the correct time after you restart the AP, or you must enable the NTP Server option.

5.5.5 Schedule Reboot

This page allows you to enable and configure system reboot schedule. The device can regularly reboot according to the reserved time when connecting to the Internet.

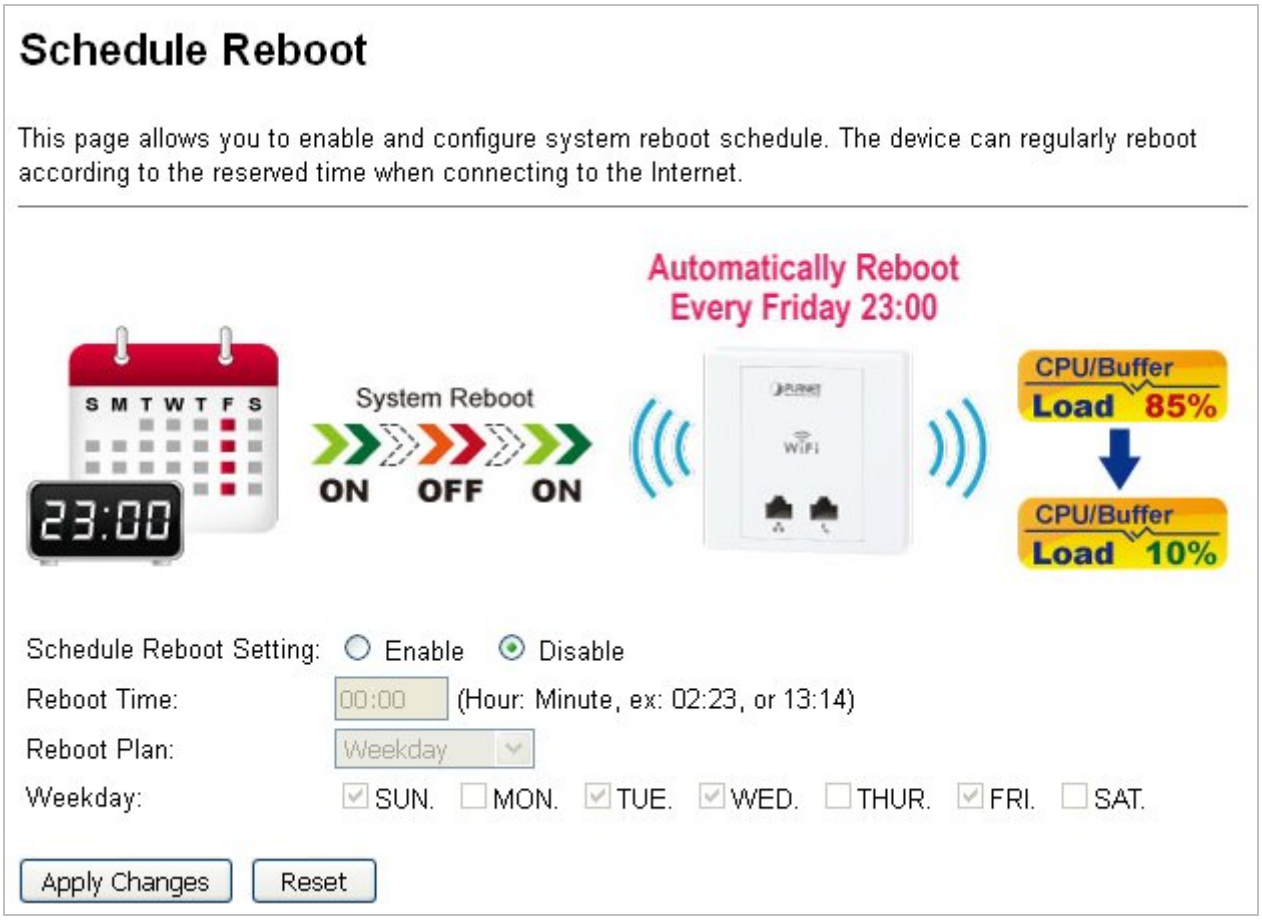


Figure 5-50 Schedule Reboot

The page includes the following fields:

Object	Description
Schedule Reboot Setting	Enable or disable the Schedule Reboot function.
Reboot Time	Enter the Reboot Time (24-hour format) to enable this function to take effect.
Reboot Plan	There are two Reboot Plans supported in the AP: **Weekday:** select this option to let the device reboot automatically according to the reserved time in one or more days of a week. **Every day:** select this option to let the device reboot automatically according to the reserved time every day.
Weekday	Check one or more days to let the device auto reboot on schedule. When choosing “Every day” as your reboot plan, the “Weekday” will be grayed out (disabled), which means Every day will auto reboot at the time that you schedule.

Note

1. This setting will only take effect when the Internet connection is accessible and the GMT time is configured correctly.
2. You must select at least one day when choosing "**Weekday**" as your reboot plan.
3. When choosing "**Every day**" as your reboot plan, the "**Weekday**" will be grayed out (disabled), which means **Every day** will auto reboot at the time that you schedule.

■ Example of how to configure **Schedule Reboot**. Please take the following steps:

Before configured schedule reboots, please ensure the Internet connection is accessible and the GMT time is configured correctly according to **NTP Settings** page.

Step 1. Select the Schedule Reboot Setting checkbox.

Step 2. Enter the Reboot Time (24-hour format) to enable this function to take effect. For example, if you want this function to work at 23:00 every Sunday, choose "Weekday" in the Reboot Plan field.

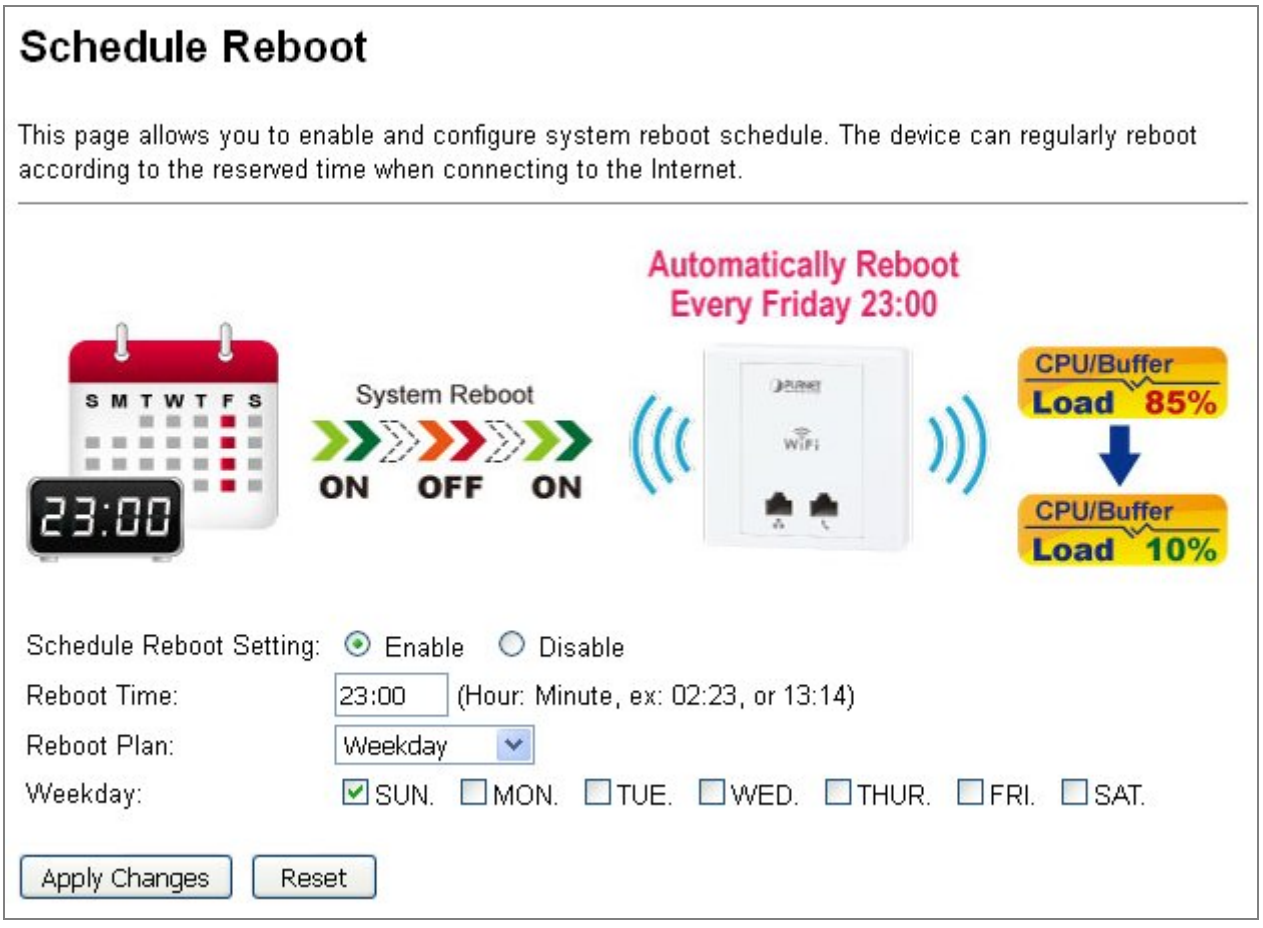


Figure 5-51 Schedule Reboot - Example

Step 3. Click "**Apply Changes**" to take this function effect.

5.5.6 LOG

Choose menu "**Management → LOG**" to configure the settings of system log. You can check the box of the items you want to record it in the log. After the configuration, please click "**Apply**" to save the settings.

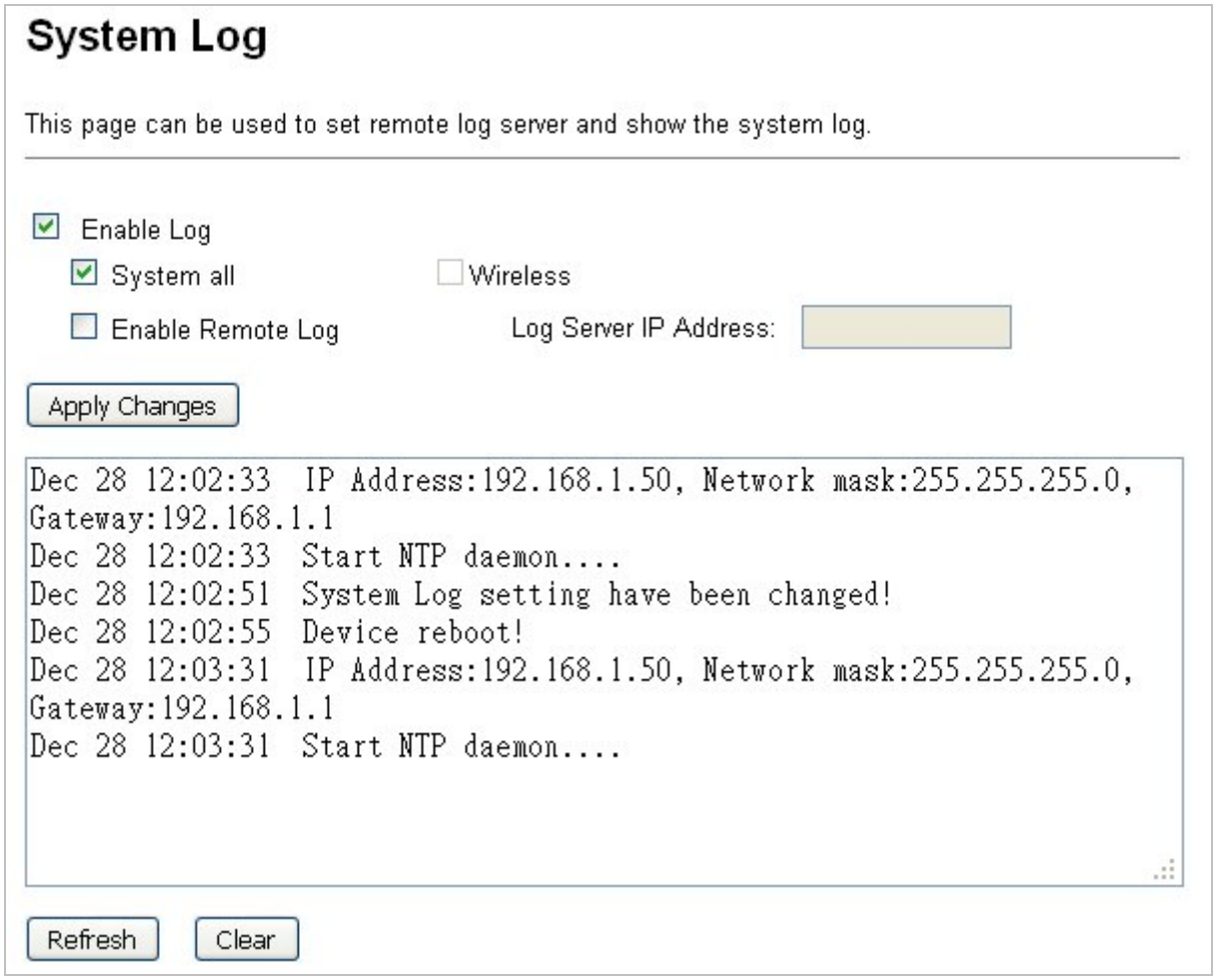


Figure 5-52 System Log

The page includes the following fields:

Object	Description
Enable Log	Check to enable log function.
System all	Check this option to display all the system logs.
Wireless	Check this option to display only the logs related to wireless module.
Enable Remote Log	Enable this option if you have a syslog server currently running on the LAN and wish to send log messages to it.
Log Server IP Address	Enter the LAN IP address of the Syslog Server.
Refresh	Click this button to update the log.
Clear	Click this button to clear the current log.

5.5.7 Upgrade Firmware

This page allows you to upgrade the Access Point firmware to new version. Please note, do not power off the device during the upload because it may crash the system.

Choose menu "**Management → Upgrade Firmware**" to upgrade the firmware of the WNAP-W2201A. Select the new firmware file downloaded from the PLANET website and then click "**Upload**" to upgrade it.

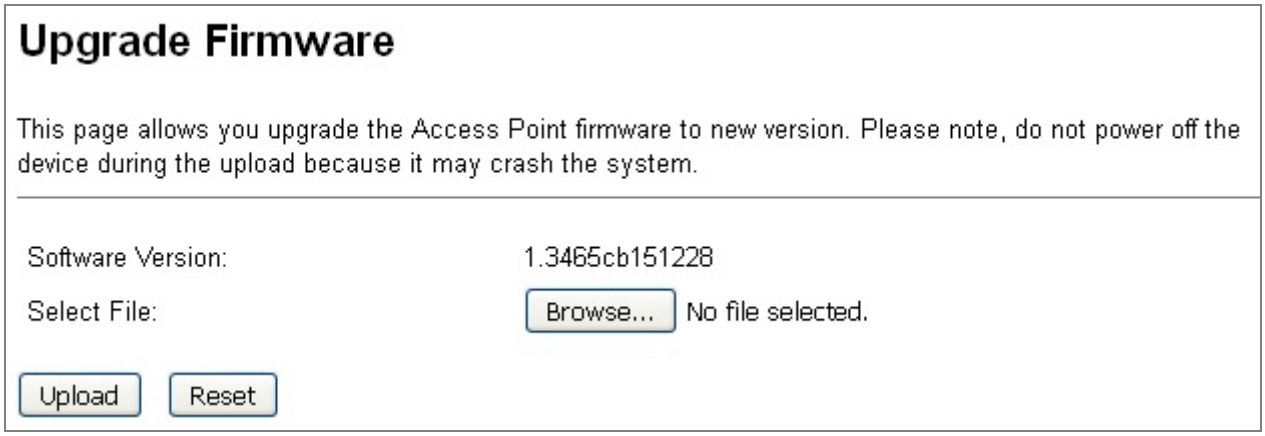


Figure 5-53 Upgrading Firmware

The page includes the following fields:

Object	Description
Select File	Browse and select file you want to upgrade and press Upload to perform upgrade. **Please wait till the related information is shown on the screen after upgrade is finished.**

Note

Do not disconnect the wireless AP from your management PC (the PC you use to configure the device) or power off it during the upgrade process; otherwise, it may be permanently damaged. The wireless AP will restart automatically after the upgrade process completes in several minutes.

5.5.8 Reload Settings

Choose menu "**Management → Reload Settings**" to back up or reset the configuration of the WNAP-W2201A.

Once you have configured the Wireless AP the way you want it, you can save these settings to a configuration file on your local hard drive that can later be imported to your Wireless AP in case the device is restored to factory default settings.

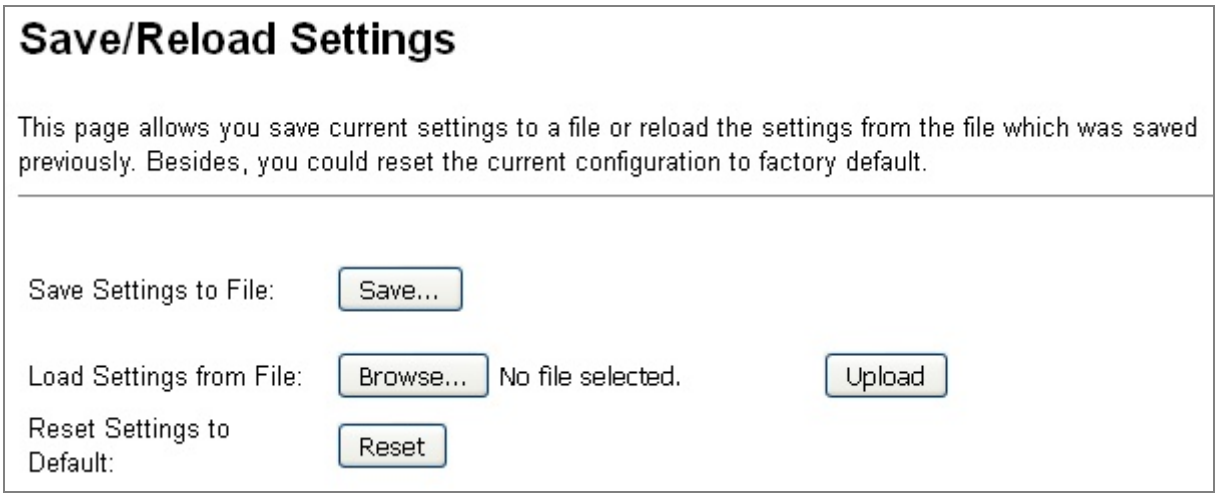


Figure 5-54 Save/Reload Settings

The page includes the following fields:

Object	Description
Save Settings to File	Click "**Save…**" to back up the configuration of the WNAP-W2201A and then save the "config.dat" in your computer.
Load Settings from File	Select the configuration file of the WNAP-W2201A and then click "**Upload**" to reload the configuration back into the WNAP-W2201A.
Reset Settings to Default	Click "**Reset**" to reset all settings of the WNAP-W2201A to factory default. **Factory Default Settings:** User Name: **admin** Password: **admin** IP Address: **192.168.1.253** Subnet Mask: **255.255.255.0** Default Gateway: **192.168.1.254** DHCP: **Client** SSID: **PLANET_XXXX ("X" means the last 4 digits of the MAC address)** Wireless Security: **None**

Note

To activate your settings, you need to reboot the wireless AP after you reset it.

5.5.9 Password

To ensure the wireless AP's security, you will be asked for your password when you access the wireless AP's Web-based utility. The default user name and password are "admin". This page will allow you to add or modify the user name and password.

Choose menu "**Management → User Management**" to change the user name and password which is inputted to access the web UI of the WNAP-W2201A.

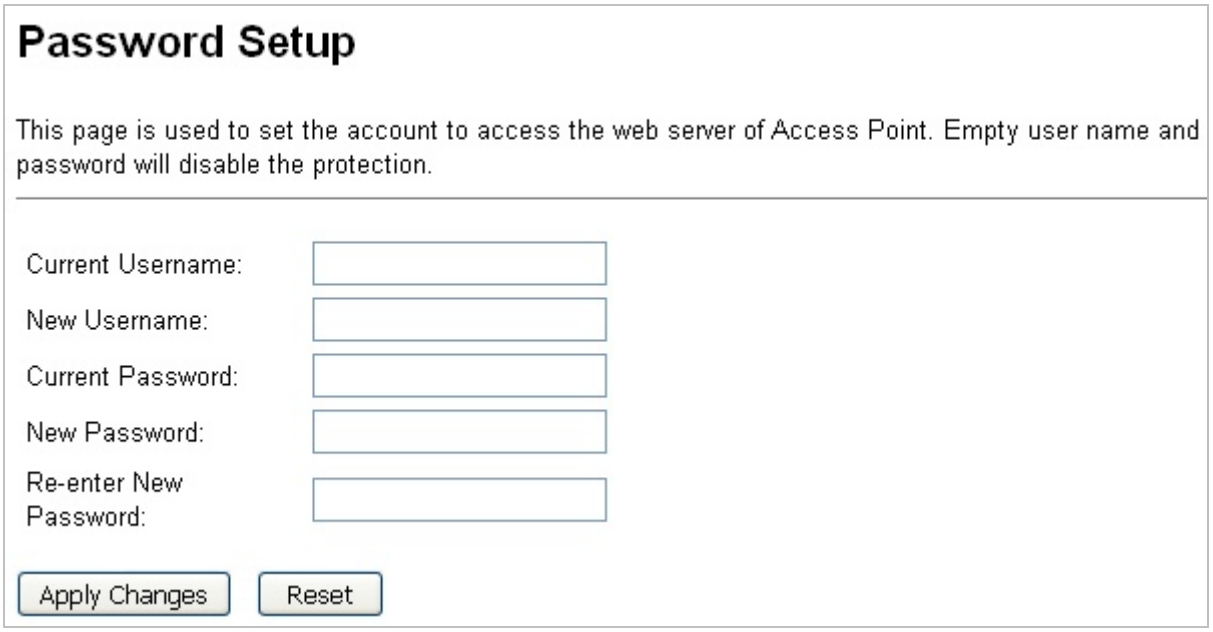


Figure 5-55 Password Setup

The page includes the following fields:

Object	Description
Current Username	Enter current user name.
New Username	Input user name for this user.
Current Password	Enter current password.
New Password	Input password for this user.
Re-enter New Password	Confirm password again.

Note

For the sake of security, it is highly recommended that you change default login password and user name.

5.5.10 LED Control

This section provides the LED control function, which allows you to control the LED **On**, **Off** or **Blink**.

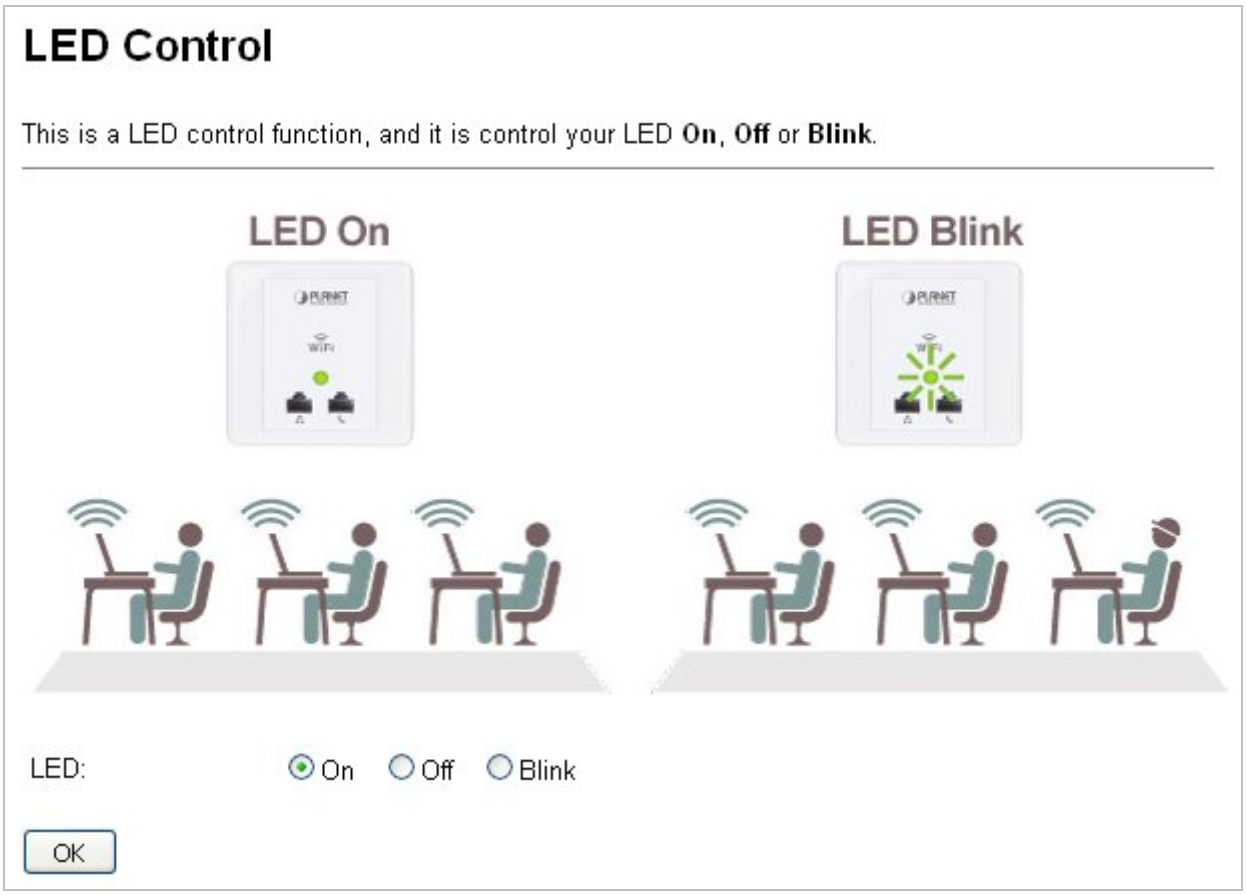


Figure 5-56 LED Control

The page includes the following fields:

Object	Description
LED	The LED to detect and identify the AP. 1) **On**: The LED is on. 2) **Off**: The LED is off. 2) **Blink**: The LED blinks continuously.

5.5.11 Logout

To log out the WNAP-W2201A, please select “**Logout**” from the left-side menu.

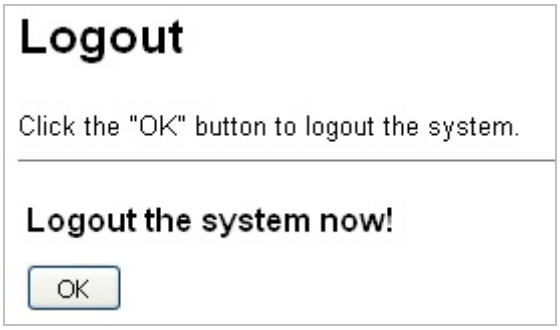


Figure 5-57 Logout

5.5.12 Reboot

To reboot the WNAP-W2201A, please select “**Reboot**” from the left-side menu.

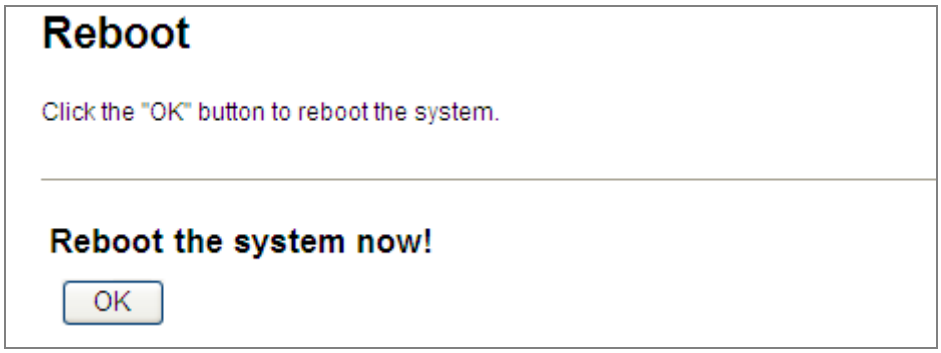


Figure 5-58 Reboot

Chapter 6. Quick Connection to a Wireless Network

In the following sections, the **default SSID** of the WNAP-W2201A is configured to "**default**".

6.1 Windows XP (Wireless Zero Configuration)

Step 1: Right-click on the **wireless network icon** displayed in the system tray

Figure 6-1 System Tray – Wireless Network Icon

Step 2: Select [**View Available Wireless Networks**]

Step 3: Highlight and select the wireless network (SSID) to connect

(1) Select SSID [default]

(2) Click the [**Connect**] button

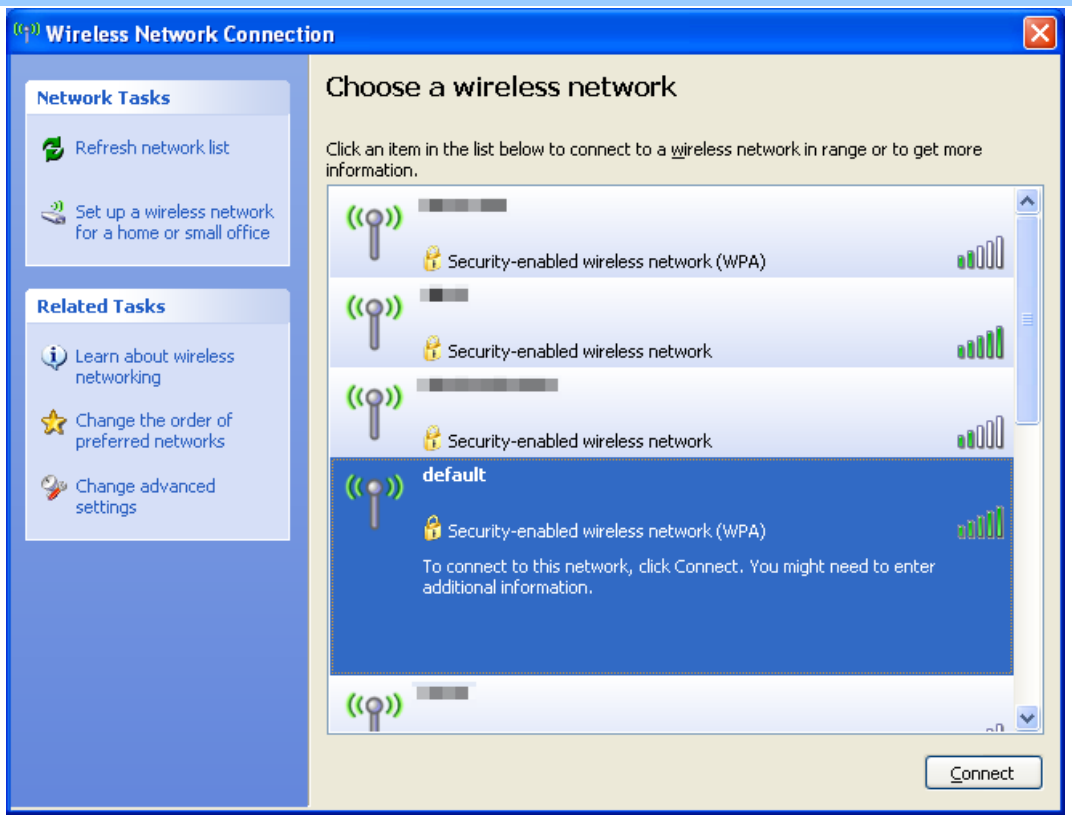


Figure 6-2 Choosing a Wireless Network

Step 4: Enter the **encryption key** of the wireless AP

(1) The Wireless Network Connection box will appear

(2) Enter the encryption key that is configured in section 5.4.4

(3) Click the [Connect] button

Figure 6-3 Entering the Network Key

Step 5: Check if "**Connected**" is displayed

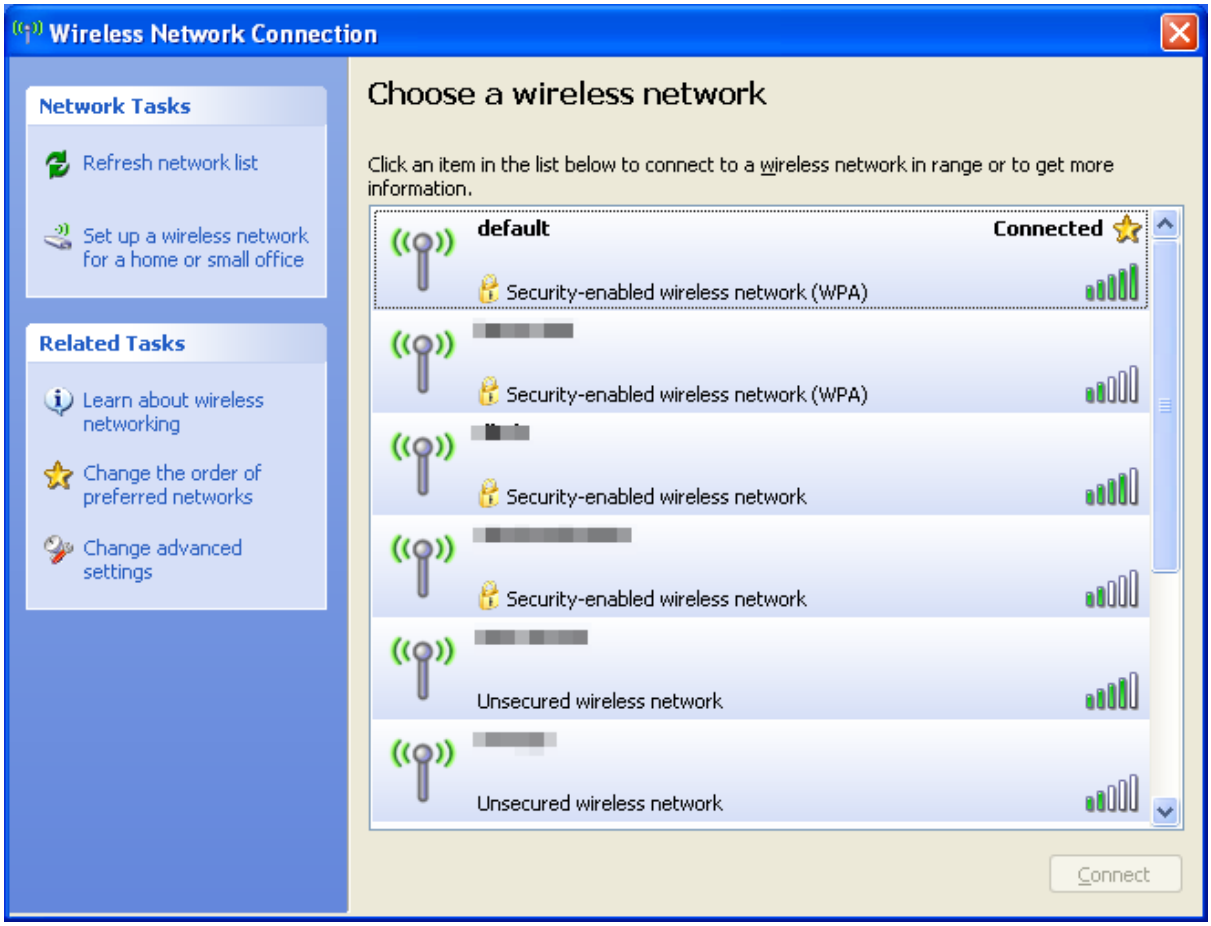


Figure 6-4 Choosing a Wireless Network -- Connected

Some laptops are equipped with a “Wireless ON/OFF” switch for the internal wireless LAN. Make sure the hardware wireless switch is switched to “ON” position.

6.2 Windows 7 (WLAN AutoConfig)

WLAN AutoConfig service is built-in in Windows 7 that can be used to detect and connect to wireless network. This built-in wireless network connection tool is similar to wireless zero configuration tool in Windows XP.

Step 1: Right-click on the **network icon** displayed in the system tray

Figure 6-5 Network Icon

Step 2: Highlight and select the wireless network (SSID) to connect

(1) Select SSID [**default**]

(2) Click the [**Connect**] button

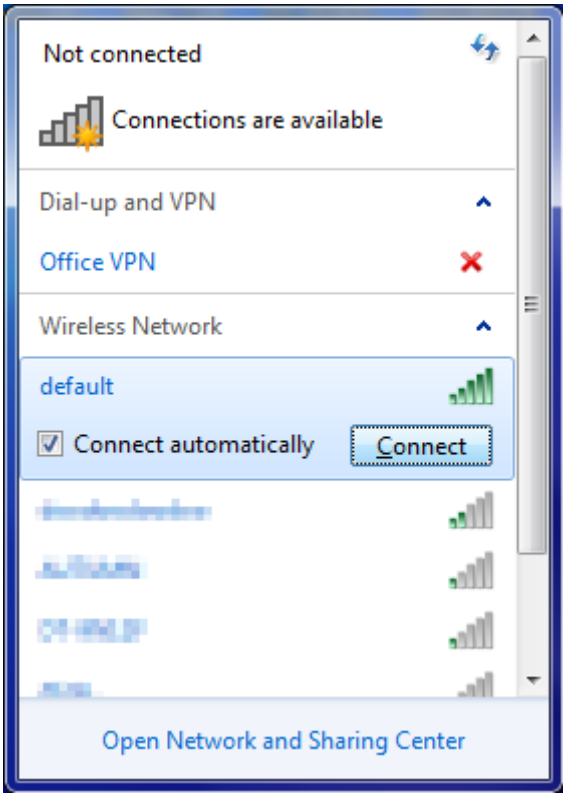


Figure 6-6 WLAN AutoConfig

Note

If you will be connecting to this Wireless AP in the future, check [**Connect automatically**].

Step 4: Enter the **encryption key** of the wireless AP

(1) The Connect to a Network box will appear

(2) Enter the encryption key that is configured in section 5.4.4

(3) Click the [OK] button

Figure 6-7 Typing the Network Key

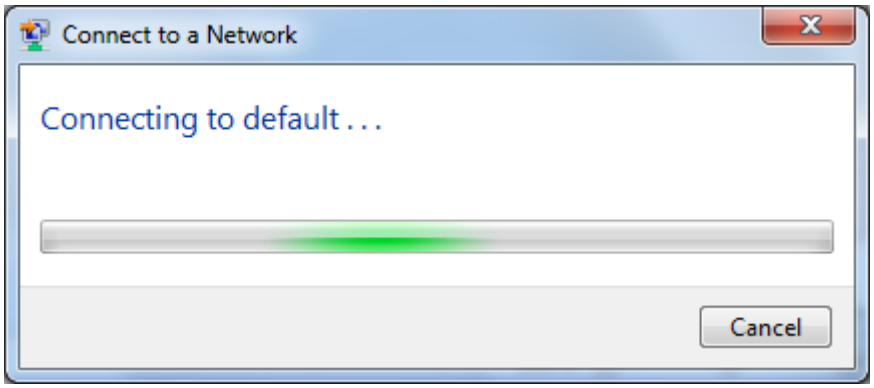


Figure 6-8 Connecting to a Network

Step 5: Check if "**Connected**" is displayed

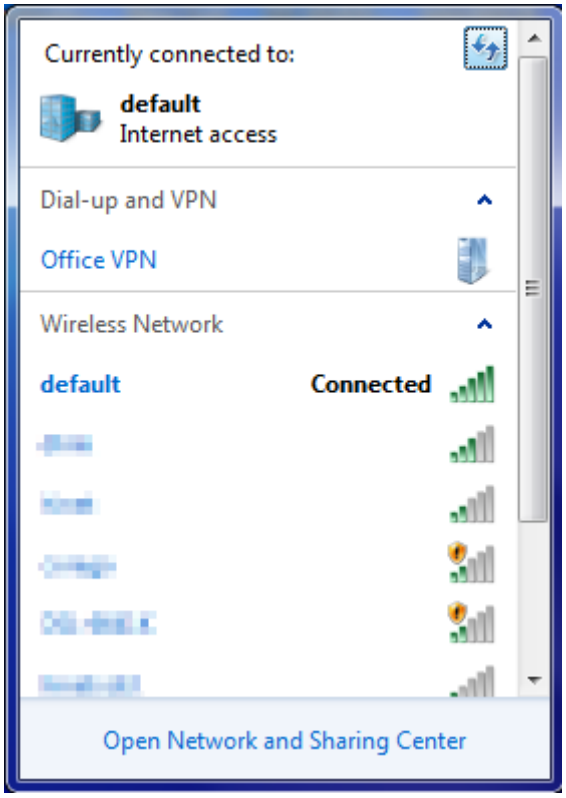


Figure 6-9 Connected to a Network

6.3 Mac OS X 10.x

In the following sections, the default SSID of the WNAP-W2201A is configured to “default”.

Step 1: Right-click on the **network icon** displayed in the system tray

The AirPort Network Connection menu will appear

Figure 6-10 Mac OS – Network Icon

Step 2: Highlight and select the wireless network (SSID) to connect

(1) Select and SSID [**default**]

(2) Double-click on the selected SSID

Figure 6-11 Highlighting and Selecting the Wireless Network

Step 4: Enter the **encryption key** of the wireless AP

(1) Enter the encryption key that is configured in section 5.4.4

(2) Click the [OK] button

Figure 6-12 Enter the Password

Note

If you will be connecting to this Wireless AP in the future, check [**Remember this network**].

Step 5: Check if the AirPort is connected to the selected wireless network.

If "Yes", then there will be a "check" symbol in front of the SSID.

Figure 6-13 Connected to the Network

There is another way to configure the MAC OS X wireless settings:

Step 1: Click and open the [**System Preferences**] by going to **Apple** > **System Preference** or **Applications**

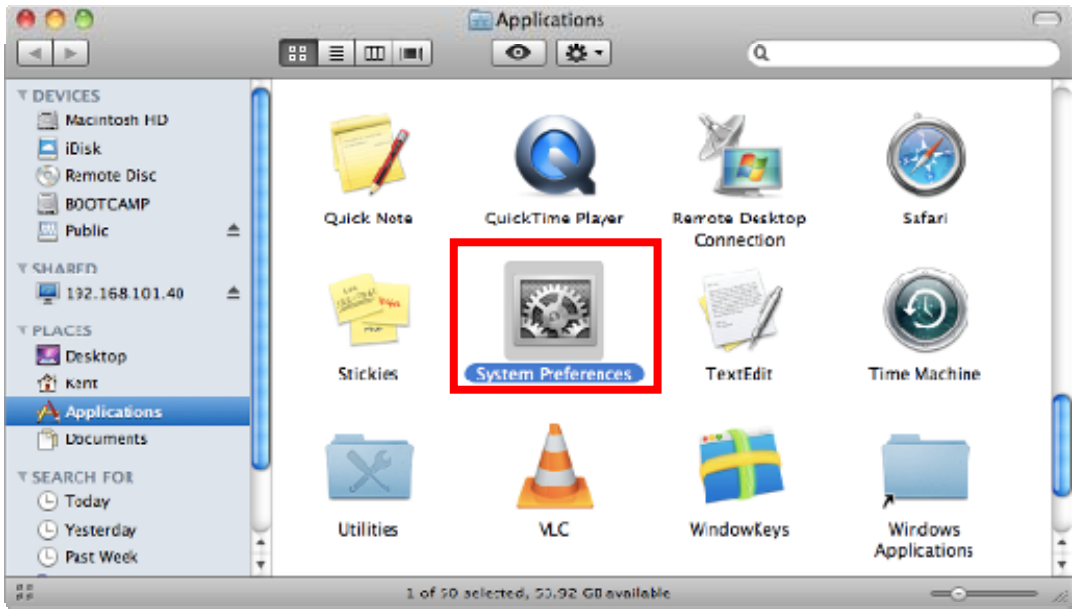


Figure 6-14 System Preferences

Step 2: Open **Network Preference** by clicking on the [**Network**] icon

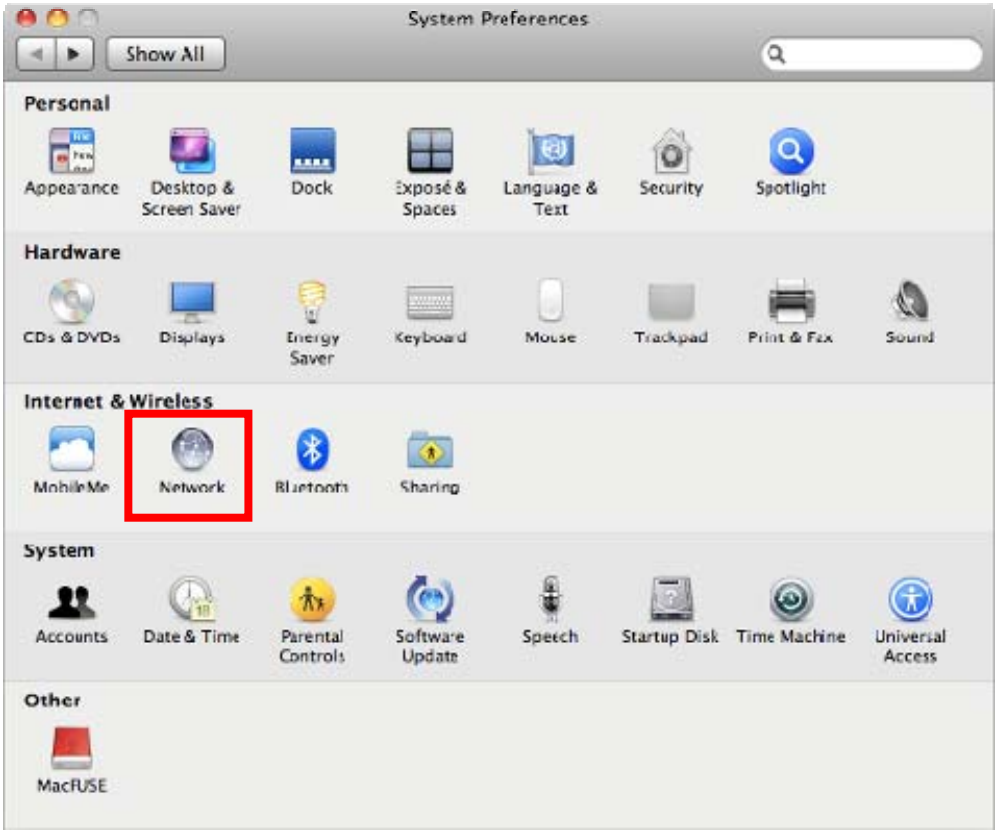


Figure 6-15 System Preferences -- Network

Step 3: Check Wi-Fi setting and select the available wireless network

(1) Choose the **AirPort** on the left-menu (make sure it is ON)

(2) Select Network Name [**default**] here

If this is the first time to connect to the Wireless AP, it should show “Not network selected”.

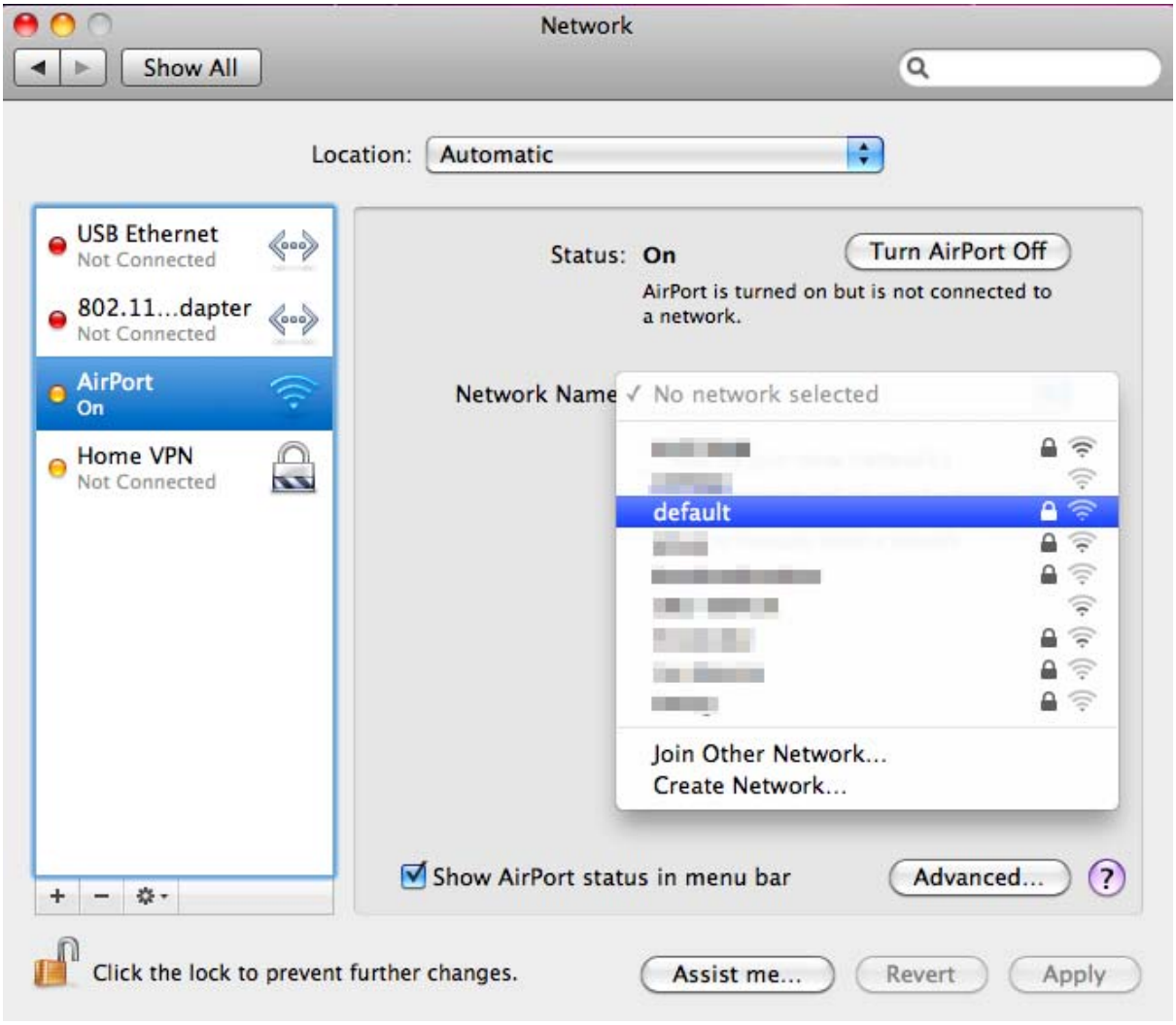


Figure 6-16 Selecting the Wireless Network

6.4 iPhone/iPod Touch/iPad

In the following sections, the **default SSID** of the WNAP-W2201A is configured to "**default**".

Step 1: Tap the [**Settings**] icon displayed in the home screen

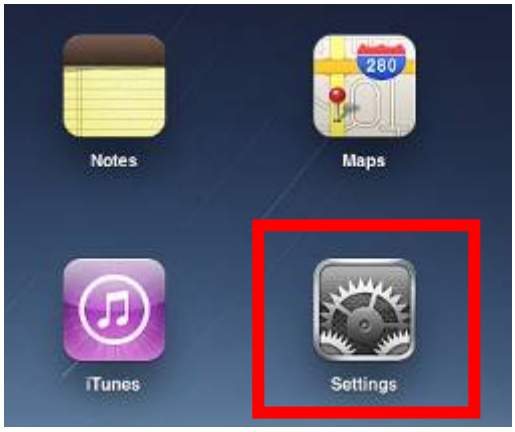


Figure 6-17 iPhone – Settings icon

Step 2: Check Wi-Fi setting and select the available wireless network

(1) Tap [**General**] \ [**Network**]

(2) Tap [**Wi-Fi**]

If this is the first time to connect to the Wireless AP, it should show "Not Connected".

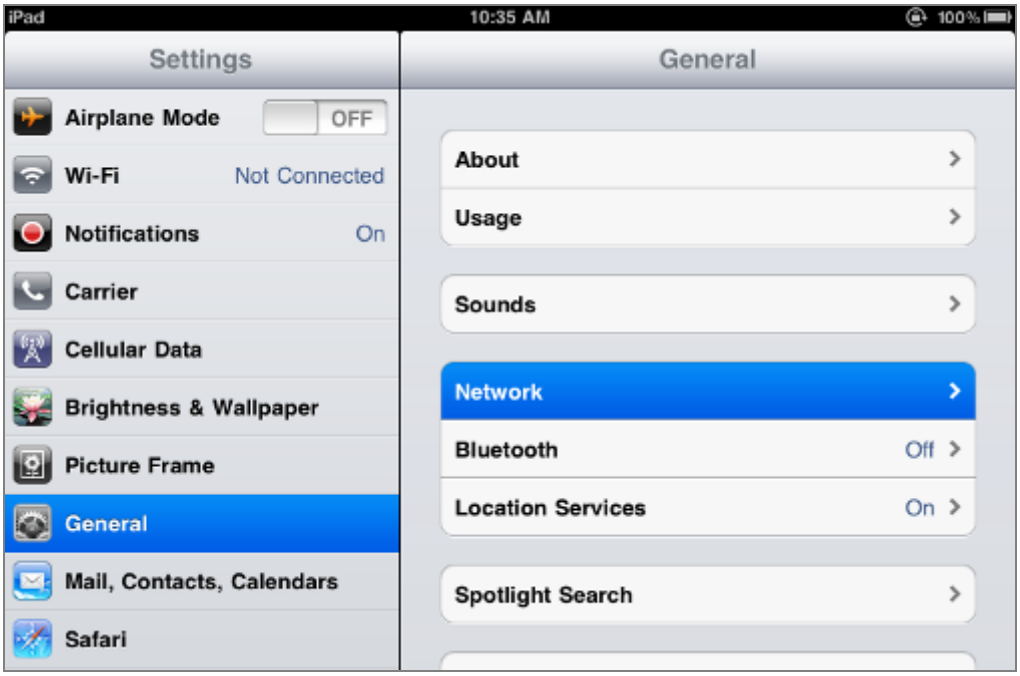


Figure 6-18 Wi-Fi Setting

Figure 6-19 Wi-Fi Setting – Not Connected

Step 3: Tap the target wireless network (SSID) in "**Choose a Network…**"

(1) Turn on Wi-Fi by tapping "**Wi-Fi**"

(2) Select SSID [**default**]

Figure 6-20 Turning on Wi-Fi

Step 4: Enter the **encryption key** of the Wireless AP

(1) The password input screen will be displayed

(2) Enter the encryption key that is configured in section 5.4.4

(3) Tap the [**Join**] button

Figure 6-21 iPhone -- Entering the Password

Step 5: Check if the device is connected to the selected wireless network.

If “Yes”, then there will be a “check” symbol in front of the SSID.

Figure 6-22 iPhone -- Connected to the Network

Appendix A: Planet Smart Discovery Utility

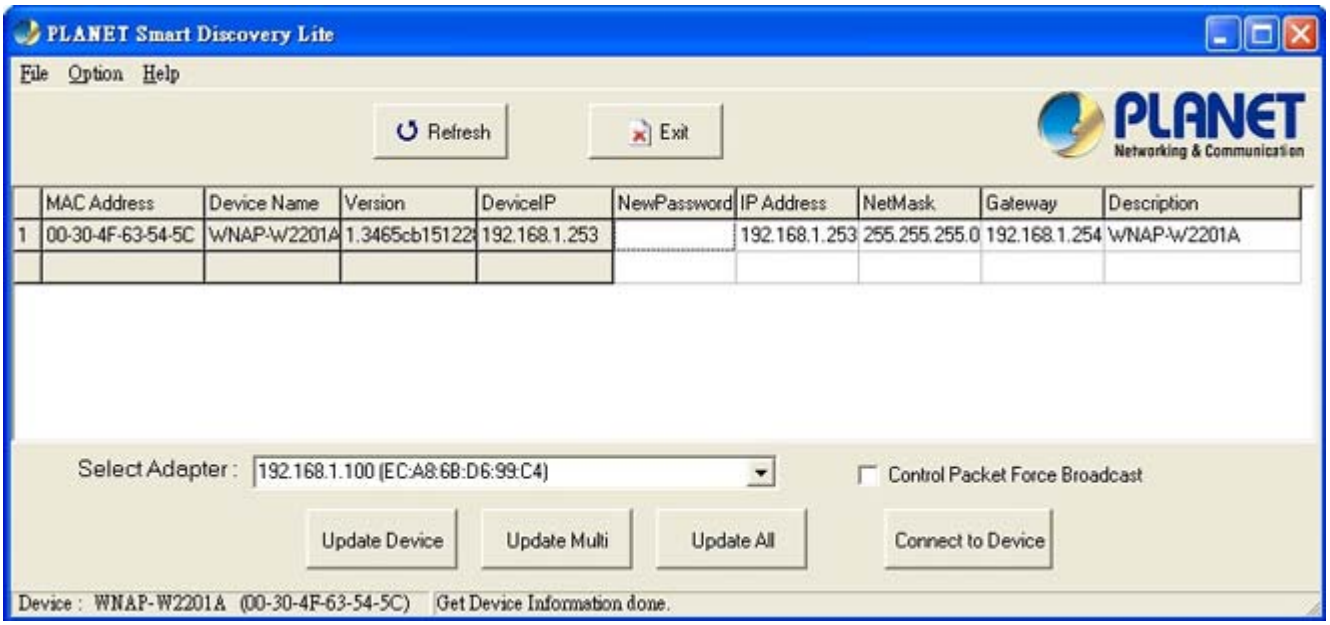
To easily list the WNAP-W2201A in your Ethernet environment, the Planet Smart Discovery Utility is an ideal solution. The utility is available at: http://www.planet.com.tw/en/product/images/48590/Planet_Utility.zip

The following installation instructions guide you to running the Planet Smart Discovery Utility.

Step 1: Deposit the **Planet Smart Discovery Utility** in administrator PC.

Step 2: Extract and run this utility and the following screen appears.

Step 3: Press **"Refresh"** for the current connected devices in the discovery list as shown in the following screen:



Step 3: Press **"Connect to Device"** and then the Web login screen appears.

Note

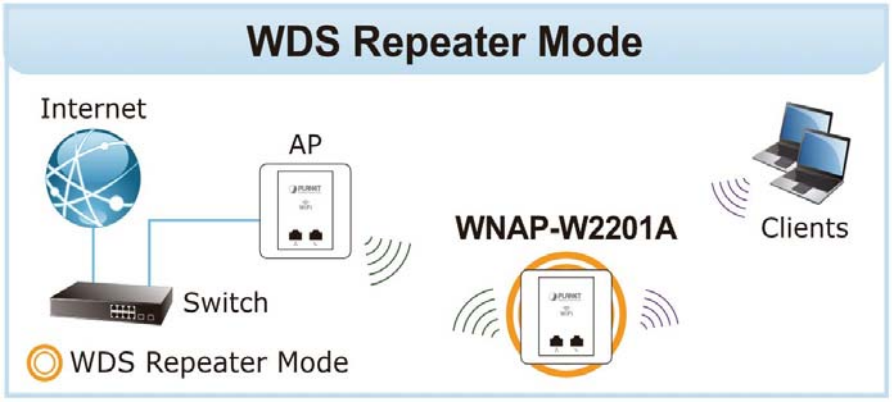
The fields in white background can be modified directly and then you can apply the new setting by clicking "**Update Device**".

Appendix B: FAQs

Q1: How to set up the WDS Repeater Connection

In this case, we use wireless to connect to the root AP and then repeat the wireless signal by using the wireless interface to let the wireless clients surf the internet.

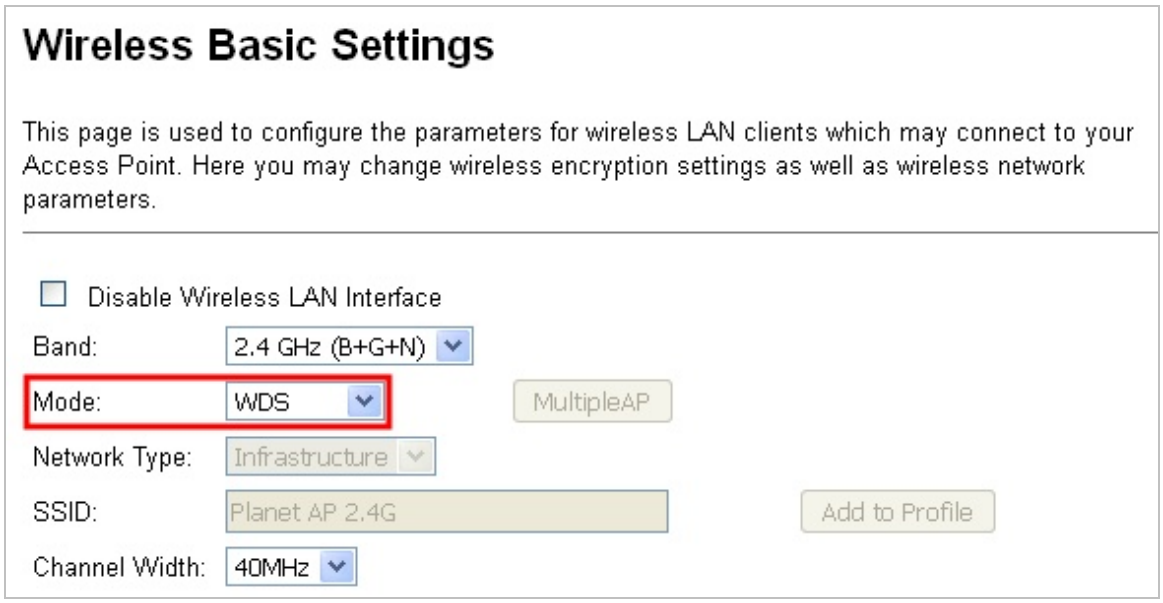
Topology:



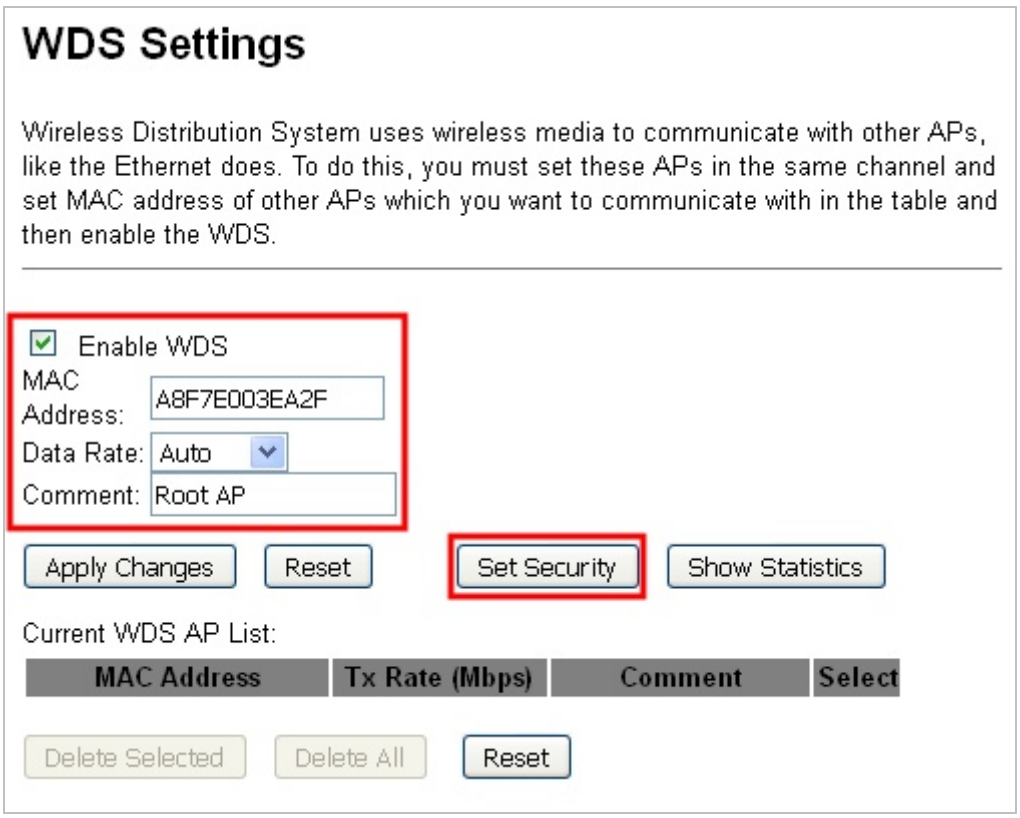
Note

1. Before configuration, please ensure the root AP is already connected to the internet and the DHCP server is enabled to let it able to assign IP address to the connected clients.
2. Please ensure there is no IP conflict in the existing network. Otherwise, please re-configure the WNAP-W2201A using other IP addresses which should be in the same network segment. The default IP address of the WNAP-W2201A is 192.168.1.253.

Step 1. In the WNAP-W2201A-1, go to "**WLAN → Basic Settings**" to configure wireless mode to "**WDS**" and then configure the channel to a fixed one. Click "**Apply Changes**" to take effect.

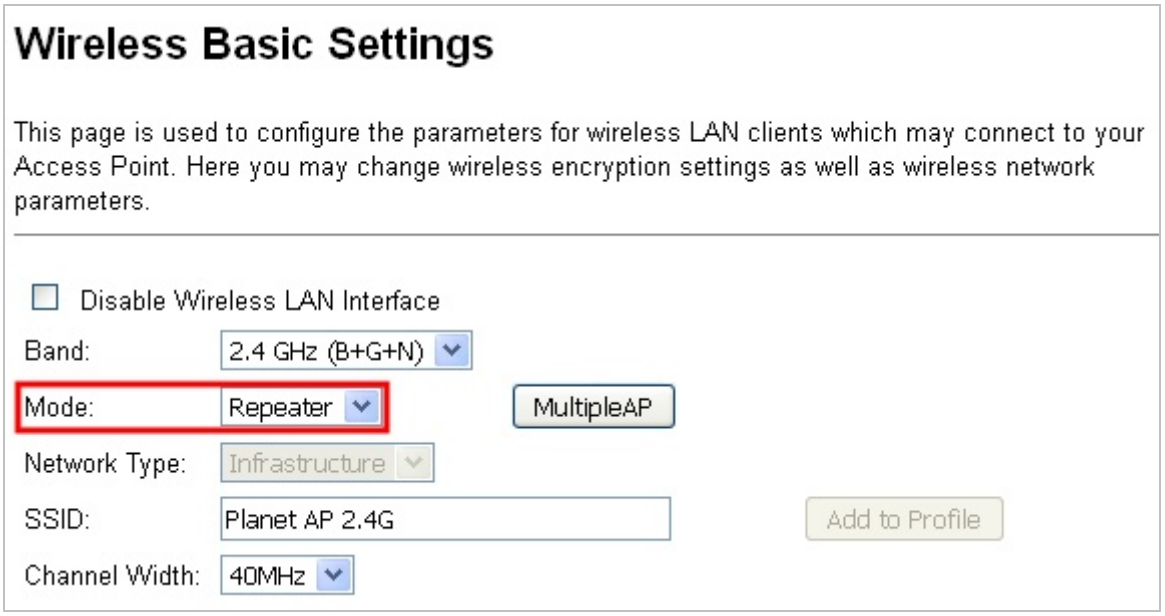


Step 2. Go to "**WLAN→ WDS Settings**" page to connect the root AP. Select "**Enable WDS**" and enter the MAC address of the repeater AP. Then, click "**Set Security**" to configure the security setting for the WDS connection. After finishing the configuration, click "**Apply Changes**" to take effect.

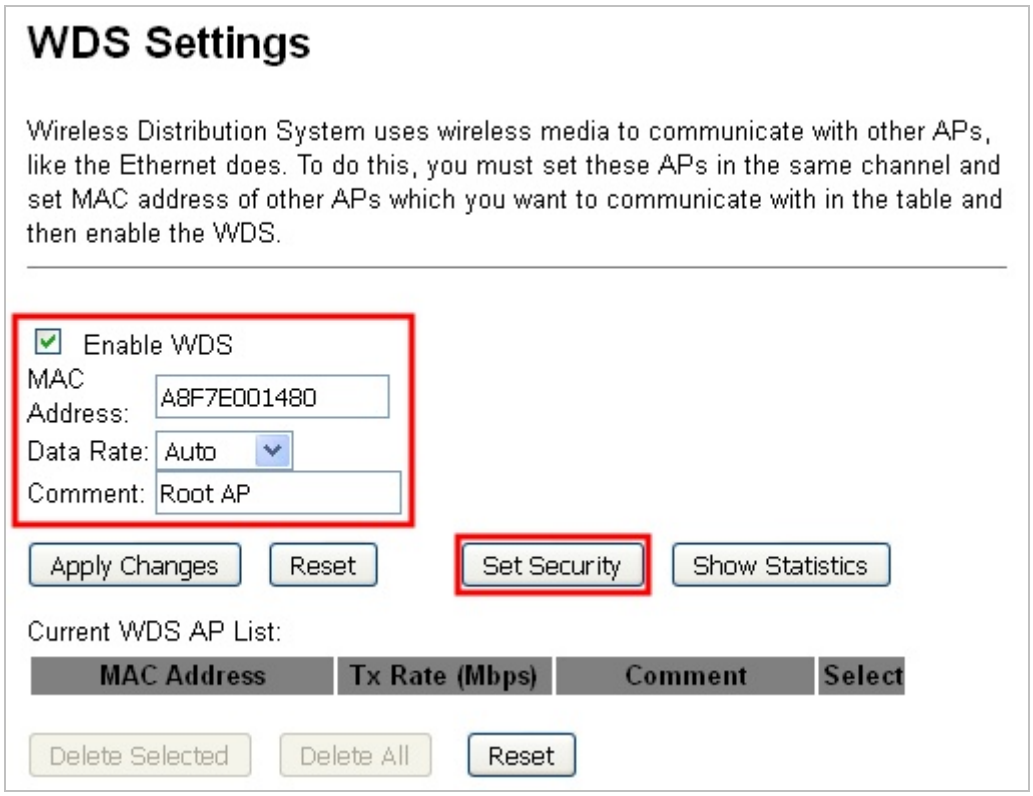


Step 3. In the WNAP-W2201A-2, go to "**WLAN → Basic Settings**" to configure wireless mode to "**Repeater**" and then configure the channel to a fixed one which must be the same as the root AP. Click "**Apply Changes**" to take effect.

※ The root AP should be the same model (WNAP-W2201A) in WDS mode; otherwise, the connection might not be able to be established due to the incompatibility.

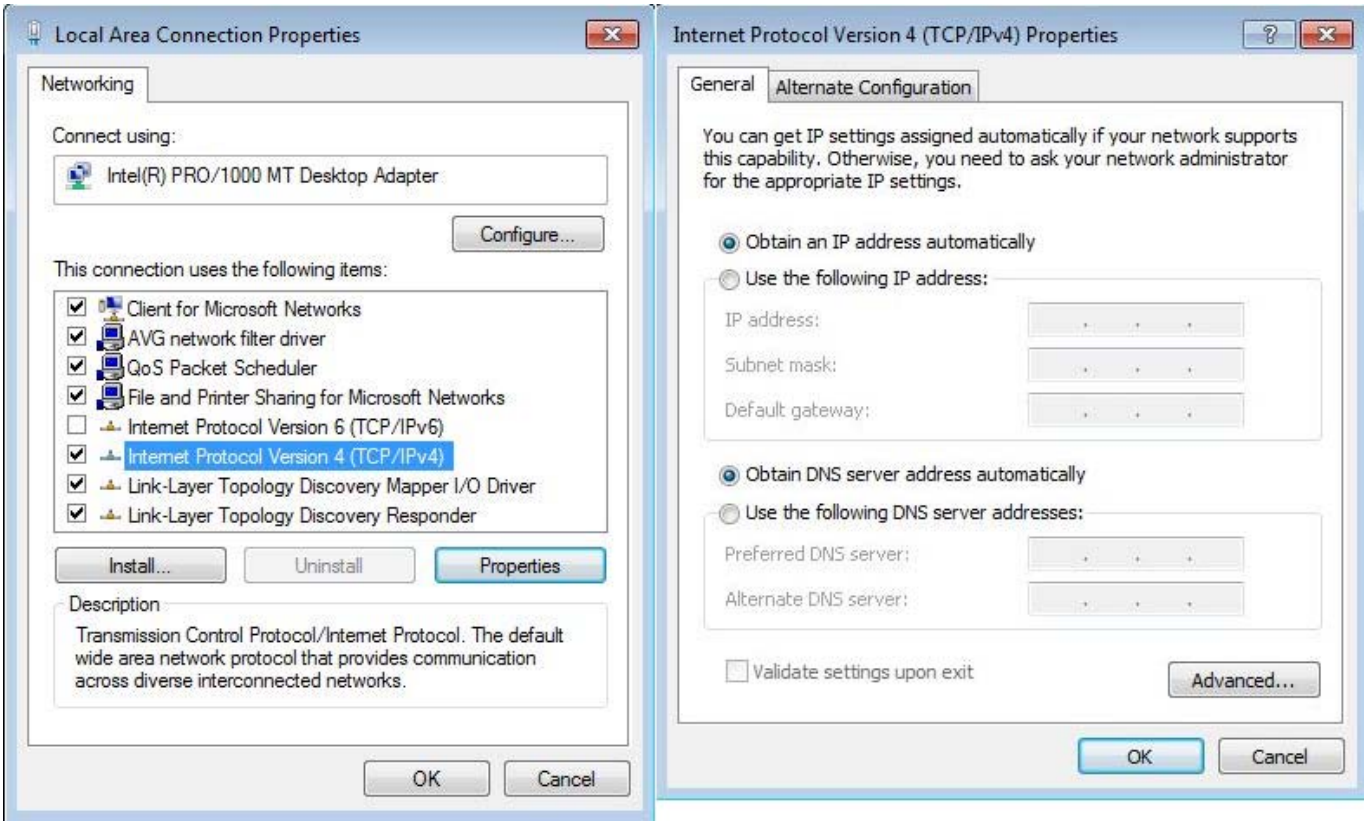


Step 4. Go to the "**WLAN → WDS Settings**" page to connect the root AP. Select "**Enable WDS**" and enter the MAC Address of the root AP. Then, click "**Set Security**" to configure the security setting as the same as the root AP. After finishing the configuration, click "**Apply Changes**" to take effect.

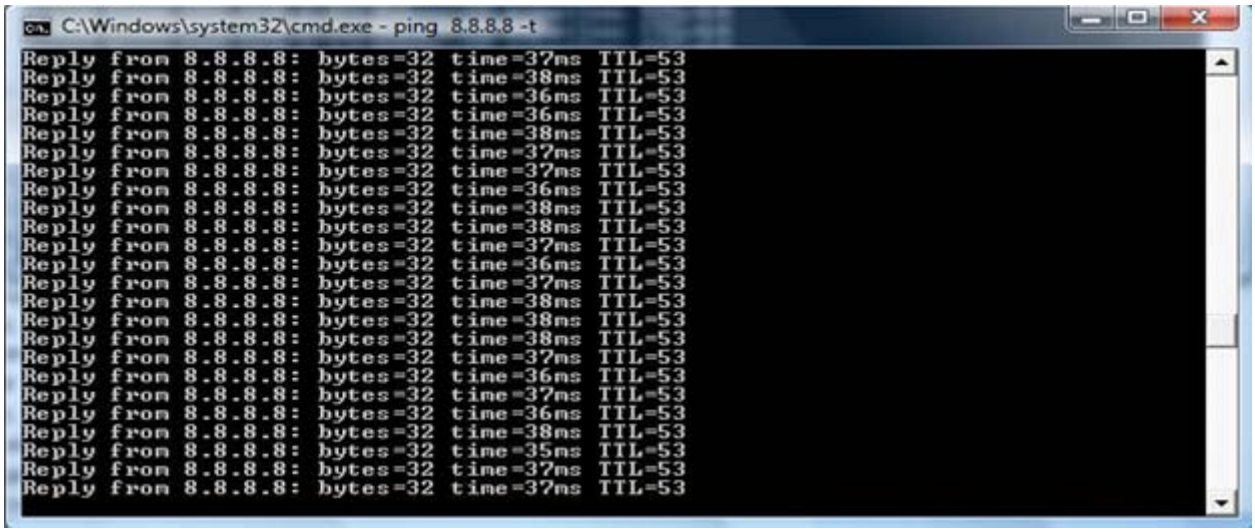


Step 5. After reboot, please go to "**WLAN → Security**" page to configure the repeater's security setting for wireless clients. Select the encryption method and enter the security key. Then, click "**Apply Changes**".

Step 6. In the laptop or PC connected to the WNAP-W2201A-2 by Ethernet cable, go to TCP/IP settings to modify it to "**Obtain an IP address automatically**".

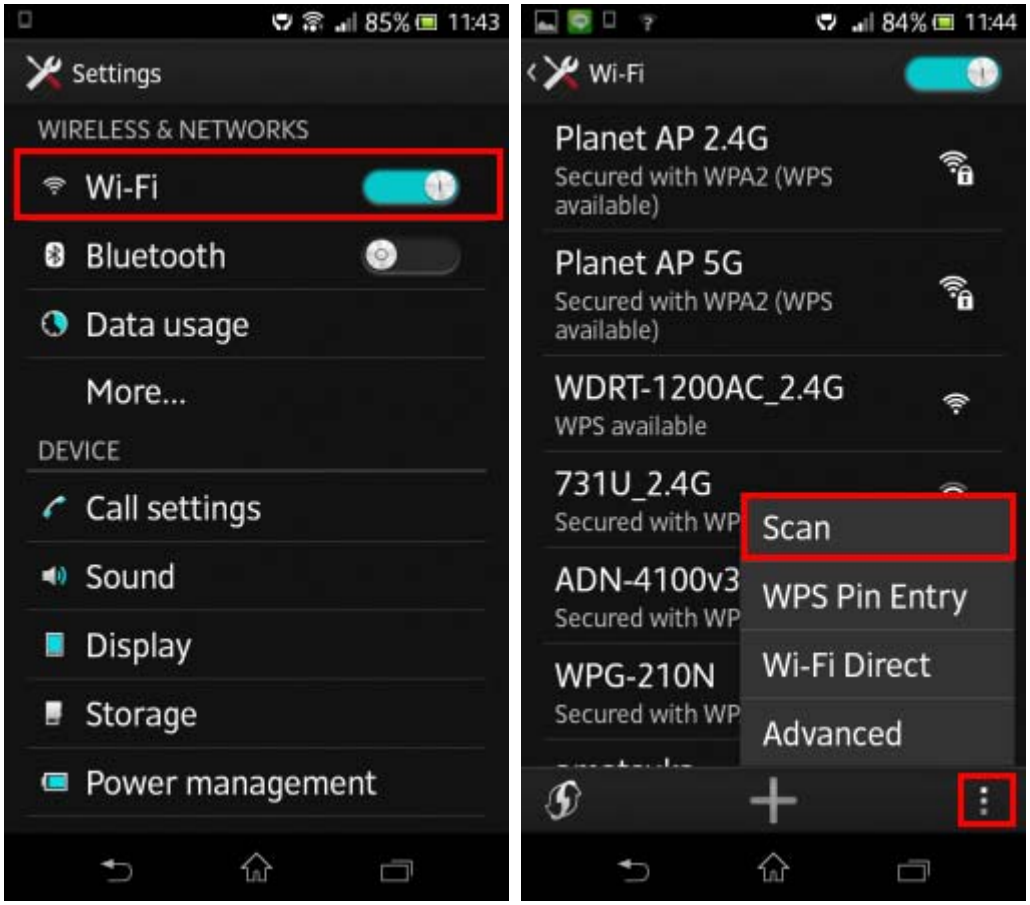


Step 7. Use the command line tool to ping the DNS (e.g. Google) to ensure the laptop or PC can access internet through the connection.

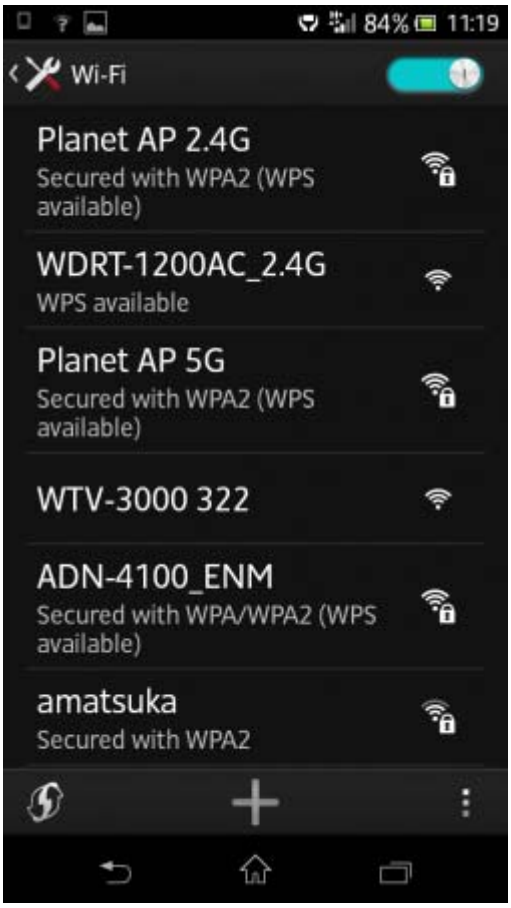


Step 8. In the Android Smart Phone, tap the [**Settings**] icon displayed in the home screen.

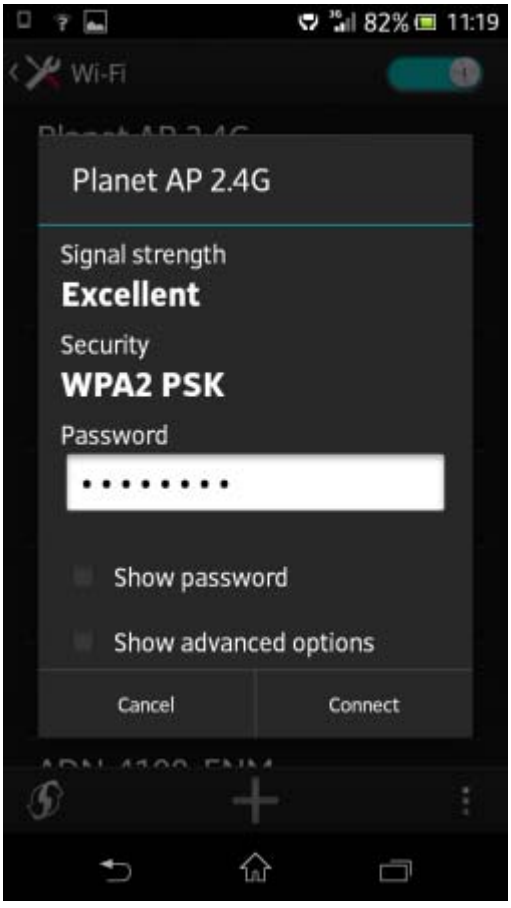
Step 9. Check Wi-Fi setting to view the available wireless network or tap the lower-right corner to re-scan the available wireless network.



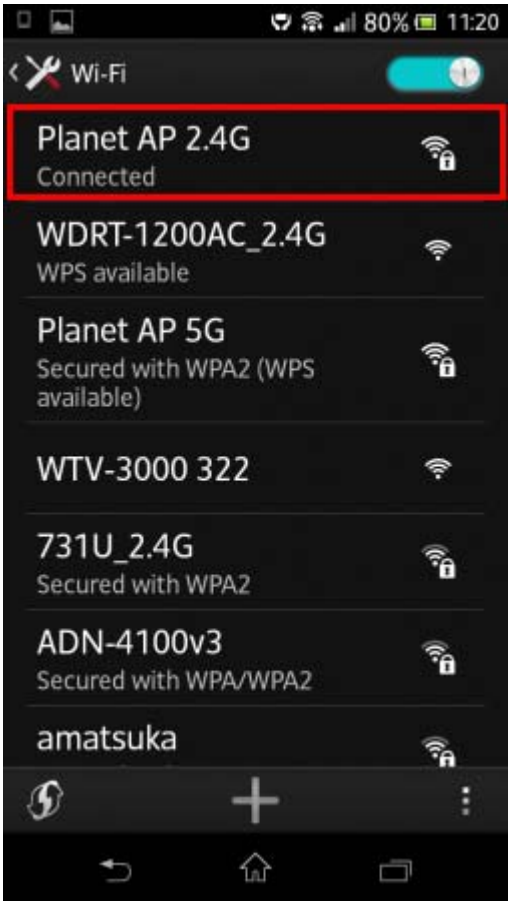
Step 10. Tap the target wireless network (SSID). In this case, the SSID is “Planet AP 2.4G”.



Step 11. Enter the **encryption key**, and then tap [**Connect**].



Step 12. Check if the device is connected to the selected wireless network.



Step 13. Now, you should be able to surf internet on the laptop through the WNAP-W2201A-2.

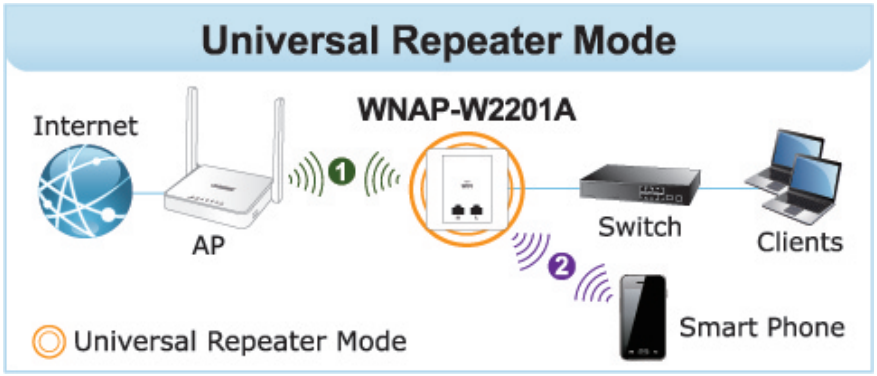
Note

For the wireless connection setup in other platforms (e.g., iPhone, iPad, laptop), please refer to the **Chapter 6. Quick Connection to a Wireless Network**.

Q2: How to set up the Universal Repeater Connection

In this case, we use wireless to connect to the root AP and then repeat the wireless signal by using the 2.4GHz wireless interface to let the 2.4GHz wireless clients surf the internet.

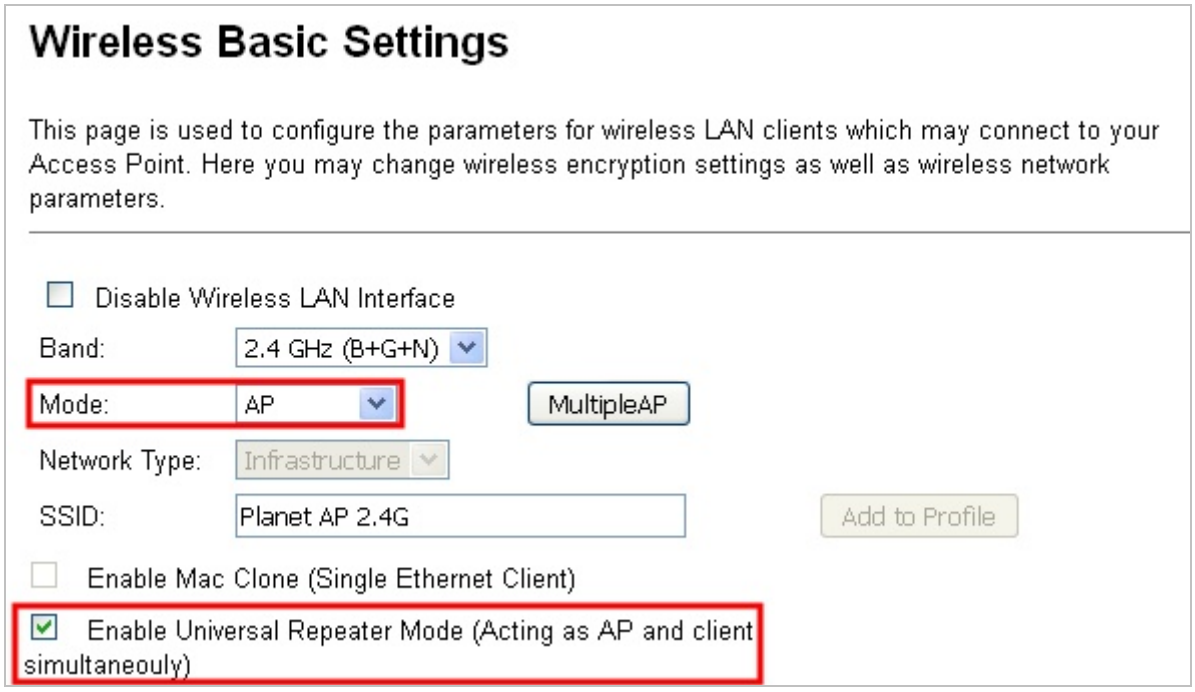
Topology:



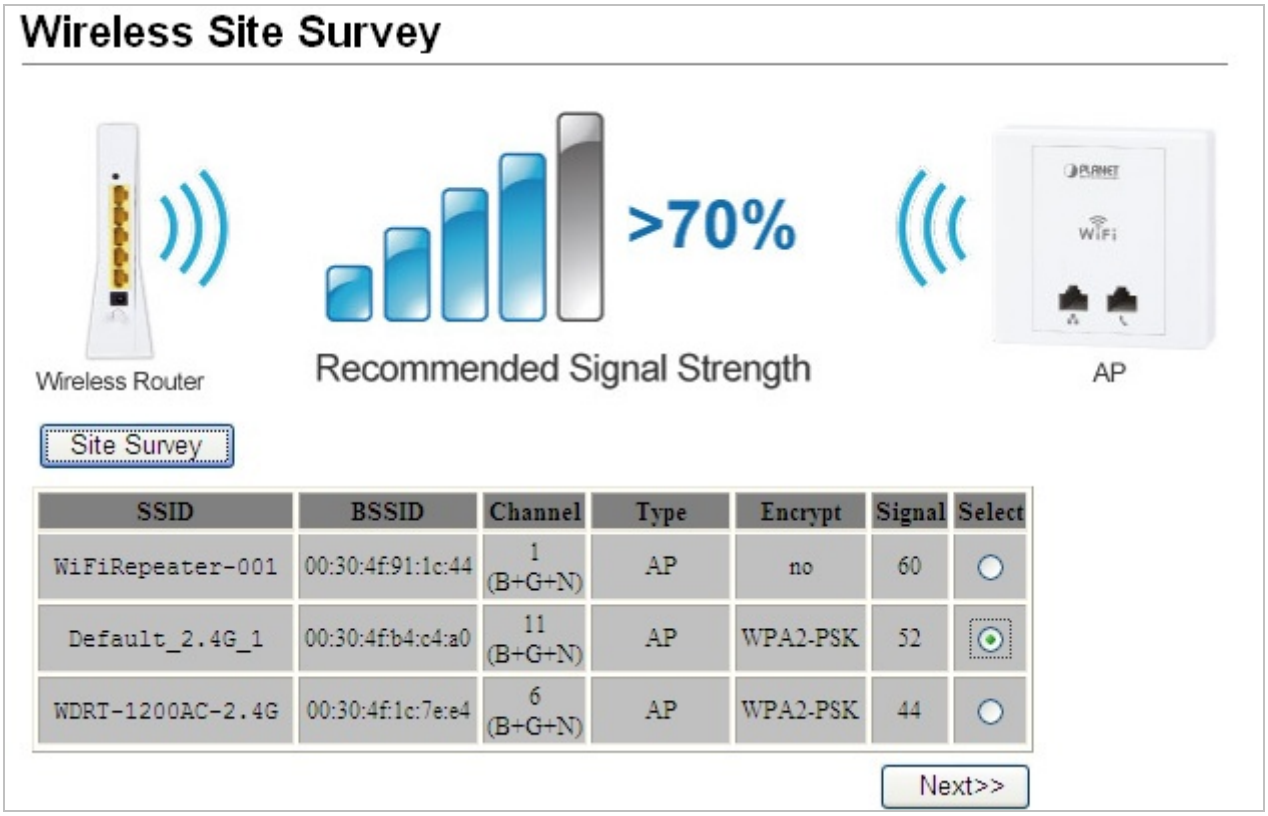
Note

1. Before configuration, please ensure the root AP is already connected to the internet and the DHCP server is enabled to let it able to assign IP address to the connected clients.
2. Please ensure there is no IP conflict in the existing network. Otherwise, please re-configure the WNAP-W2201A using other IP addresses which should be in the same network segment. The default IP address of the WNAP-W2201A is 192.168.1.253.

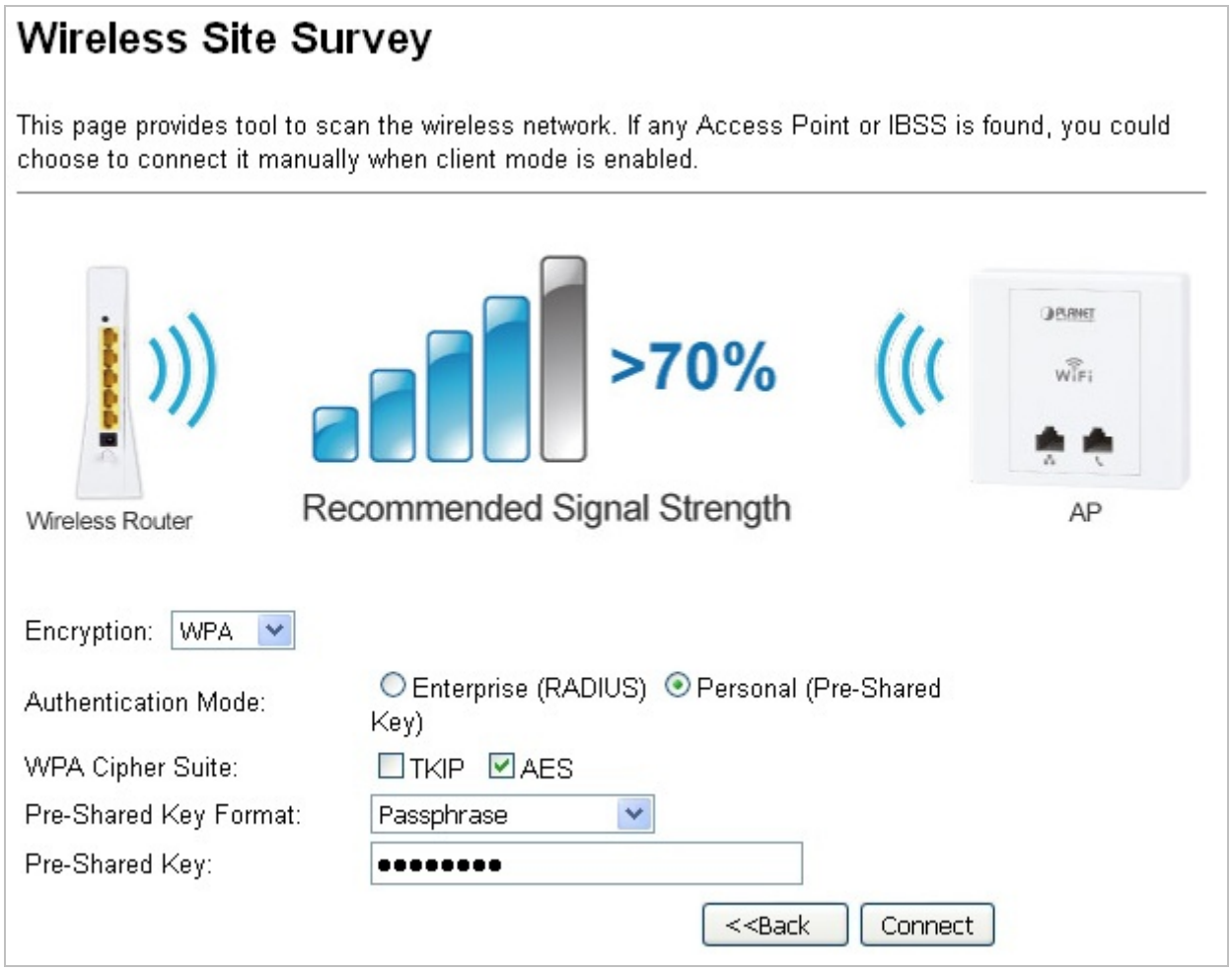
Step 1. In the WNAP-W2201A, go to "**WLAN → Basic Settings**" to configure wireless mode to "**AP**" and then check "**Enable Universal Repeater Mode (Acting as AP and client simultaneously)**". Click "**Apply Changes**" to take effect.



Step 2. Go to **Site Survey** (WLAN → Site Survey) page to find the root AP. Select the root AP that you want to repeat the signal and then click "**Next**".

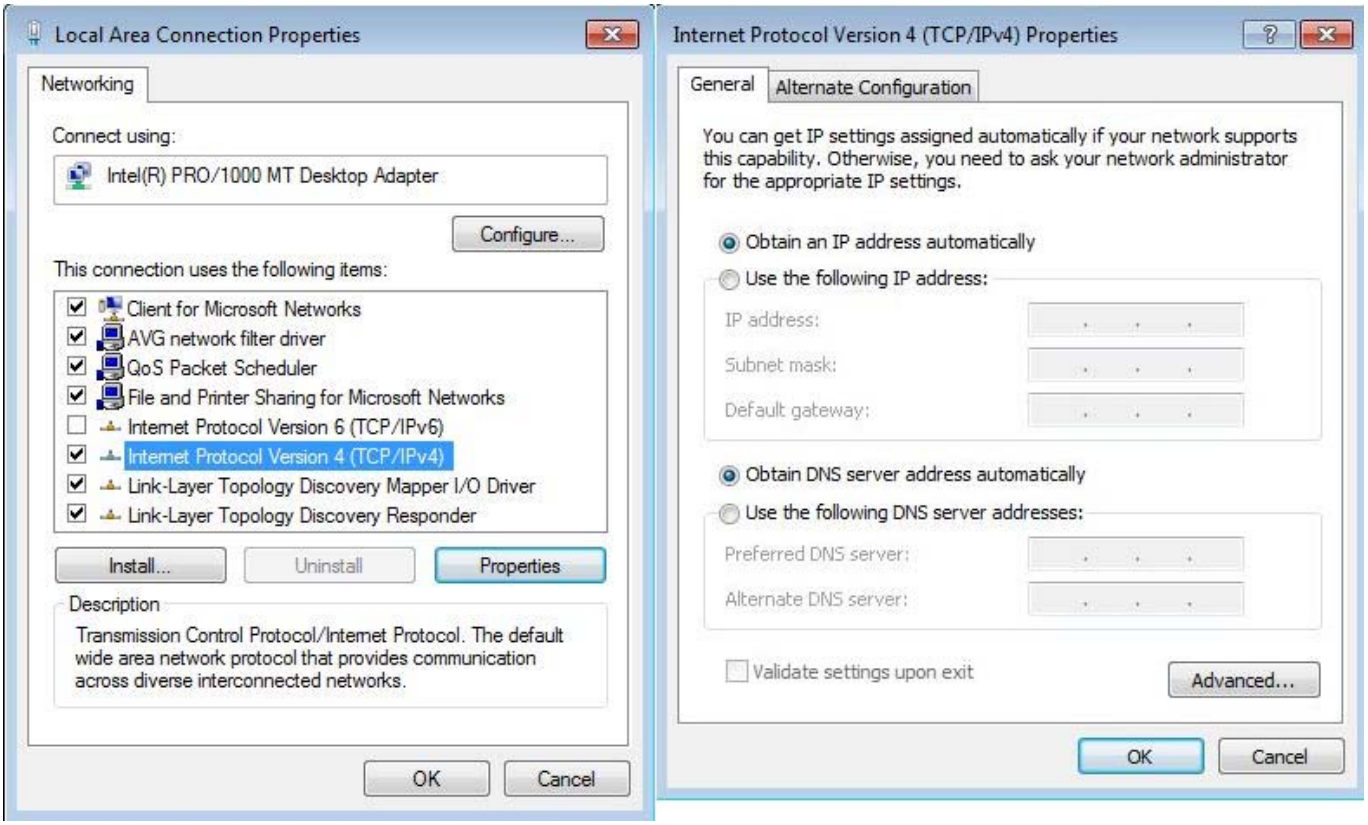


Step 3. Select the correct encryption method and enter the security key. Then click "**Connect**".

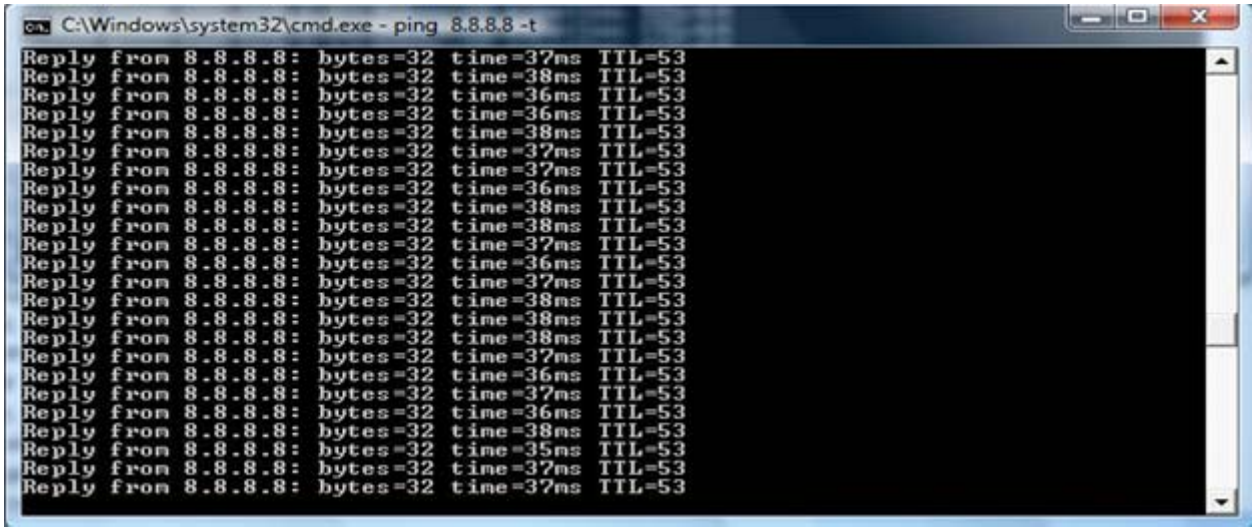


Step 4. Check "**Add to Wireless Profile**" and click "**Reboot Now**".

Step 5. In the laptop or PC connected to the WNAP-W2201A by Ethernet cable, go to TCP/IP settings to modify it to "**Obtain an IP address automatically**".

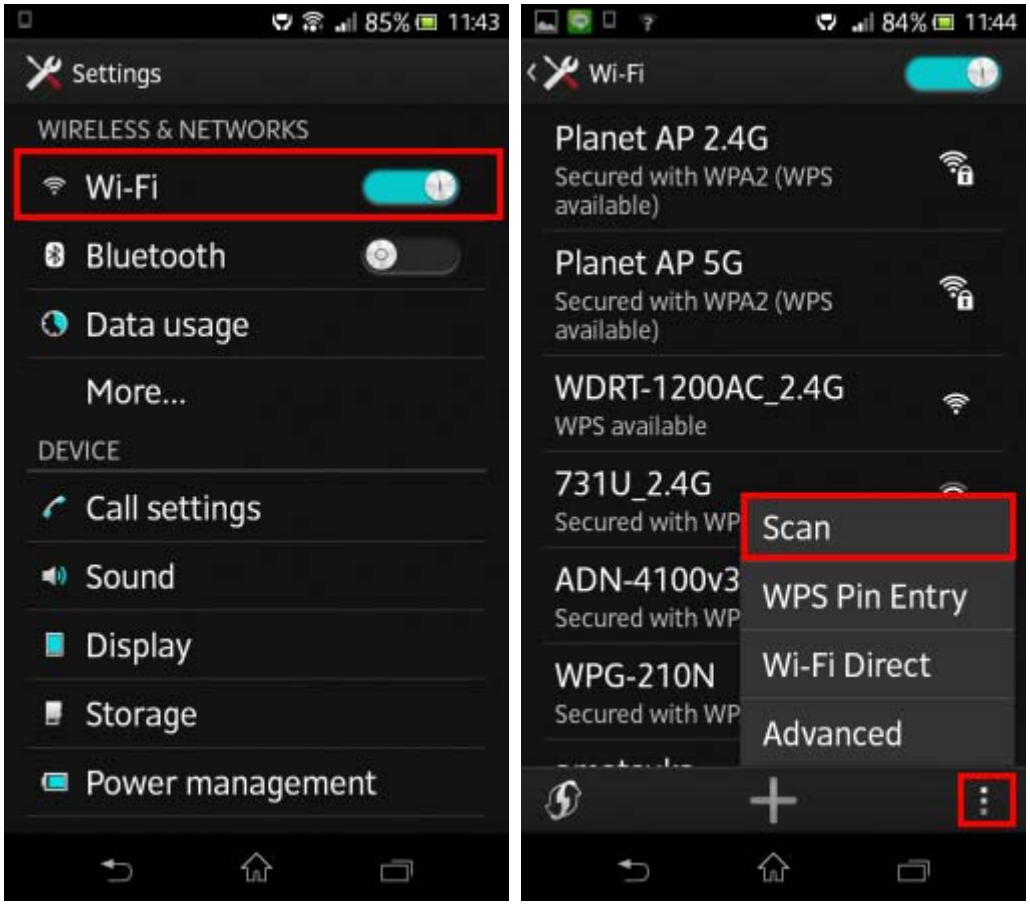


Step 6. Use the command line tool to ping the DNS (e.g., Google) to ensure the laptop or PC can access internet through the connection.



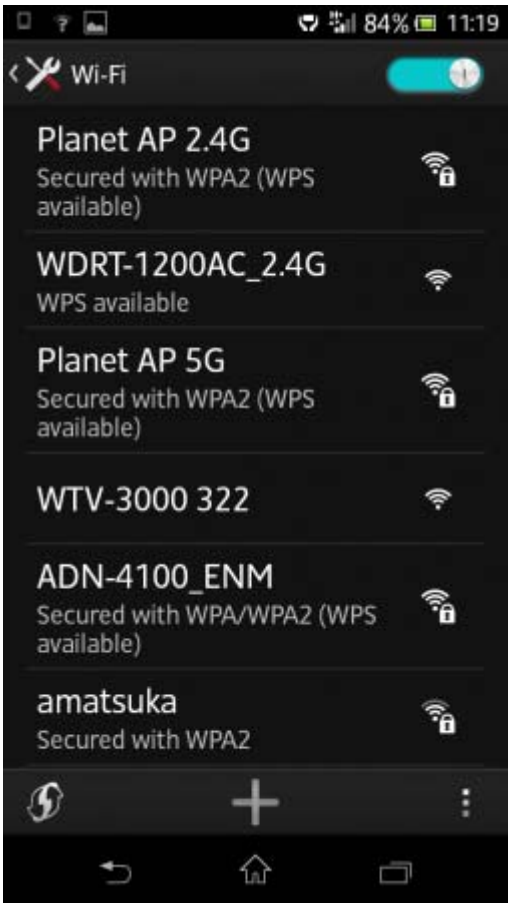
Step 7. In the Android Smart Phone, tap the [**Settings**] icon displayed in the home screen.

Step 8. Check Wi-Fi setting to view the available wireless network or tap the lower-right corner to re-scan the available wireless network.

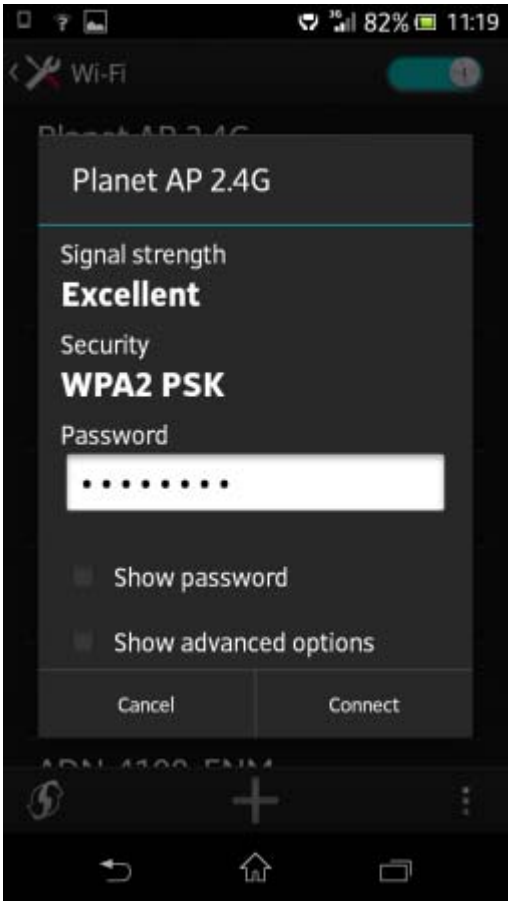


Step 9. Tap the target wireless network (SSID).

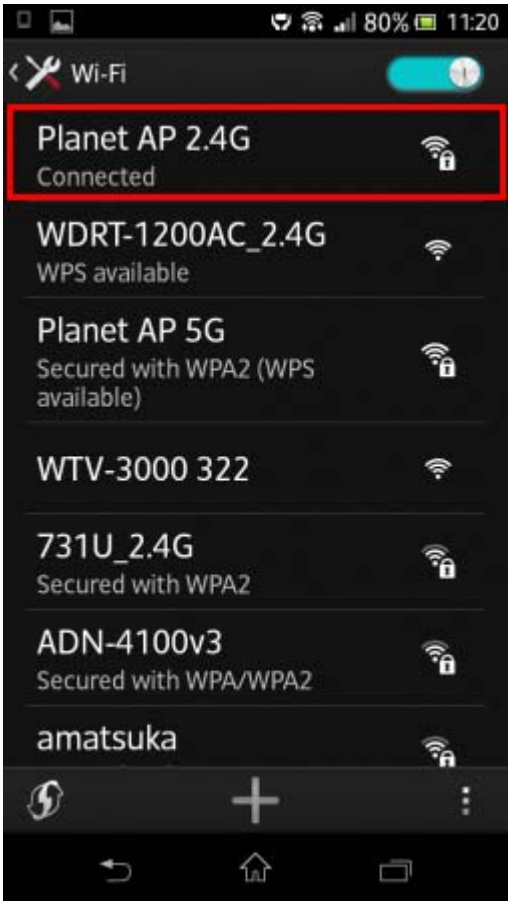
In the case, if you would like to connect to the WNAP-W2201A, please select the SSID [**Planet AP 2.4G**].



Step 10. Enter the **encryption key**, and then tap [**Connect**].



Step 11. Check if the device is connected to the selected wireless network.



Step 12. Now, you should be able to surf internet on the laptop through the WNAP-W2201A.

Note

For the wireless connection setup in other platforms (e.g., iPhone, iPad, laptop), please refer to the **Chapter 6. Quick Connection to a Wireless Network**.

Appendix C: Troubleshooting

If you find the AP is working improperly or stop responding to you, please read this troubleshooting first before contacting the dealer for help. Some problems can be solved by yourself within a very short time.

Scenario	Solution
The AP is not responding to me when I want to access it by Web browser.	a. Please check the connection of the power cord and the Ethernet cable of this AP. All cords and cables should be correctly and firmly inserted into the AP. b. If all LEDs on this AP are off, please check the status of power adapter, and make sure it is correctly powered. c. You must use the same IP address section which AP uses. d. Are you using MAC or IP address filter? Try to connect the AP by another computer and see if it works; if not, please reset the AP to the factory default settings by pressing the 'reset' button for over 7 seconds. e. Use the Smart Discovery Tool to see if you can find the AP or not. f. If you did a firmware upgrade and this happens, contact your dealer of purchase for help. g. If all the solutions above don't work, contact the dealer for help.
I can't get connected to the Internet.	a. Go to 'Status' -> 'Internet Connection' menu on the router connected to the AP, and check Internet connection status. b. Please be patient, sometimes Internet is just that slow. c. If you've connected a computer to Internet directly before, try to do that again, and check if you can get connected to Internet with your computer directly attached to the device provided by your Internet service provider. d. Check PPPoE / L2TP / PPTP user ID and password entered in the router's settings again. e. Call your Internet service provider and check if there's something wrong with their service. f. If you just can't connect to one or more website, but you can still use other internet services, please check URL/Keyword filter. g. Try to reset the AP and try again later. h. Reset the device provided by your Internet service provider too.

	i. Try to use IP address instead of host name. If you can use IP address to communicate with a remote server, but can't use host name, please check DNS setting.
I can't locate my AP by my wireless device.	a. 'Broadcast ESSID' set to off? b. Both two antennas are properly secured. c. Are you too far from your AP? Try to get closer. d. Please remember that you have to input ESSID on your wireless client manually, if ESSID broadcast is disabled.
File downloading is very slow or breaks frequently.	a. Are you using QoS function? Try to disable it and try again. b. Internet is slow sometimes. Please be patient. c. Try to reset the AP and see if it's better after that. d. Try to know what computers do on your local network. If someone's transferring big files, other people will think Internet is really slow. e. If this never happens before, call you Internet service provider to know if there is something wrong with their network.
I can't log into the web management interface; the password is wrong.	a. Make sure you're connecting to the correct IP address of the AP! b. Password is case-sensitive. Make sure the 'Caps Lock' light is not illuminated. c. If you really forget the password, do a hard reset.
The AP becomes hot	a. This is not a malfunction, if you can keep your hand on the AP's case. b. If you smell something wrong or see the smoke coming out from AP or A/C power adapter, please disconnect the AP and power source from utility power (make sure it's safe before you're doing this!), and call your dealer of purchase for help.

Appendix D: Glossary

- **802.11ac** - 802.11ac is a wireless networking standard in the 802.11 family (which is marketed under the brand name Wi-Fi), developed in the IEEE Standards Association process, providing high-throughput wireless local area networks (WLANs) on the 5 GHz band.
- **802.11n -** 802.11n builds upon previous 802.11 standards by adding MIMO (multiple-input multiple-output). MIMO uses multiple transmitter and receiver antennas to allow for increased data throughput via spatial multiplexing and increased range by exploiting the spatial diversity, perhaps through coding schemes like Alamouti coding. The Enhanced Wireless Consortium (EWC) [3] was formed to help accelerate the IEEE 802.11n development process and promote a technology specification for interoperability of next-generation wireless local area networking (WLAN) products.
- **802.11a** - 802.11a was an amendment to the IEEE 802.11 wireless local network specifications that defined requirements for an orthogonal frequency division multiplexing (OFDM) communication system. It was originally designed to support wireless communication in the unlicensed national information infrastructure (U-NII) bands (in the 5–6 GHz frequency range) as regulated in the United States by the Code of Federal Regulations, Title 47, Section 15.407.
- **802.11b -** The 802.11b standard specifies a wireless networking at 11 Mbps using direct-sequence spread-spectrum (DSSS) technology and operating in the unlicensed radio spectrum at 2.4GHz, and WEP encryption for security. 802.11b networks are also referred to as Wi-Fi networks.
- **802.11g -** specification for wireless networking at 54 Mbps using direct-sequence spread-spectrum (DSSS) technology, using OFDM modulation and operating in the unlicensed radio spectrum at 2.4GHz, and backward compatibility with IEEE 802.11b devices, and WEP encryption for security.
- **DDNS** (**D**ynamic **D**omain **N**ame **S**ystem) **-** The capability of assigning a fixed host and domain name to a dynamic Internet IP Address.
- **DHCP** (**D**ynamic **H**ost **C**onfiguration **P**rotocol) **-** A protocol that automatically configure the TCP/IP parameters for the all the PC(s) that are connected to a DHCP server.
- **DMZ** (**De**militarized **Z**one) **-** A Demilitarized Zone allows one local host to be exposed to the Internet for a special-purpose service such as Internet gaming or videoconferencing.
- **DNS** (**D**omain **N**ame **S**ystem) **-** An Internet Service that translates the names of websites into IP addresses.
- **Domain Name -** A descriptive name for an address or group of addresses on the Internet.
- **DSL** (**D**igital **S**ubscriber **L**ine) **-** A technology that allows data to be sent or received over existing traditional phone lines.
- **ISP** (**I**nternet **S**ervice **P**rovider) **-** A company that provides access to the Internet.

- **MTU** (**Maximum Transmission Unit**) **-** The size in bytes of the largest packet that can be transmitted.
- **NAT** (**N**etwork **A**ddress **T**ranslation) **-** NAT technology translates IP addresses of a local area network to a different IP address for the Internet.
- **PPPoE** (**P**oint to **P**oint **P**rotocol **o**ver **E**thernet) **-** PPPoE is a protocol for connecting remote hosts to the Internet over an always-on connection by simulating a dial-up connection.
- **SSID -** A **S**ervice **S**et **Id**entification is a thirty-two character (maximum) alphanumeric key identifying a wireless local area network. For the wireless devices in a network to communicate with each other, all devices must be configured with the same SSID. This is typically the configuration parameter for a wireless PC card. It corresponds to the ESSID in the wireless Access Point and to the wireless network name.
- **WEP** (**W**ired **E**quivalent **P**rivacy) **-** A data privacy mechanism based on a 64-bit or 128-bit or 152-bit shared key algorithm, as described in the IEEE 802.11 standard.
- **Wi-Fi -** A trade name for the 802.11b wireless networking standard, given by the Wireless Ethernet Compatibility Alliance (WECA, see http://www.wi-fi.net), an industry standards group promoting interoperability among 802.11b devices.
- **WLAN** (**W**ireless **L**ocal **A**rea **N**etwork) **-** A group of computers and associated devices communicate with each other wirelessly, which network serving users are limited in a local area.

EC Declaration of Conformity

English	Hereby, **PLANET Technology Corporation,** declares that this **11n Wireless AP** is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.	**Lietuviškai**	Šiuo **PLANET Technology Corporation,**, skelbia, kad **11n Wireless AP** tenkina visus svarbiausius 1999/5/EC direktyvos reikalavimus ir kitas svarbias nuostatas.
Česky	Společnost **PLANET Technology Corporation,** tímto prohlašuje, že tato **11n Wireless AP** splňuje základní požadavky a další příslušná ustanovení směrnice 1999/5/EC.	**Magyar**	A gyártó **PLANET Technology Corporation**, kijelenti, hogy ez a **11n Wireless AP** megfelel az 1999/5/EK irányelv alapkövetelményeinek és a kapcsolódó rendelkezéseknek.
Dansk	**PLANET Technology Corporation,** erklærer herved, at følgende udstyr **11n Wireless AP** overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF	**Malti**	Hawnhekk, **PLANET Technology Corporation,** jiddikjara li dan **11n Wireless AP** jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC
Deutsch	Hiermit erklärt **PLANET Technology Corporation,** dass sich dieses Gerät **11n Wireless AP** in Übereinstimmung mit den grundlegenden Anforderungen und den anderen relevanten Vorschriften der Richtlinie 1999/5/EG befindet". (BMWi)	**Nederlands**	Hierbij verklaart , **PLANET Technology orporation,** dat **11n Wireless AP** in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG
Eestikeeles	Käesolevaga kinnitab **PLANET Technology Corporation,** et see **11n Wireless AP** vastab Euroopa Nõukogu direktiivi 1999/5/EC põhinõuetele ja muudele olulistele tingimustele.	**Polski**	Niniejszym firma **PLANET Technology Corporation,** oświadcza, że **11n Wireless AP** spełnia wszystkie istotne wymogi i klauzule zawarte w dokumencie „Directive 1999/5/EC”.
Ελληνικά	*ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ* , **PLANET Technology Corporation,** *ΔΗΛΩΝΕΙ ΟΤΙ ΑΥΤΟ* **11n Wireless AP***ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ*	**Português**	**PLANET Technology Corporation**, declara que este **11n Wireless AP** está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
Español	Por medio de la presente, **PLANET Technology Corporation,** declara que **11n Wireless AP** cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE	**Slovensky**	Výrobca **PLANET Technology Corporation,** týmto deklaruje, že táto **11n Wireless AP** je v súlade so základnými požiadavkami a ďalšími relevantnými predpismi smernice 1999/5/EC.
Français	Par la présente, **PLANET Technology Corporation,** déclare que les appareils du **11n Wireless AP** sont conformes aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE	**Slovensko**	**PLANET Technology Corporation**, **s tem potrjuje,** da je ta **11n Wireless AP** skladen/a z osnovnimi zahtevami in ustreznimi določili Direktive 1999/5/EC.
Italiano	Con la presente , **PLANET Technology Corporation,** dichiara che questo **11n Wireless AP** è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.	**Suomi**	**PLANET Technology Corporation,** vakuuttaa täten että **11n Wireless AP** tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
Latviski	Ar šo **PLANET Technology Corporation,** apliecina, ka šī **11n Wireless AP** atbilst Direktīvas 1999/5/EK pamatprasībām un citiem atbilstošiem noteikumiem.	**Svenska**	Härmed intygar, **PLANET Technology Corporation,** att denna **11n Wireless AP** står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.