

User's Manual

1200Mbps Dual Band 802.11ac Outdoor Wireless AP

▶ WDAP-802AC



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FCC 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.

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.

CE Compliance Statement

This device meets the RED 2014/53/EU requirements on the limitation of exposure of the general public to electromagnetic fields by way of health protection. The device complies with RF specifications when it is used at a safe distance of 20 cm from your body.

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 2014/53/EU) 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 802.11ac Dual Band Ceiling-mount Wireless Access Point

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FIGURE


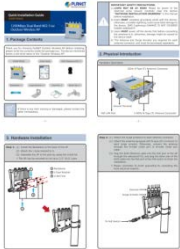





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Chapter 1. Product Introduction

1.1 Package Contents

Thank you for choosing PLANET WDAP-802AC Wireless AP. Please verify the contents inside the package box.

Package Contents of WDAP-802AC			
WDAP-802AC	Quick Guide	RJ45 Waterproof Kit x1	Backplane x 1
			
L-type Bracket x 1	Screw Set x 1	U-bolt Kit x 2	
			



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

1.2 Product Description

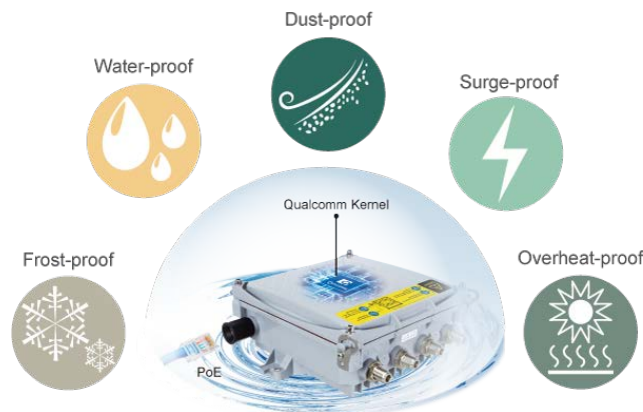
Ultra High Speed and Wide Coverage

PLANET WDAP-802AC 1200Mbps Dual Band 802.11ac Outdoor Wireless AP offers a wide coverage of wireless Internet access and ultimate wireless speed. It comes with the IP68-rated aluminum case protected from contact with harmful dust and immersion in water. It adopts the latest IEEE 802.11ac 2T2R dual-band technology and provides 2.4GHz and 5GHz dual radios with maximum connectivity and performance for long-range coverage. By connecting high-gain antenna through the flexible N-type connectors, the system integrator can easily assist customers in achieving various outdoor long-distance applications under rough weather in any harsh environment.



Flexible, Durable and Reliable Outdoor Characteristics

To reach maximum reliability in the harsh environment, the WDAP-802AC not only comes with IP68-rated aluminum die-cast housing, but also adopts the enterprise-level Qualcomm kernel, capable of withstanding wide temperature ranging from -40 to 70 degrees C. Designed with the IEEE 802.3at PoE+ (Power over Ethernet) power scheme, the WDAP-802AC can be easily installed in the areas where power outlets are not available. Furthermore, it is also suitable to be integrated with PLANET Solar Power PoE System to offer farther wireless service in remote areas.



Environmental Adaptations in Outdoor Area

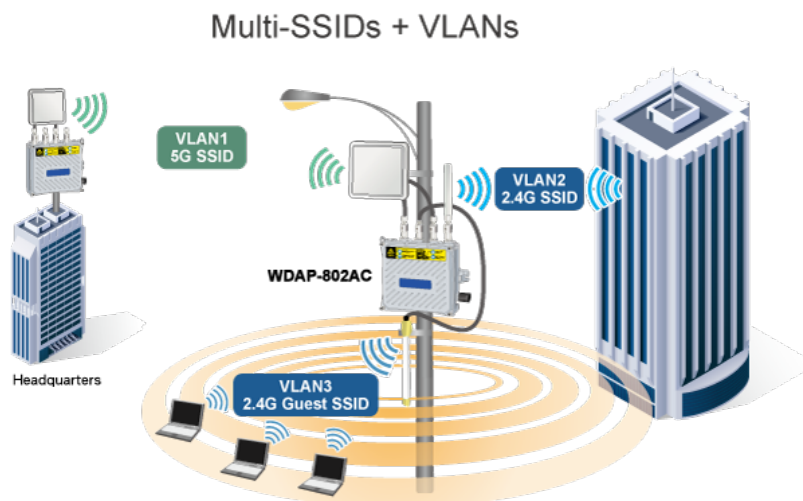
Central Management Simplifies High-density Deployment

For wireless deployment in high-density environments such as campuses, communities, warehouses, etc., the dual-radio design and coverage threshold make the WDAP-802AC capable of utilizing dual band to relay signal and limit specific clients so as to provide maximum bandwidth to those authenticated users. Moreover, you can simply install our software controller, PLANET SAPC (Smart AP Control), to deliver wireless profiles to multiple APs simultaneously, thus making the central management simple.



Multiple SSIDs with VLAN Tagging

In the aspect of security, the WDAP-802AC supports WPA/WPA2, and the 802.1X RADIUS authentication to secure the wireless connection. Besides, the supported IEEE 802.1Q VLAN allows multiple VLAN tags to be mapped to multiple SSIDs to distinguish the wireless access. This makes it possible for the WDAP-802AC to work with managed Ethernet switches to have VLANs assigned for a different access level and authority.



More User-friendly and Efficient

The WDAP-802AC is designed to reduce the difficulty of the outdoor configuration and optimize user experience. With the graphical Web GUI and setup wizard assisting administrator quickly in configuring suitable operation modes for various applications, the built-in Wi-Fi analyzer provides real-time channel utilization to prevent channel occupation among APs. With the automatic transmission power mechanism, distance control and scheduled reboot setting, the WDAP-802AC is easier for administrator to deploy and manage without on-site maintenance.



1.3 Product Features

- **Industrial Wireless LAN and LAN**
 - Compliant with the IEEE 802.11a/b/g/n/ac wireless technology
 - 802.11ac 2T2R MIMO architecture with data rate of up to 1200Mbps (300Mbps at 2.4GHz and 867Mbps at 5GHz)
 - Equipped with 10/100/1000Mbps RJ45 port with auto MDI/MDI-X supported
- **RF Interface Characteristics**
 - Built-in four N-type antenna connectors
 - High output power with multiply-adjustable transmit power control
- **Outdoor Environmental Characteristics**
 - IP68 rating, IEEE 802.3at PoE design
 - Rugged protection with aluminum extrusion case and ground terminal
 - Operating temperature: -40~70 degrees C
- **Multiple Operation Modes and Wireless Features**
 - Multiple operation modes: AP, Gateway, Repeater, WDS, WISP
 - WMM (Wi-Fi multimedia) provides higher priority to multimedia transmitting over wireless
 - Coverage threshold to limit the weak signal of clients occupying session
 - Real-time Wi-Fi channel analysis chart and client limit control for better performance
- **Secure Network Connection**
 - Full encryption supported: 64-/128-bit WEP, WPA/WPA2, WPA-PSK/WPA2-PSK and 802.1X RADIUS authentication
 - Supports 802.1Q VLAN and SSID-to-VLAN mapping
 - Supports IP/Port/MAC address/URL filtering, DoS, SPI Firewall
 - Supports DMZ and Port forwarding
 - Bandwidth control per IP address to increase network stability
- **Easy Deployment and Management**
 - Supports PLANET AP Controllers in AP mode
 - Easy discovery by PLANET Smart Discovery
 - Self-healing mechanism through system auto reboot setting
 - System status monitoring through remote Syslog Server
 - Supports PLANET DDNS/ Easy DDNS

1.4 Product Specifications

Product	WDAP-802AC
	1200Mbps Dual Band 802.11ac Outdoor Wireless AP
Hardware	
Standard Support	IEEE 802.11ac IEEE 802.11n IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11i IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3ab 1000BASE-T IEEE 802.3x flow control
Material	Aluminum
Dimensions (W x D x H)	225 x 101.5 x 225 mm
Weight	4kg
Power Requirement	48V 0.5A, IEEE 802.3at PoE+
Power Consumption (max.)	< 25.5W
Mounting Type	Mast mounting
Interface	Wireless IEEE802.11a/b/g/n/ac, 2T2R PoE LAN: 1 x 10/100/1000BASE-T, auto-MDI/MDIX, 802.3at PoE In
Button	Reset button (Inside enclosure)
Antenna	Built-in four N-type connectors
Data Rate	IEEE 802.11b: up to 11Mbps IEEE 802.11a/g: up to 54Mbps IEEE 802.11n (20MHz): up to 150Mbps IEEE 802.11n (40MHz): up to 300Mbps 802.11ac (VHT20): Up to 173.3Mbps 802.11ac (VHT40): Up to 400Mbps 802.11ac (VHT80): Up to 867Mbps
Media Access Control	CSMA/CA
Modulation	802.11ac: OFDM (BPSK/ QPSK/ 16QAM/ 64QAM/ 256QAM) 802.11a/g/n: OFDM (BPSK/ QPSK/ 16QAM/ 64QAM) 802.11b: DSSS (DBPSK/ DQPSK/ CCK)
Frequency Band	2.4GHz : FCC: 2.412~2.462GHz ETSI: 2.412~2.472GHz 5GHz : FCC: 5.180~5.240GHz, 5.745~5.825GHz ETSI: 5.180~5.700GHz

<p>Operating Channels</p>	<p>2.4GHz : FCC: 1~11 Channels ETSI: 1~13 Channels</p> <p>5GHz : FCC: 36, 40, 44, 48, 149, 153, 157, 161, 165 (9 Channels) ETSI: 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 132, 136, 140 (16 Channels)</p> <p>5GHz channel list will vary in different countries according to their regulations.</p>					
<p>Max. Transmit Power (dBm)</p>	<p>FCC : up to 29 ± 1dBm ETSI : < 20dBm (EIRP)</p>					
<p>Receiver Sensitivity (dBm)</p>	<table border="1"> <thead> <tr> <th>Network Mode</th> <th>Data Rate</th> <th>Receive Sensitivity (dBm)</th> </tr> </thead> </table>			Network Mode	Data Rate	Receive Sensitivity (dBm)
	Network Mode	Data Rate	Receive Sensitivity (dBm)			
	<p>2.4GHz</p>					
	<p>802.11b</p>	1Mbps	-99			
		11Mbps	-92			
	<p>802.11g</p>	6Mbps	-95			
		54Mbps	-82			
	<p>802.11n HT20</p>	MCS0/MCS8	-95			
		MCS7/MCS15	-77			
	<p>802.11n HT40</p>	MCS0/MCS8	-93			
		MCS7/MCS15	-75			
	<p>5GHz</p>					
	<p>802.11a</p>	6Mbps	-92			
		54Mbps	-75			
	<p>802.11n HT20</p>	MCS0/MCS8	-91			
		MCS7/MCS15	-72			
	<p>802.11n HT40</p>	MCS0/MCS8	-88			
		MCS7/MCS15	-70			
	<p>802.11ac VHT20</p>	MCS0	-92			
		MCS8	-70			
<p>802.11ac VHT40</p>	MCS0	-89				
	MCS9	-65				
<p>802.11ac VHT80</p>	MCS0	-87				
	MCS9	-61				
<p>Environment & Certification</p>						
<p>Operating Temperature</p>	<p>-40~70 degrees C</p>					
<p>Operating Humidity</p>	<p>10~90% (non-condensing)</p>					
<p>IP Level</p>	<p>IP68</p>					
<p>ESD Protection</p>	<p>±8kV air-gap discharge ±4kV contact discharge</p>					

Surge Protection	±4kV
Regulatory	CE, RoHS
Software	
LAN	Static IP
	Supports IP-MAC binding
WAN Type (GW/WISP mode)	<ul style="list-style-type: none"> ■ Static IP ■ Dynamic IP ■ PPPoE
Wireless Modes	<ul style="list-style-type: none"> ■ Access Point ■ Gateway ■ Repeater ■ WDS ■ WISP
Channel Width	20MHz, 40MHz, 80MHz
Encryption Type	64-/128-bit WEP, WPA, WPA-PSK, WPA2, WPA2-PSK, 802.1X
Wireless Security	Enable/Disable SSID Broadcast
	Wireless MAC address filtering
	User Isolation
Max. SSIDs	4
Max. Wireless Clients	64 per radio (50 is suggested, depending on usage)
Max. WDS Peers	4
Wireless QoS	Supports Wi-Fi Multimedia (WMM)
Wireless Advanced	Auto Channel Selection
	5-level Transmit Power Control (100%, 75%, 50%, 25%, 12.5%)
	Client Limit Control, Coverage Threshold
	Distance control (Auto Ack Timeout)
	Wi-Fi channel analysis chart
	Fast Roaming
Status Monitoring	Device status, Wireless client List
	PLANET Smart Discovery
	DHCP client table
	System Log supports remote syslog server
VLAN	IEEE 802.1Q VLAN (VID: 3~4094)
	SSID-to-VLAN mapping up to 4 SSIDs
Self-healing	Supports auto reboot settings per day or hour
Management	Supports PLANET Hardware AP Controller/ Software AP Controller Applicable controllers: WAPC-500/WAPC1000 and SAPC
	Remote management through PLANET DDNS/ Easy DDNS
	Configuration backup and restore
	Supports UPnP and IGMP Proxy
	Supports PPTP/L2TP/IPSec VPN Pass-through
	SNMP v1/v2c/v3 support, MIB I/II, Private MIB

Chapter 2. Hardware Installation

2.1 Product Outlook

WDAP-802AC

- **Dimensions:** 225 x 101.5 x 225 mm (W x D x H)
- **Weight:** 4kg
- **Triple View**



Figure 2-1 WDAP-802AC Front Side

■ Rear Panel



Figure 2-2 WDAP-802AC Rear Side

■ Side Panel

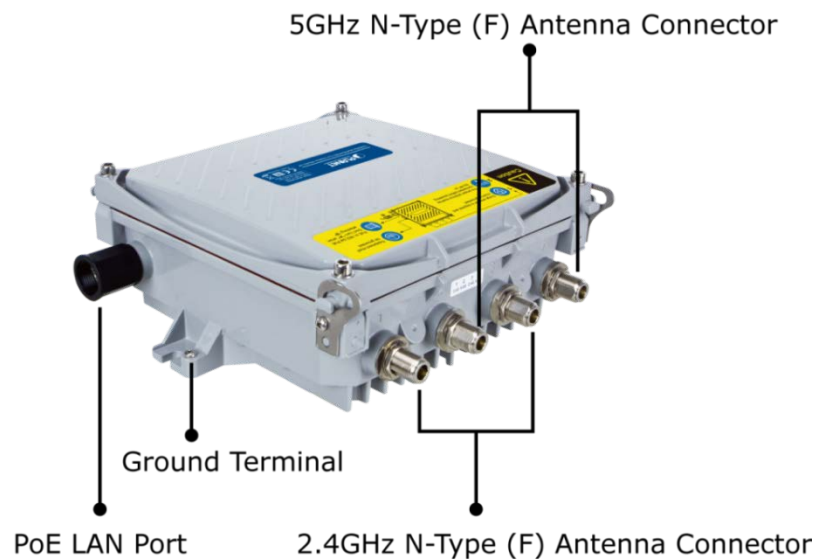


Figure 2-3 WDAP-802AC Side Panel

Hardware Interface

Object	Description
Antenna Connectors	4 N-type (female) antenna connectors
PoE LAN Port	10/100/1000Mbps RJ45 port, auto MDI/MDI-X 802.3at PoE+ supported, 48VDC In
Grounding Terminal	The grounding wire must be attached to this port to prevent damage to the AP from direct lightning strike.

Chapter 3. Connecting to the AP

3.1 System Requirements

- Broadband Internet Access Service (Cable/xDSL/Ethernet connection)
- One IEEE 802.3at PoE switch (supply power to the WDAP-802AC)
- PCs with a working Ethernet adapter and an Ethernet cable with RJ45 connectors
- PCs running Windows 98/ME, NT4.0, 2000/XP, Windows Vista / Win 7, MAC OS 9 or later, Linux, UNIX or other platforms compatible with **TCP/IP** protocols



1. The AP in the following instructions refers to PLANET WDAP-802AC.
2. It is recommended to use Internet Explorer 11, Firefox or Chrome to access the AP.

3.2 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.

- Step 1.** (1) Install the Backplane to the back of the AP.
 (2) Attach the L-type bracket to it.
 (3) Assemble the AP to the pole by using the U-bolt kit.
 ※ The AP can be mounted on an up to 2.5" (O.D.) pole.

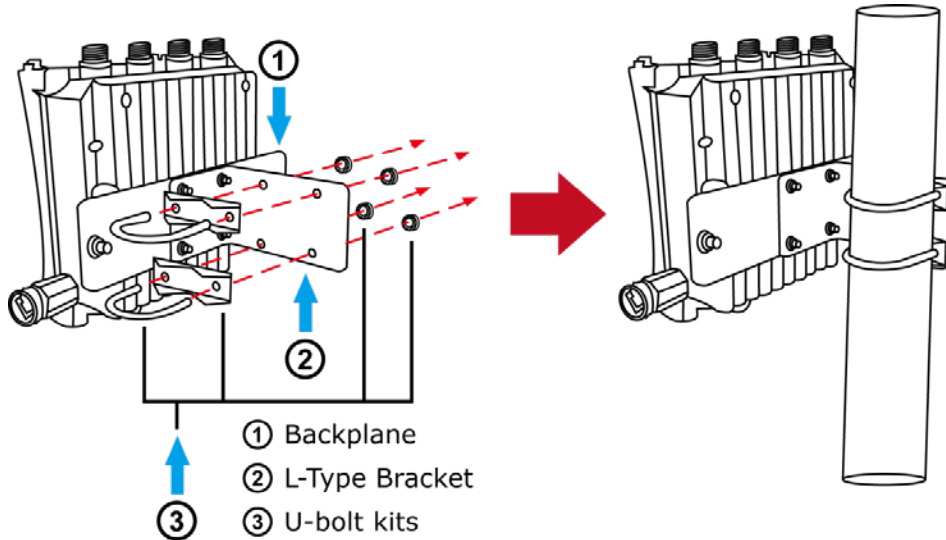


Figure 3-1 Installing Backplane and Bracket

- Step 2.** (1) Attach the surge arrestors to each antenna connector.
 (2) Attach the antenna equipped with N-type (M) connector to each surge arrestor. Otherwise, connect the antenna through the N-male (male pin) to N-male (male pin) cable.
 (3) Plug the RJ45 Ethernet cable into the PoE port of the AP through the waterproof kit, and plug the other side of the RJ45 cable into the PoE port of the PoE switch to finish the installation.
 ※ Please remember to finish grounding by consulting the local electrical experts.

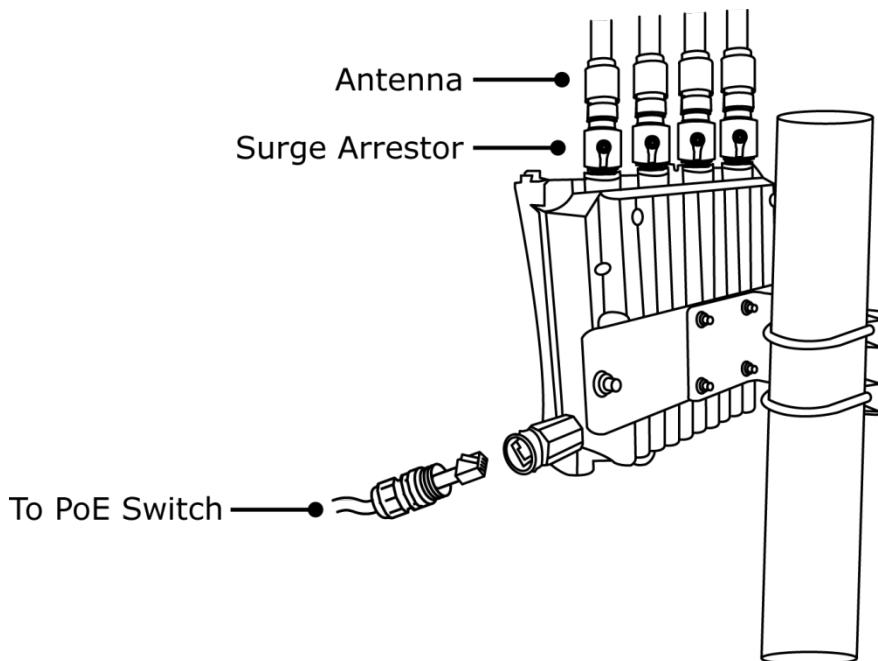


Figure 3-2 Connecting Antennas and Ethernet Cable

Chapter 4. Quick Installation Guide

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



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

4.1 Manual Network Setup -- TCP/IP Configuration

The default IP address of the WDAP-802AC 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 WDAP-802AC 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 WDAP-802AC 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 10**. 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.

4.1.1 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 WDAP-802AC 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 WDAP-802AC 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.

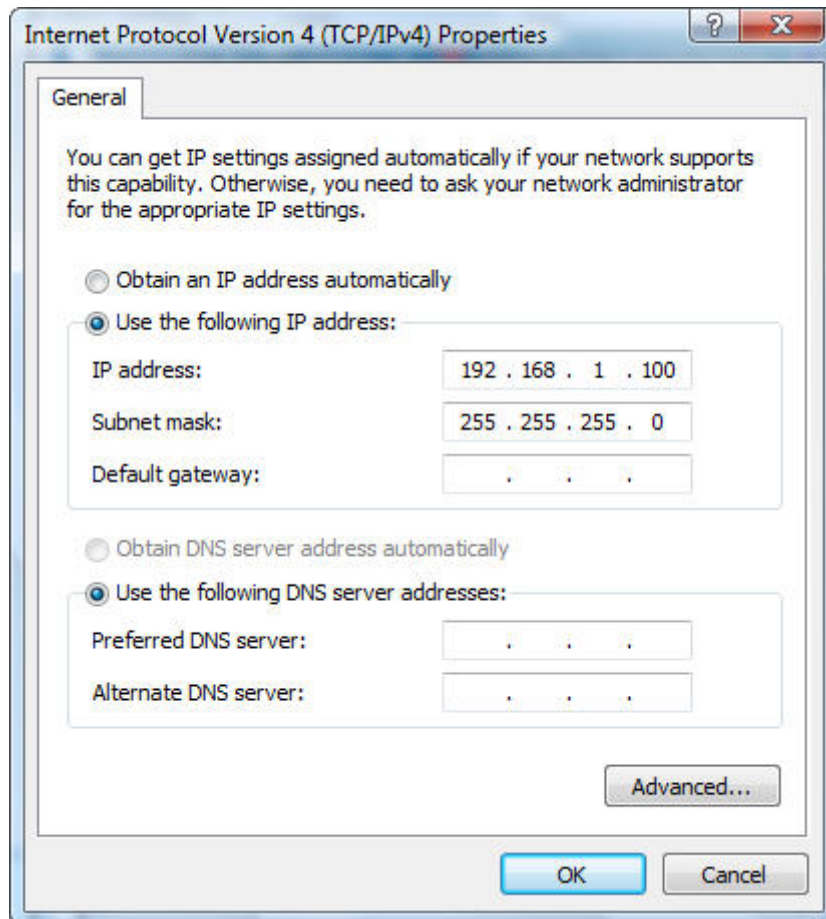


Figure 4-1 TCP/IP Setting

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 10** OS. Please follow the steps below:

1. Click on **Start > Run**.
2. Type "**cmd**" in the Search box.

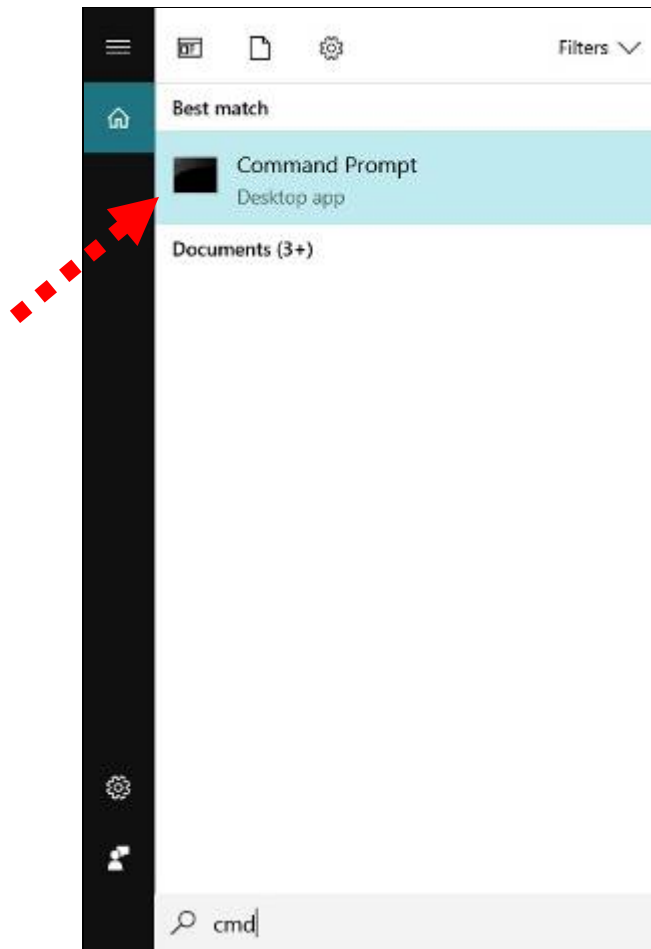


Figure 4-2 Windows Start Menu

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.

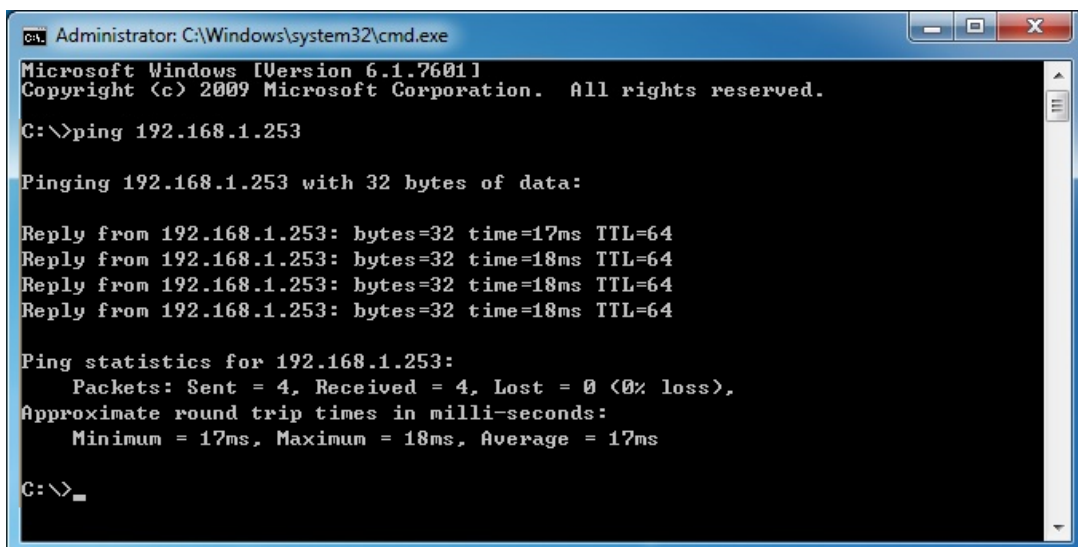
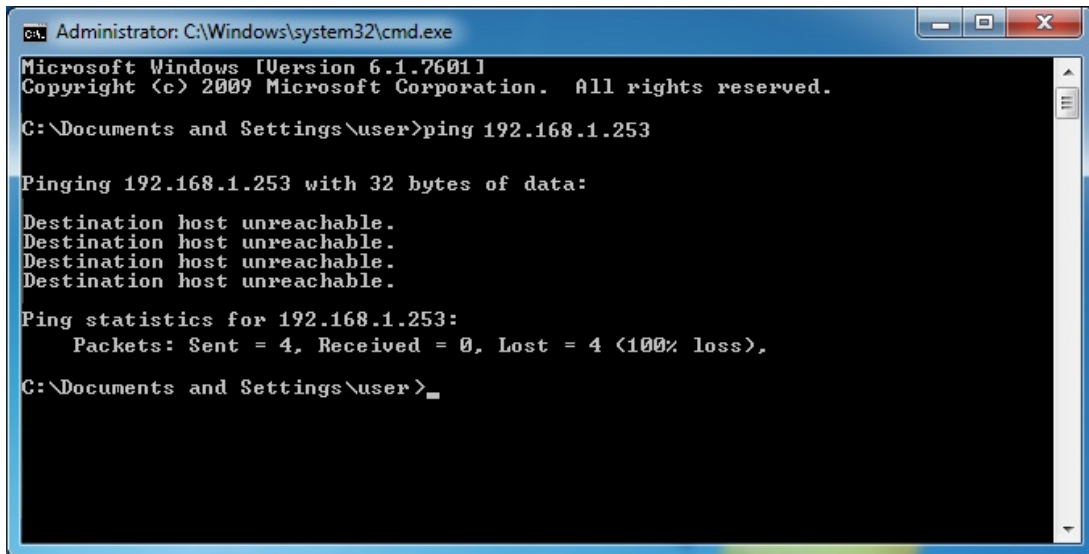


Figure 4-3 Successful Result of Ping Command

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



```
cs: Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Documents and Settings\user>ping 192.168.1.253

Pinging 192.168.1.253 with 32 bytes of data:

Destination host unreachable.
Destination host unreachable.
Destination host unreachable.
Destination host unreachable.

Ping statistics for 192.168.1.253:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\Documents and Settings\user>
```

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.

4.2 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.

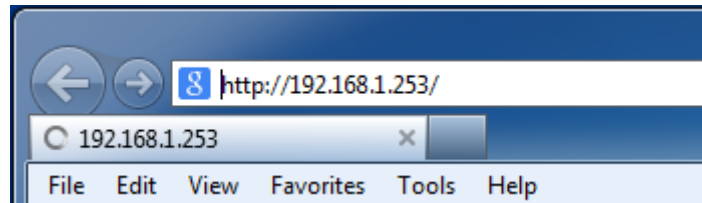


Figure 4-5 Login by Default IP Address

After a moment, a login window will appear. Enter **admin** for the password in lower case letters. Then click **LOGIN** or press the **Enter** key.



Figure 4-6 Login Window

Default IP Address: **192.168.1.253**

Default Password: **admin**



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 3 main items below, allowing you to manage the AP with ease. The screenshots of the WDAP-802AC are used as an example



Figure 5-1 Main Menu

The page includes the following fields:

Object	Description
2.4G Wireless Settings	Enter the 2.4G wireless settings to enable or disable wireless LAN.
5.8G Wireless Settings	Enter the 5.8G wireless settings to enable or disable wireless LAN.
LAN Settings	Enter the LAN settings to change the LAN IP address.
AP Position Settings	Configure the AP name and Location.

5.1 Wizard

The Wizard guides you to configuring the WDAP-802AC in a different mode, including Gateway, Repeater, WISP, AP and Super WDS modes.

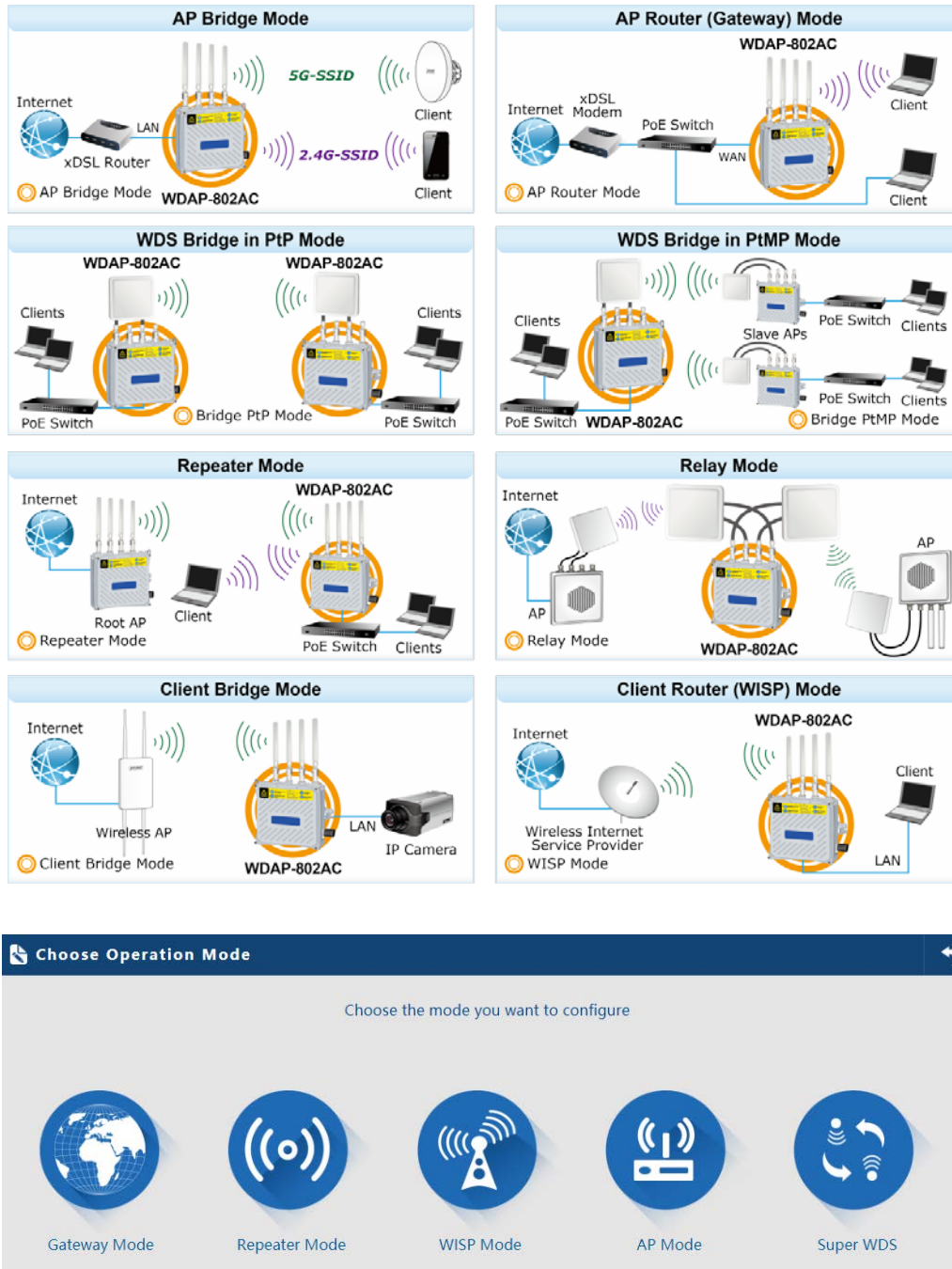


Figure 5-2 Operation Mode



The default operation mode is Super WDS.

5.2 Gateway Mode

Click “Wizard” → “Gateway Mode” and the following page will be displayed. This section allows you to configure the Gateway mode.

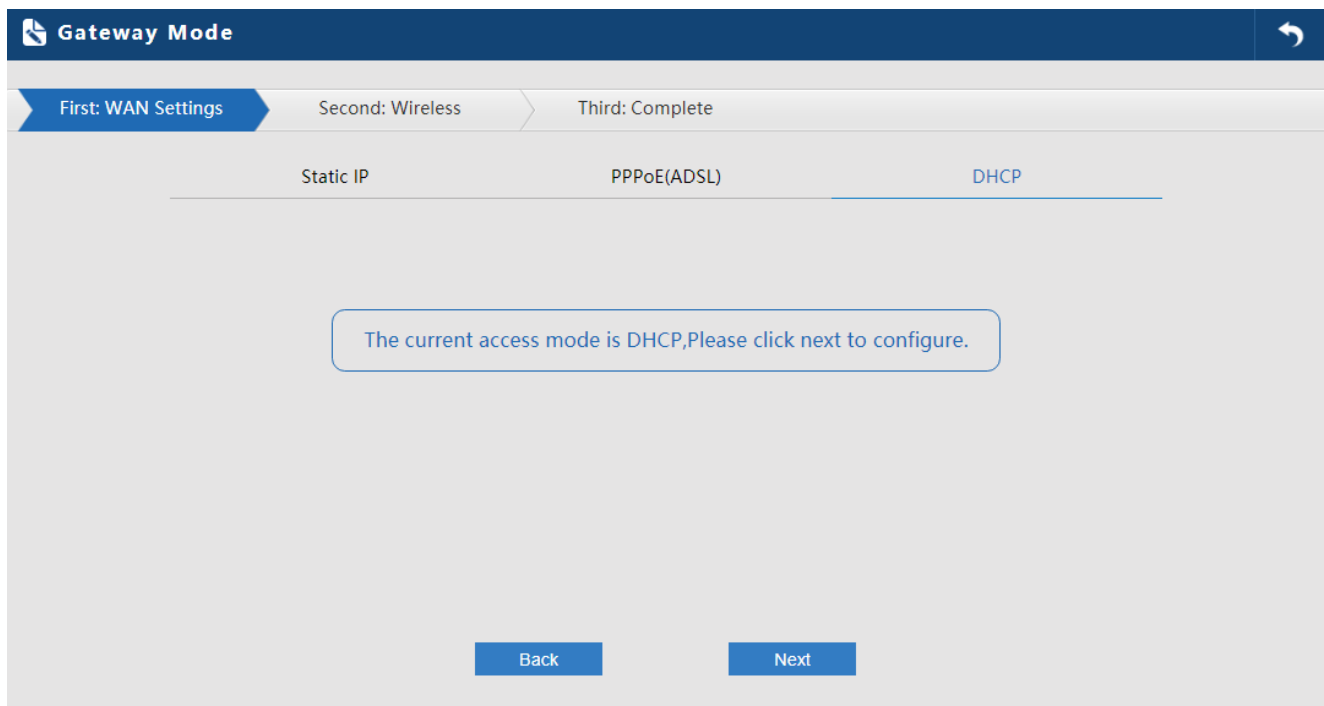
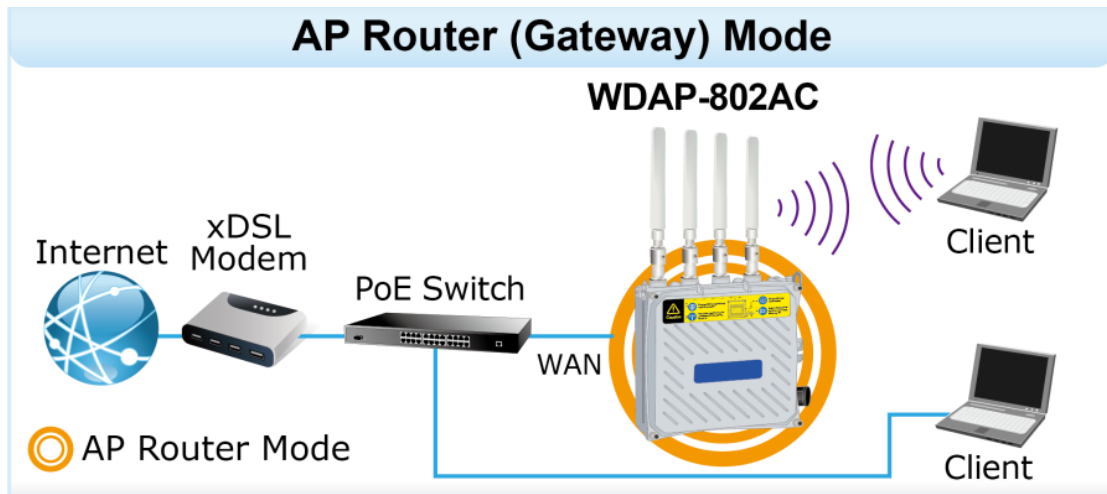


Figure 5-3 Gateway Mode

5.2.1 WAN Settings

Static IP

If your ISP offers you static IP Internet connection type, select “**Static IP**” and then enter IP address, subnet mask, default gateway and primary DNS information provided by your ISP in the corresponding fields.



The screenshot shows a configuration interface with three tabs: 'Static IP', 'PPPoE(ADSL)', and 'DHCP'. The 'Static IP' tab is selected. Below the tabs, there are four input fields: 'IP Address', 'Subnet Mask', 'Default Gateway', and 'Primary DNS', each with a corresponding text label to its left.

Figure 5-4 Gateway -- Static IP

The page includes the following fields:

Object	Description
IP Address	Enter the WAN IP address provided by your ISP. Enquire your ISP if you are not clear
Subnet Mask	Enter WAN Subnet Mask provided by your ISP
Default Gateway	Enter the WAN Gateway address provided by your ISP
Primary DNS	Enter the necessary DNS address provided by your ISP

PPPoE (ADSL)

Select **PPPOE** if your ISP is using a PPPoE connection and provide you with PPPoE user name and password info.



The screenshot shows the same configuration interface as Figure 5-4, but with the 'PPPoE(ADSL)' tab selected. The 'Static IP' and 'DHCP' tabs are now inactive. The input fields are now 'PPPoE Name' and 'PPPoE Password', each with a corresponding text label to its left.

Figure 5-5 Gateway – PPPoE (ADSL)

The page includes the following fields:

Object	Description
PPPoE Name	Enter the User Name provided by your ISP
PPPoE Password	Enter the password provided by your ISP

DHCP

Choose “DHCP” and the router will automatically obtain IP addresses, subnet masks and gateway addresses from your ISP.

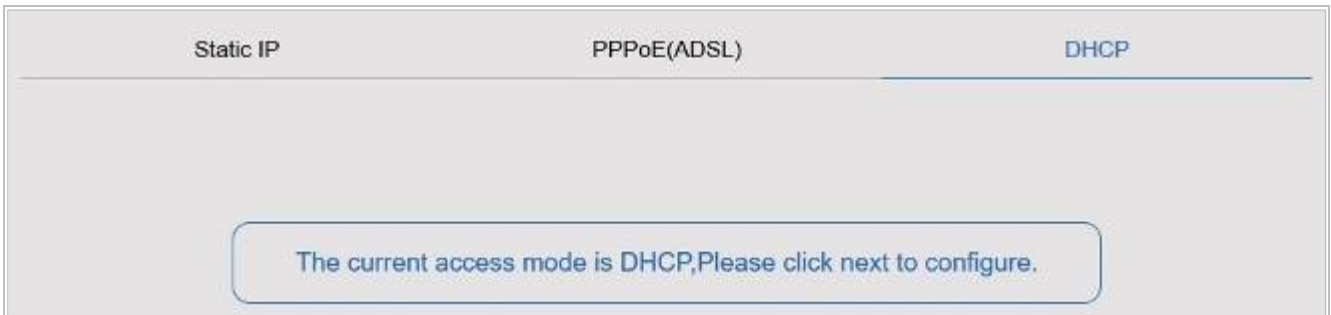


Figure 5-6 Gateway – DHCP

5.2.2 Wireless

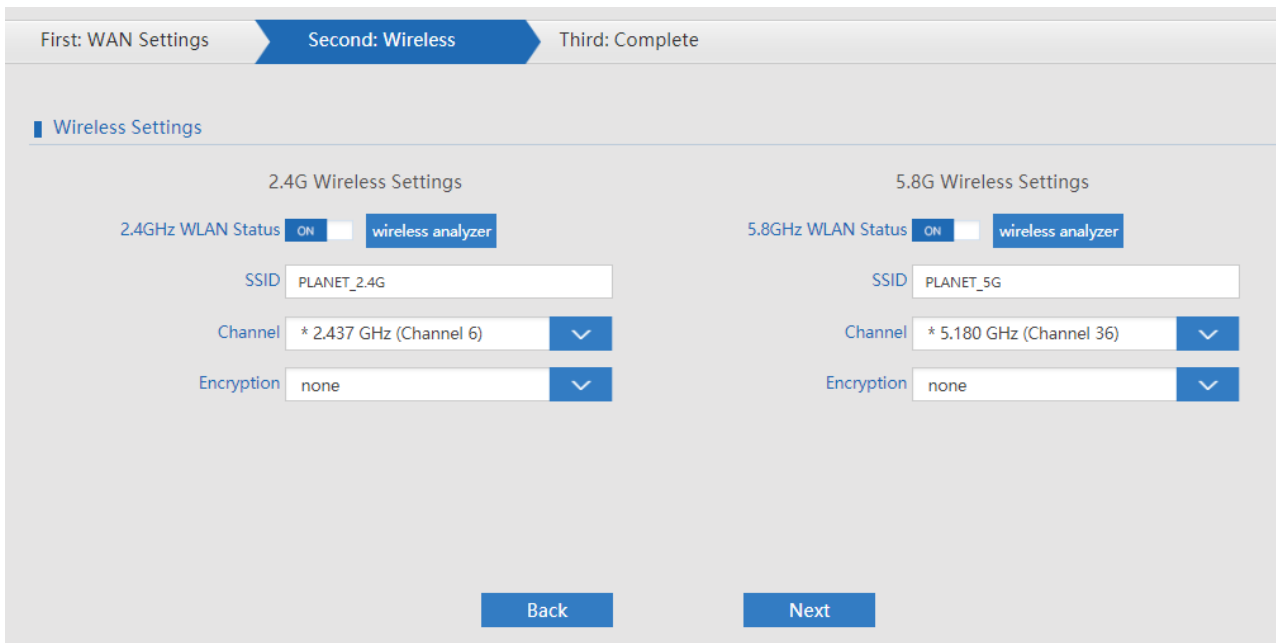


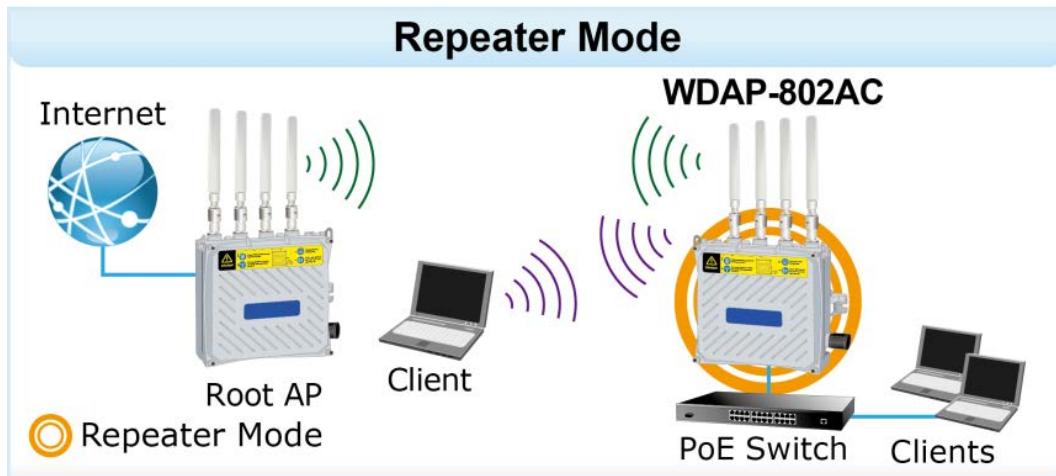
Figure 5-7 Gateway – Wireless

The page includes the following fields:

Object	Description
WLAN Status	Select ON or OFF to enable or disable wireless LAN
Wireless Analyzer	Press the button to check your wireless environment
SSID	It is the wireless network name. The default SSID is PLANET_2.4G and PLANET_5G
Channel	Select the operating channel you would like to use. The channel range will be changed by selecting a different domain.
Encryption	Select the wireless encryption. The default is None

5.3 Repeater Mode

Click “Wizard” → “Repeater Mode” and the following page will be displayed. This section allows you to configure the Repeater mode.



The screenshot shows the 'Repeater Mode' configuration wizard. The interface has a dark blue header with 'Repeater Mode' and a back arrow. Below the header, there are three steps: 'First: Repeater' (active), 'Second: Wireless', and 'Third: Complete'. The 'Wireless Repeater' section is expanded, showing the following settings:

- Wireless Repeater: 2.4G (dropdown menu)
- Repeater SSID: [empty text field] (with a 'Scan AP' button to the right)
- lockmac: [empty text field]
- Band Width: 20MHz (dropdown menu)
- Authentication: none (dropdown menu)
- WDS Passthrough

At the bottom of the form, there are two buttons: 'Back' and 'Next'.

Figure 5-8 Repeater Mode

The page includes the following fields:

Object	Description
Wireless Repeater	Select “2.4G” or “5.8G” wireless LAN.
Repeater SSID	Enter the root AP’s SSID or press “Scan AP” to select.
Lockmac	Check to lock the root AP MAC address.
Bandwidth	Select the operating channel width, “20MHz” or “40MHz”.
Authentication	Select the wireless encryption of root AP.
WDS Passthrough	Check to enable WDS passthrough if the root AP is the same model as client . The default setting is “enable”

Press **Scan AP** to show the root AP that you need to repeat and press **Choice** to select the AP.

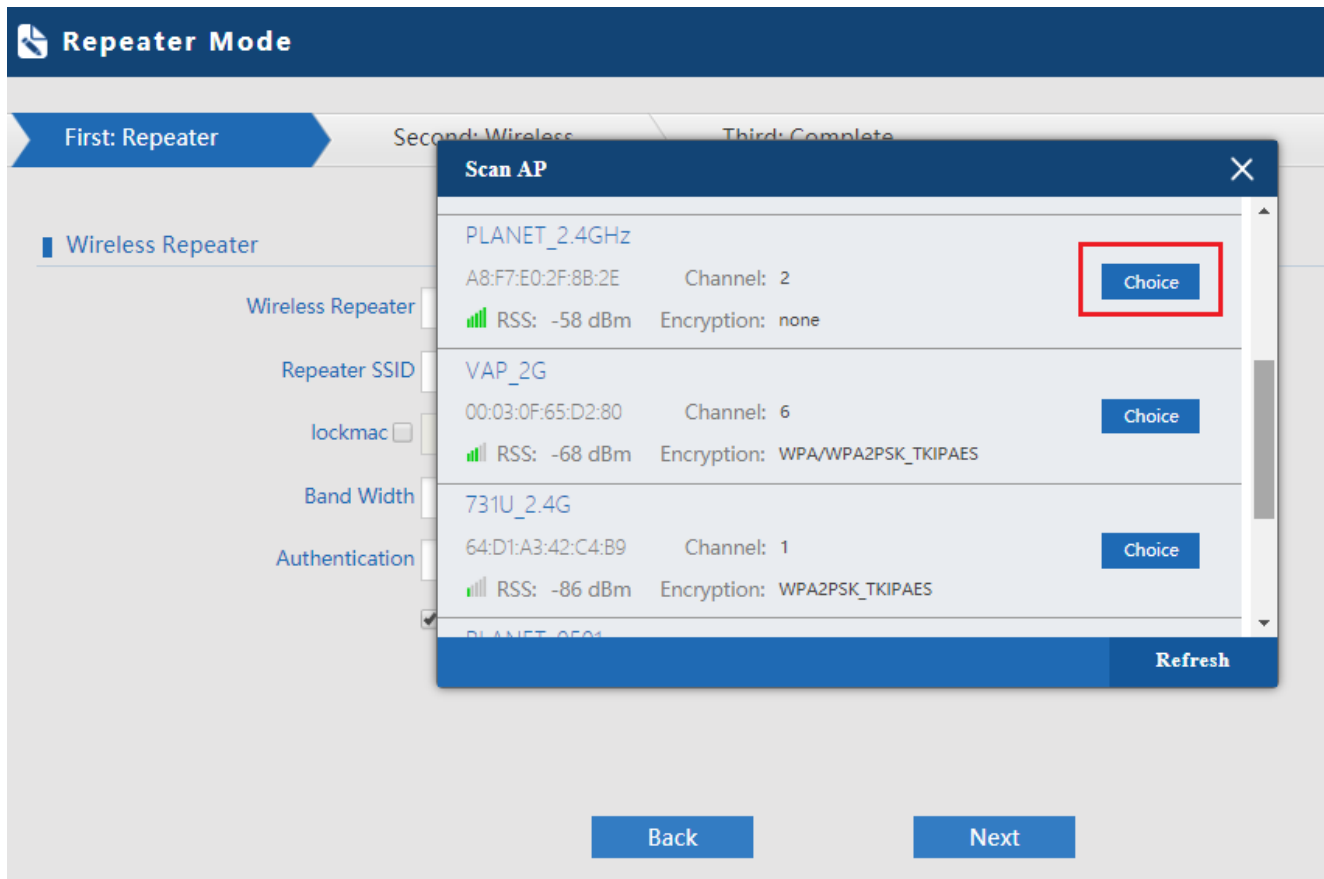


Figure 5-9 Repeater Mode -- Scan AP

Select the authentication and bandwidth which are the same as root AP to establish the connection.

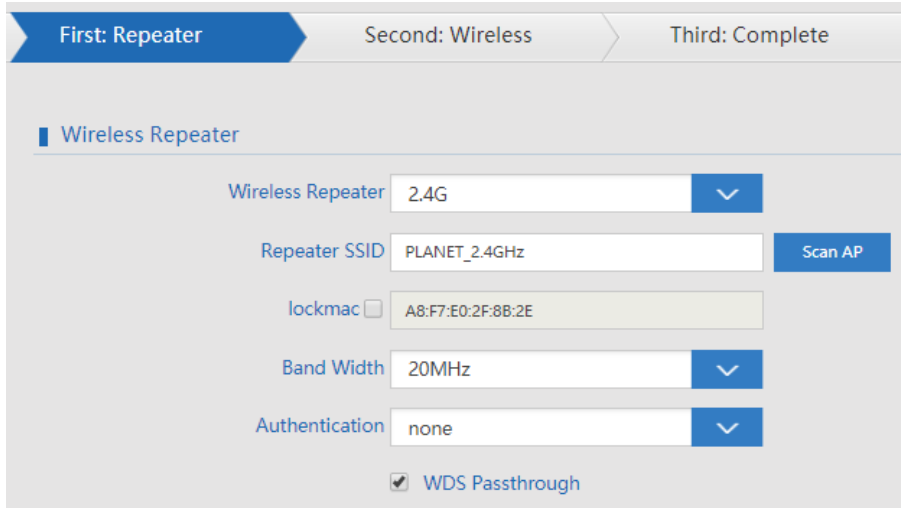


Figure 5-10 Repeater Mode -- Select AP

Configure wireless settings for 5G signal

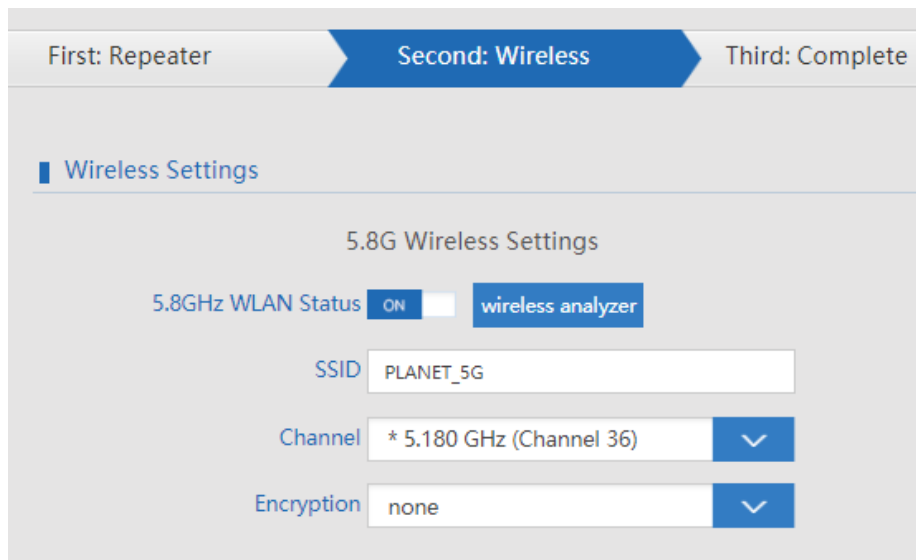


Figure 5-11 Repeater Mode – Configure 5G Wireless

The page includes the following fields:

Object	Description
WLAN Status	Select ON or OFF to enable or disable wireless LAN.
Wireless Analyzer	Press the button to check your wireless environment.
SSID	It is the wireless network name. The default SSID is PLANET_5G .
Channel	Select the operating channel you would like to use. The channel range will be changed by selecting a different domain.
Encryption	Select the wireless encryption. The default is None .

5.4 WISP Mode

Click “Wizard” → “WISP Mode” and the following page will be displayed. This section allows you to configure the WISP mode.

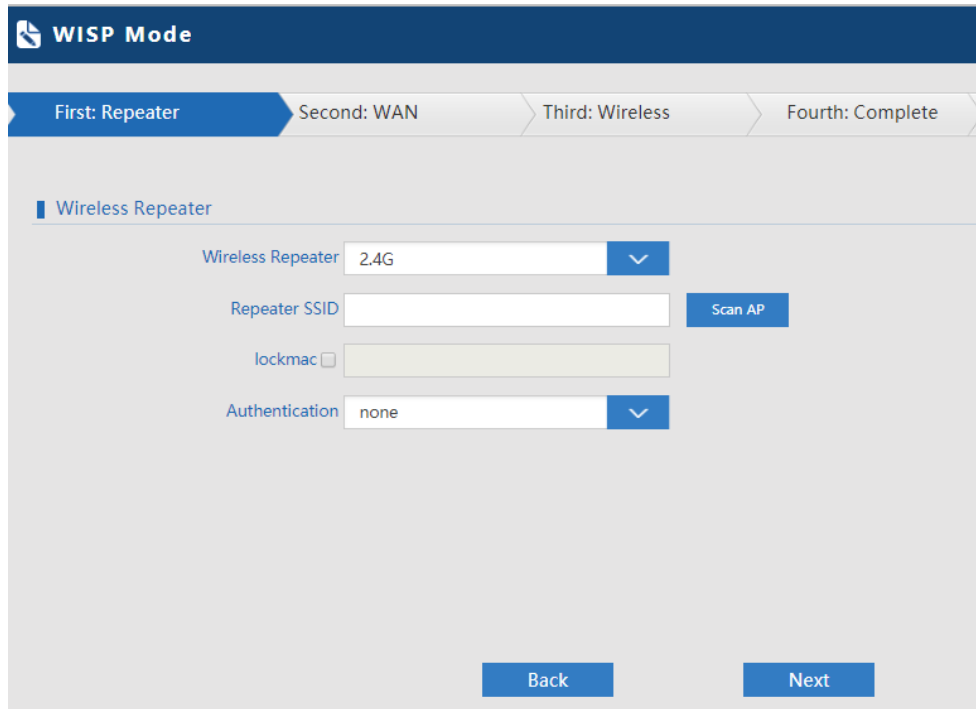


Figure 5-122 WISP Mode

The page includes the following fields:

Object	Description
Repeater SSID	Enter the root AP’s SSID or press “Scan AP” to select
Lockmac	Check to lock the root AP’ MAC address
Authentication	Select the wireless encryption of root AP

Wireless Repeater

Wireless Repeater

Repeater SSID

lockmac

Authentication

Figure 5-133 WISP Mode – Select AP

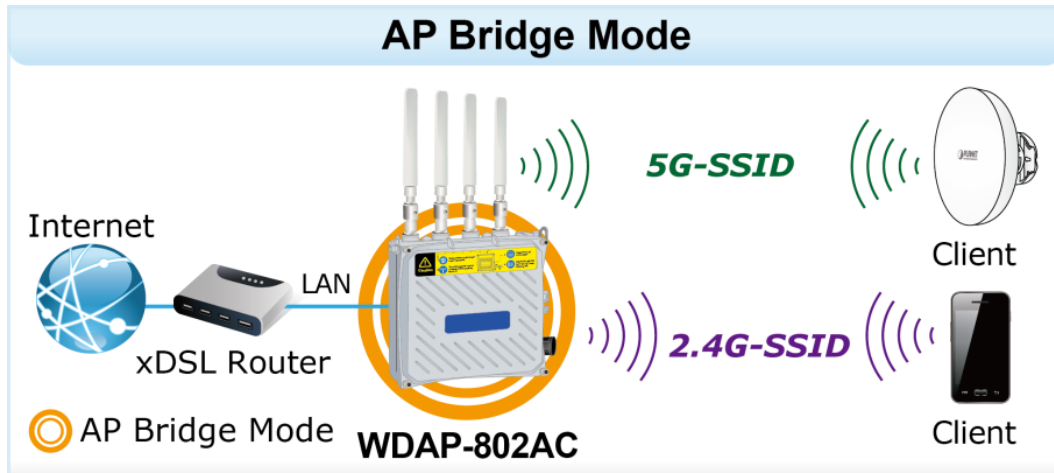
Static IP PPPoE(ADSL) **DHCP**

The current access mode is DHCP,Please click next to configure.

Figure 5-144 WISP Mode – Select WAN type

5.5 AP Mode

In the AP mode, the AP wireless interface and cable interface bridge together. Click “Wizard” → “AP Mode” and the following page will be displayed. This section allows you to configure the AP mode.



AP Mode
↶

First: Wireless
Second: LAN
Third: Complete

Wireless Settings

<p style="text-align: center; font-weight: bold;">2.4G Wireless Settings</p> <p>2.4GHz WLAN Status <input checked="" type="checkbox"/> wireless analyzer</p> <p>SSID <input type="text" value="PLANET_2.4G"/></p> <p>Channel <input type="text" value="* 2.437 GHz (Channel 6)"/> v</p> <p>Encryption <input type="text" value="none"/> v</p>	<p style="text-align: center; font-weight: bold;">5.8G Wireless Settings</p> <p>5.8GHz WLAN Status <input checked="" type="checkbox"/> wireless analyzer</p> <p>SSID <input type="text" value="PLANET_5G"/></p> <p>Channel <input type="text" value="* 5.180 GHz (Channel 36)"/> v</p> <p>Encryption <input type="text" value="none"/> v</p>
---	--

Location Information

AP Name

AP Location

Back
Next

Figure 5-155 AP Mode

The page includes the following fields:

Object	Description
WLAN	Select “ ON ” or “ OFF ” to enable or disable 2.4G or 5.8G wireless LAN.
Wireless Analyzer	Press the button to check your wireless environment.
Status SSID	It is the wireless network name. The default SSID is “ PLANET_2.4G ” and “ PLANET_5G ”.
Channel	Select the operating channel you would like to use. The channel range will be changed by selecting a different domain.
Encryption	Select the wireless encryption. The default is “ None ”.
AP Name	Enter the name of AP.
AP Location	Enter the location of AP.

Entering the LAN IP address.

First: Wireless
Second: LAN
Third: Complete

■ LAN settings

IP

Subnet Mask

5.6 Super WDS Mode

In the Super WDS mode, the wireless interface can be connected with other wireless APs through WDS, and the wireless interface and cable interface. Click **“Wizard”** → **“Super WDS Mode”** and the following page will be displayed. This section allows you to configure the AP mode.

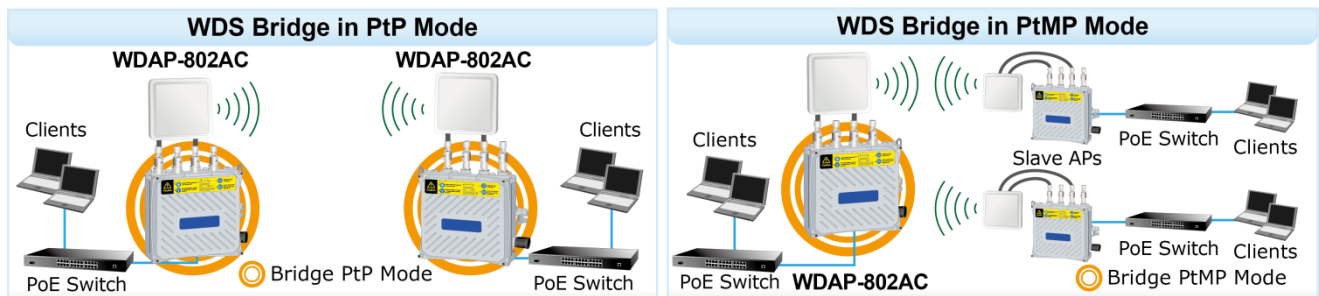
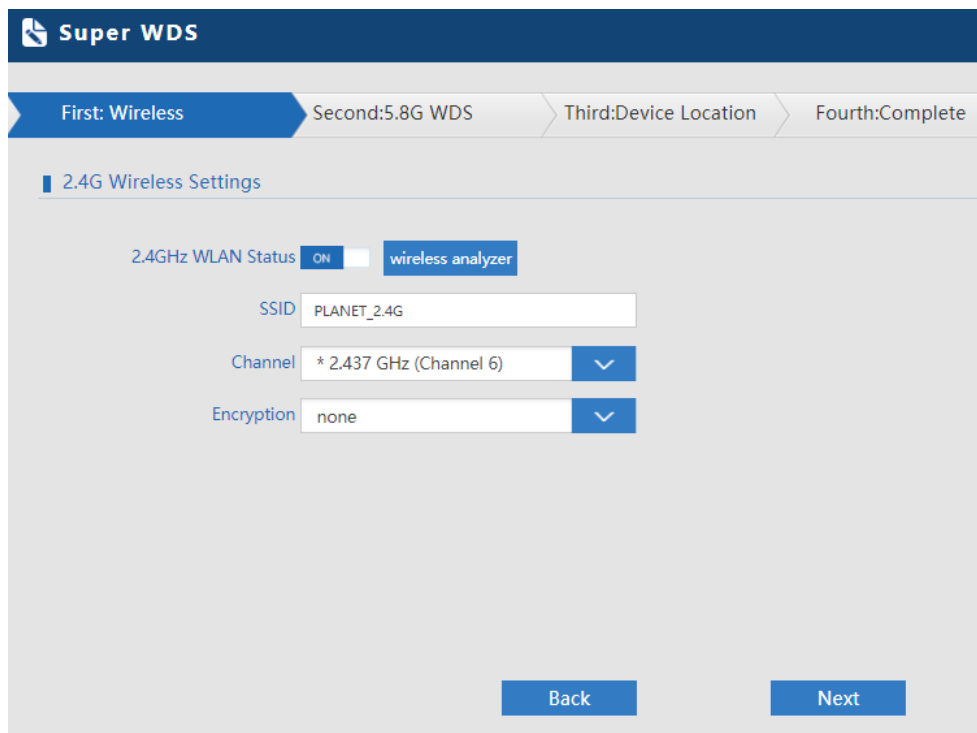



Figure 5-166 Super WDS Mode

The page includes the following fields:

Object	Description
2.4GHz WLAN	Select “ON” or “OFF” to enable or disable 2.4G wireless LAN.
Status SSID	It is the wireless network name. The default SSID is “PLANET_2.4G” .
Channel	Select the operating channel you would like to use. The channel range will be changed by selecting a different domain.
Encryption	Select the wireless encryption. The default is “None” .

AP1 enters the MAC address of AP2. And AP2 enters the MAC address of AP1. Then select the same Channel to establish the connection.

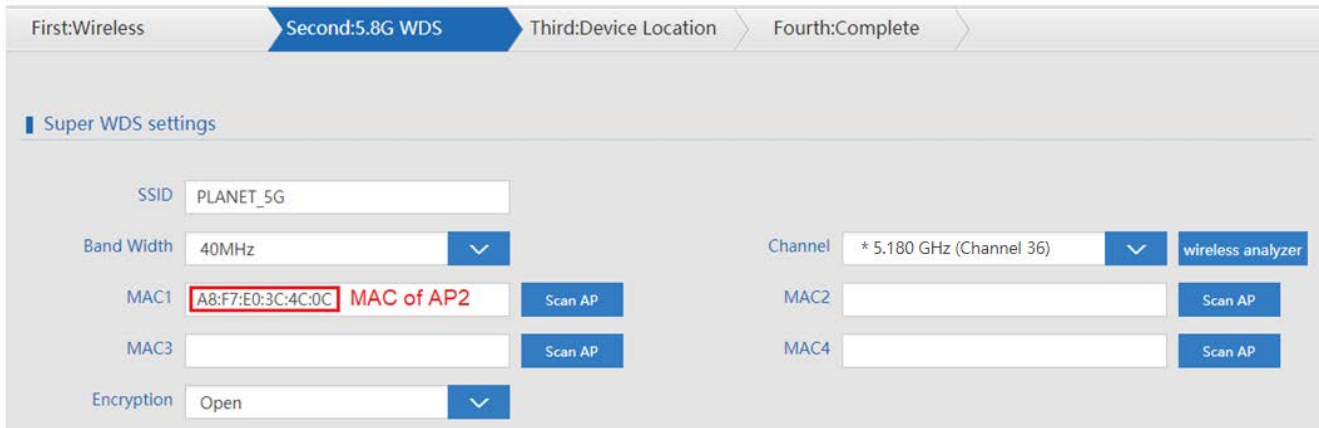


Figure 5-177 Super WDS Mode – AP1

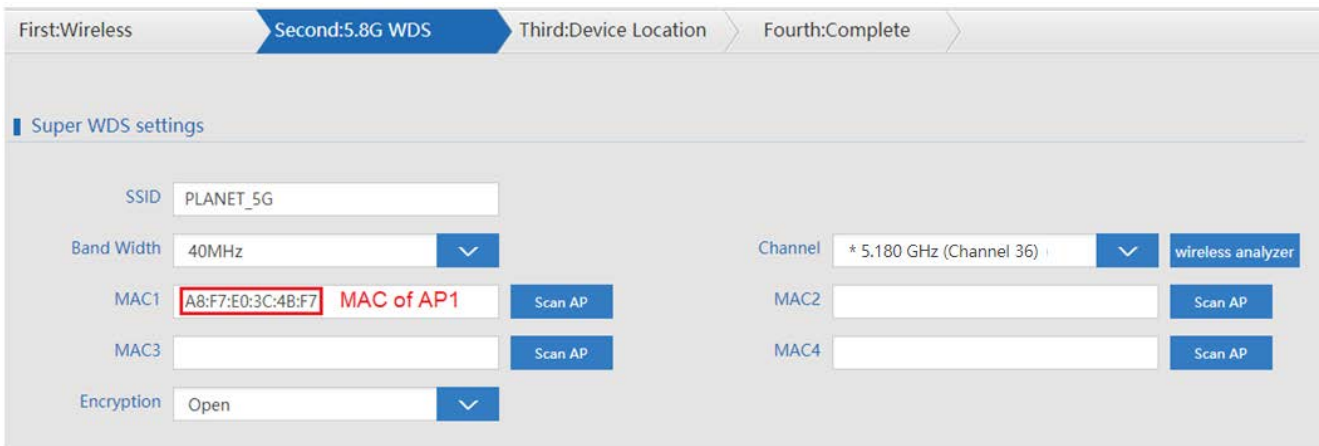


Figure 5-188 Super WDS Mode – AP2

The page includes the following fields:

Object	Description
SSID	It is the wireless network name. The default SSID is “ PLANET_5G ”.
Bandwidth	Select the operating channel width, “ 20MHZ ” or “ 40MHZ ”.
Channel	Select the operating channel you would like to use. The channel range will be changed by selecting a different domain.
MAC	Enter the MAC address of slave AP.
Encryption	Select the wireless encryption. The default is “ Open ”.

5.7 Advanced

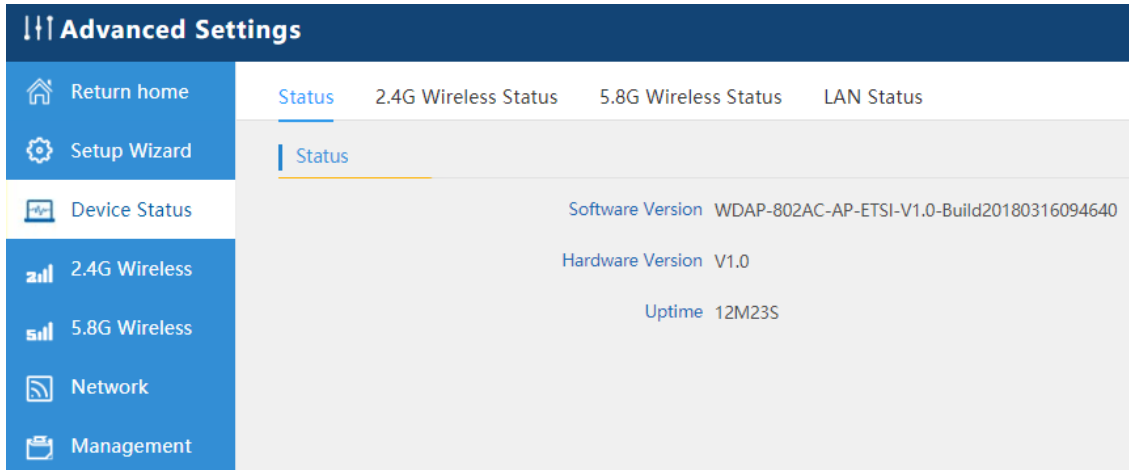


Figure 5-199 Advanced

5.7.1 Device Status

5.7.1.1. Status

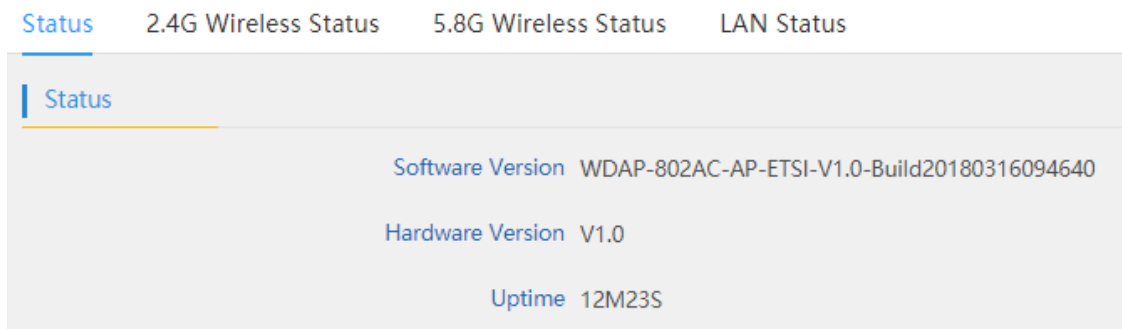


Figure 5-20 Status

The page includes the following fields:

Object	Description
Software Version	It shows the firmware version of AP.
Hardware Version	It shows the hardware version of AP.
Uptime	It shows the AP uptime.

5.7.1.2. 2.4G / 5.8G Wireless Status

[Status](#) [2.4G Wireless Status](#) [5.8G Wireless Status](#) [LAN Status](#)

2.4G Wireless Status

2.4G Wireless Status Enable

SSID PLANET_2.4G

MAC A8:F7:E0:3C:3E:94

Channel 6

Encryption None

Connected Users 0 [Client list](#)

5.8G Wireless Status

5.8G Wireless Status Enable

SSID PLANET_5G

MAC A8:F7:E0:3C:3E:95

Channel 36

Connected Users 0 [Client list](#)

Figure 5-21 Wireless Status

The page includes the following fields:

Object	Description
2.4G / 5.8G Wireless Status	It shows the wireless status is Enable or Disable .
SSID	It shows the SSID of the AP. Default is PLANET_2.4G or PLANET_5G .
MAC	It shows the MAC address of the AP.
Channel	It shows the channel of the AP. Default 2.4GHz is channel 6 and 5GHz is channel 36.
Encryption	It shows the wireless encryption.
Connected Users	It shows the wireless connected users.

5.7.1.3. LAN Status

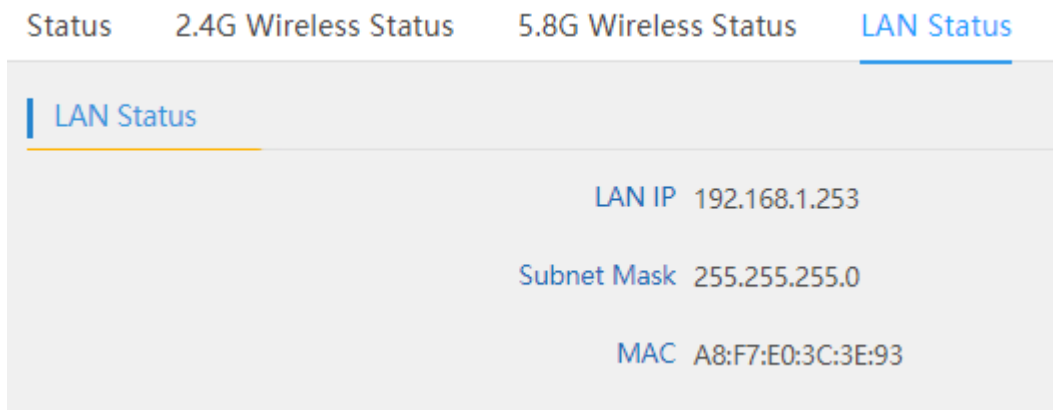


Figure 5-222 LAN Status

The page includes the following fields:

Object	Description
LAN IP	It shows the IP of the AP. Default is 192.168.1.253 .
Subnet Mask	It shows the subnet mask of the AP. Default is 255.255.255.0 .
MAC	It shows the MAC address of the LAN port.

5.7.2 2.4G / 5.8G Wireless

5.7.2.1. 2.4G / 5.8G Basic Settings

2.4G Basic Settings 2.4G Virtual AP 2.4G Access Control 2.4G Advanced Settings

Wireless Basic Settings

Wireless Status ON wireless analyzer

SSID

Broadcast SSID Disable Enable

WMM Disable Enable

Channel

Band Width

Channel

Authentication

Encryption

Figure 5-233 2.4G Basic Settings

Super WDS settings

SSID	<input type="text" value="PLANET_5G"/>		
Band Width	<input type="text" value="40MHz"/> ▼	Channel	<input type="text" value="* 5.180 GHz (Channel 36)"/> ▼ wireless analyzer
MAC1	<input type="text"/>	SSID1	<input type="text"/> Scan AP
MAC2	<input type="text"/>	SSID2	<input type="text"/> Scan AP
MAC3	<input type="text"/>	SSID3	<input type="text"/> Scan AP
MAC4	<input type="text"/>	SSID4	<input type="text"/> Scan AP
Encryption	<input type="text" value="Open"/> ▼		

Figure 5-244 5G Basic Settings

The page includes the following fields:

Object	Description
Wireless Status	It shows the wireless status is Enable or Disable
SSID	It shows the SSID of the AP. Default is PLANET_2.4G or PLANET_5G
Broadcast SSID	Select Enable or Disable the SSID
WMM	It supports Wi-Fi multimedia and default is enabled
Bandwidth	It displays operating channel width which is 20MHz or 40MHz
Channel	It shows the channel of the AP. Default 2.4GHz is Channel 6 and 5GHz is Channel 36 .
Encryption	It shows the wireless encryption

5.7.2.2. Virtual AP

2.4G Basic Settings 2.4G Virtual AP 2.4G Access Control 2.4G Advanced Settings

2.4G Virtual AP

Virtual AP1 Virtual AP2 Virtual AP3

Wireless Status OFF

SSID

Broadcast SSID Disable Enable

WMM Disable Enable

Encryption

5.8G Basic Settings 5.8G Virtual AP 5.8G Access Control 5.8G Advanced Settings

5.8G Virtual AP

Virtual AP1 Virtual AP2 Virtual AP3

Wireless Status OFF

SSID

Broadcast SSID Disable Enable

WMM Disable Enable

Encryption

Figure 5-255 Virtual AP

The page includes the following fields:

Object	Description
Wireless Status	It shows the wireless status is ON or OFF
SSID	It shows the SSID of the AP. Default is PLANET_2.4G_1 or PLANET_5G_1
Broadcast SSID	Select Enable or Disable the SSID
WMM	It supports Wi-Fi multimedia and default is enabled
Encryption	It shows the wireless encryption

5.7.2.3. Access Control

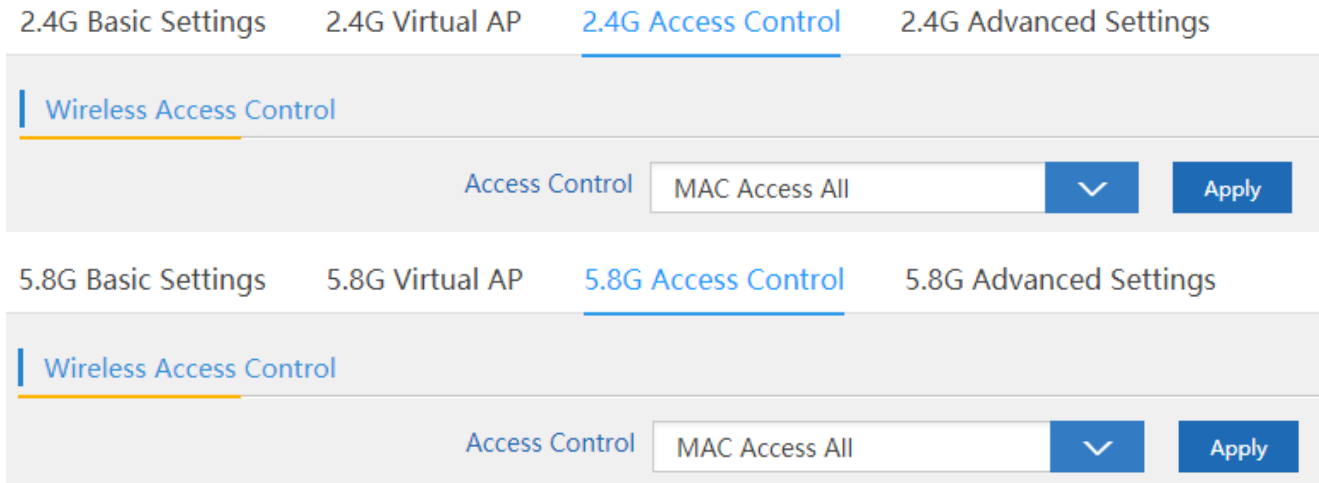


Figure 5-266 Access Control -- Access All

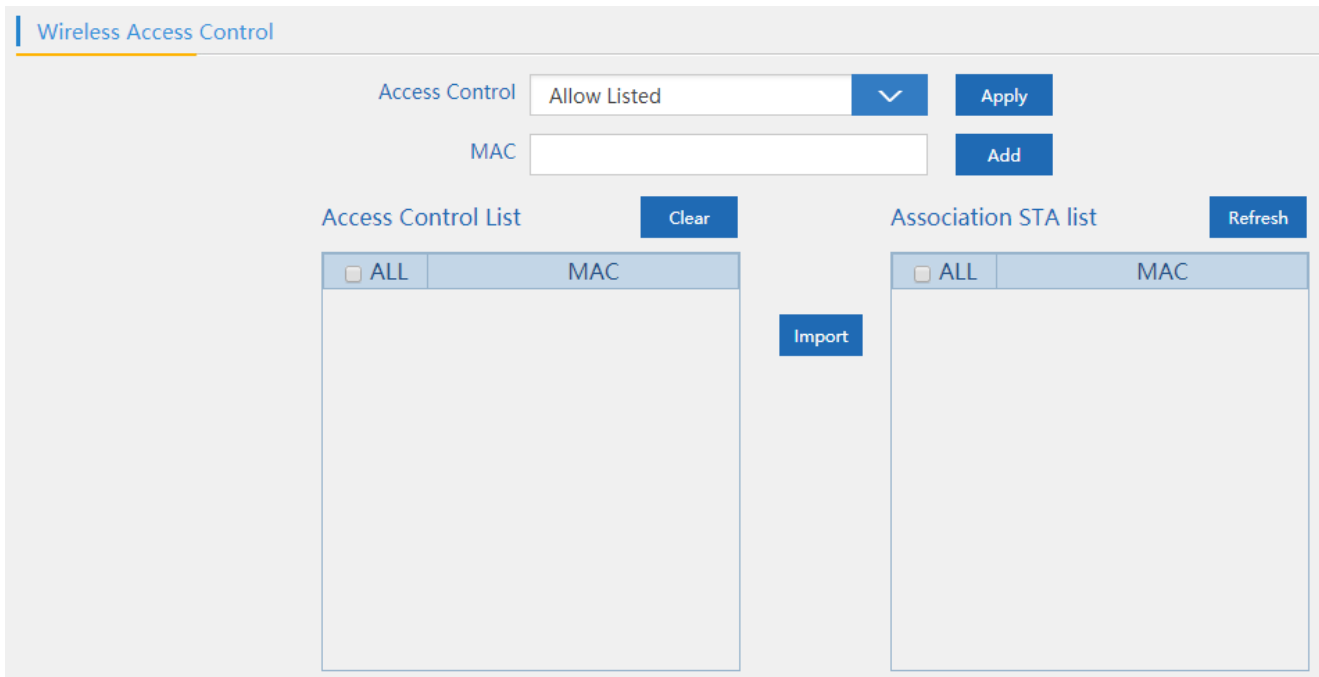


Figure 5-277 Access Control – Allow Listed

The page includes the following fields:

Object	Description
Access Control	Select MAC Access All , Allow Listed or Deny Listed
MAC	Enter the MAC address that you need to allow or deny to access
Clear	Delete the MAC address that you select

5.7.2.4. Advanced Settings

| 2.4G Advanced Settings

Regional ▼

MODE ▼

RF Output Power ▼

Packet Threshold (256-2346)

Beacon interval (100-1024)ms

MAX User (Range 0-64 0 not limited)

Coverage Threshold (-95dBm~-65dBm)

Distance (0 Meter-20000 Meter)

Aggregation ON OFF Short GI ON OFF User isolation ON OFF

| 5.8G Advanced Settings

Regional ▼ Channel(36-64),(100-128),(132-140)

MODE ▼

RF Output Power ▼

Packet Threshold (256-2346)

Beacon interval (100-1024)ms

MAX User (Range 0-64 0 not limited)

Coverage Threshold (-95dBm~-65dBm)

Distance (0 Meter-20000 Meter)

Aggregation ON OFF Short GI ON OFF User isolation ON OFF DFS switch ON OFF

DFS opened will cause connect fail in one key connect procedure

Figure 5-288 Advanced Settings

The page includes the following fields:

Object	Description
Regional	It shows FCC or ETSI depending on the firmware.
Mode	Select 802.11N/G or 802.11B/G in 2.4G AP. Select 802.11A or 802.11AN in 5G AP.
RF Output Power	The range of transmit power is 100% , 75% , 50% , 25% or 12.5% . In case of shortening the distance and the coverage of the wireless network, input a smaller value to reduce the radio transmission power.
Packet Threshold	When the length of a data packet exceeds this value, the router will send an RTS frame to the destination wireless node, and the latter will reply with a CTS frame, and thus they are ready to communicate. The default value is 2346 .
Beacon interval	Set beacon interval, the value range is from 100 to 1024. The default value is 100 .
Maximum Users	The maximum users are 64 .
Coverage Threshold	The coverage threshold is to limit the weak signal of clients occupying session. The default is -90dBm.
Distance	Select a specified distance of the two nodes.
Aggregation	A part of the 802.11n standard that allows sending multiple frames per single access to the medium by combining frames together into one larger frame. It creates the larger frame by combining smaller frames with the same physical source, destination end points, and traffic class (QoS) into one large frame with a common MAC header.
Short GI	Guard intervals are used to ensure that distinct transmissions do not interfere with one another.
User Isolation	Enable it to isolate each connected wireless client so that they cannot access mutually.

5.7.3 Network

5.7.3.1. LAN Settings

LAN Settings VLAN SNMP

LAN Settings

IP

Subnet Mask

Figure 5-299 LAN Settings

The page includes the following fields:

Object	Description
IP	Enter an IP address of LAN.
Subnet Mask	Enter a subnet mask of LAN.

5.7.3.2. VLAN

LAN Settings **VLAN** SNMP

VLAN

VLAN-ID(3-4094)	2.4G				5.8G			
	AP	VAP1	VAP2	VAP3	AP	VAP1	VAP2	VAP3
<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure 5-30 VLAN

The page includes the following fields:

Object	Description
VLAN ID	Enter the VLAN ID from 3 to 4094
AP	Select AP or VAP included in the VLAN

5.7.3.3. SNMP

LAN Settings VLAN SNMP

SNMP Setting

Read Community Name

Write Community Name

Trap Destination Address

Figure 5-31 SNMP

The page includes the following fields:

Object	Description
Read Community	Enter the read community, default is public
Write Community	Enter the write community, default is private
Trap Destination Address	Enter the SNMP trap IP address, default is 192.168.1.1

5.7.4 Management

5.7.4.1. System Time

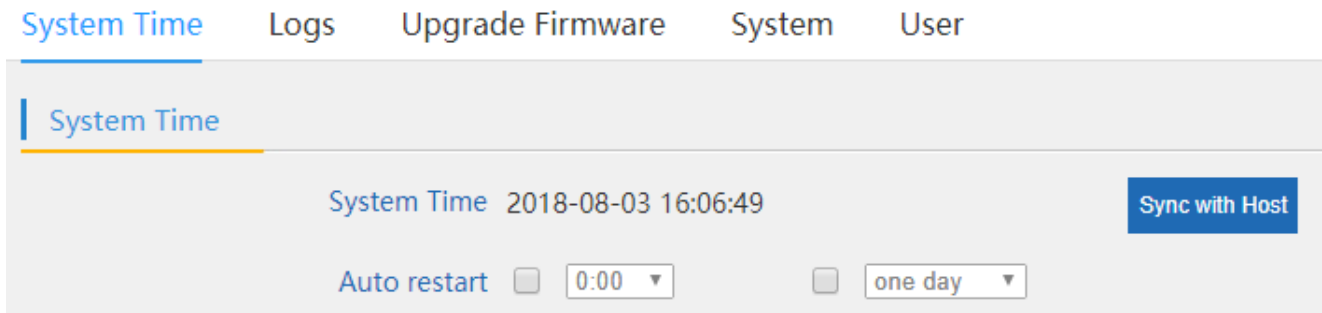


Figure 5-32 System Time

The page includes the following fields:

Object	Description
System Time	It shows the system time
Auto Restart	Select the time that you want to reboot

5.7.4.2. Logs

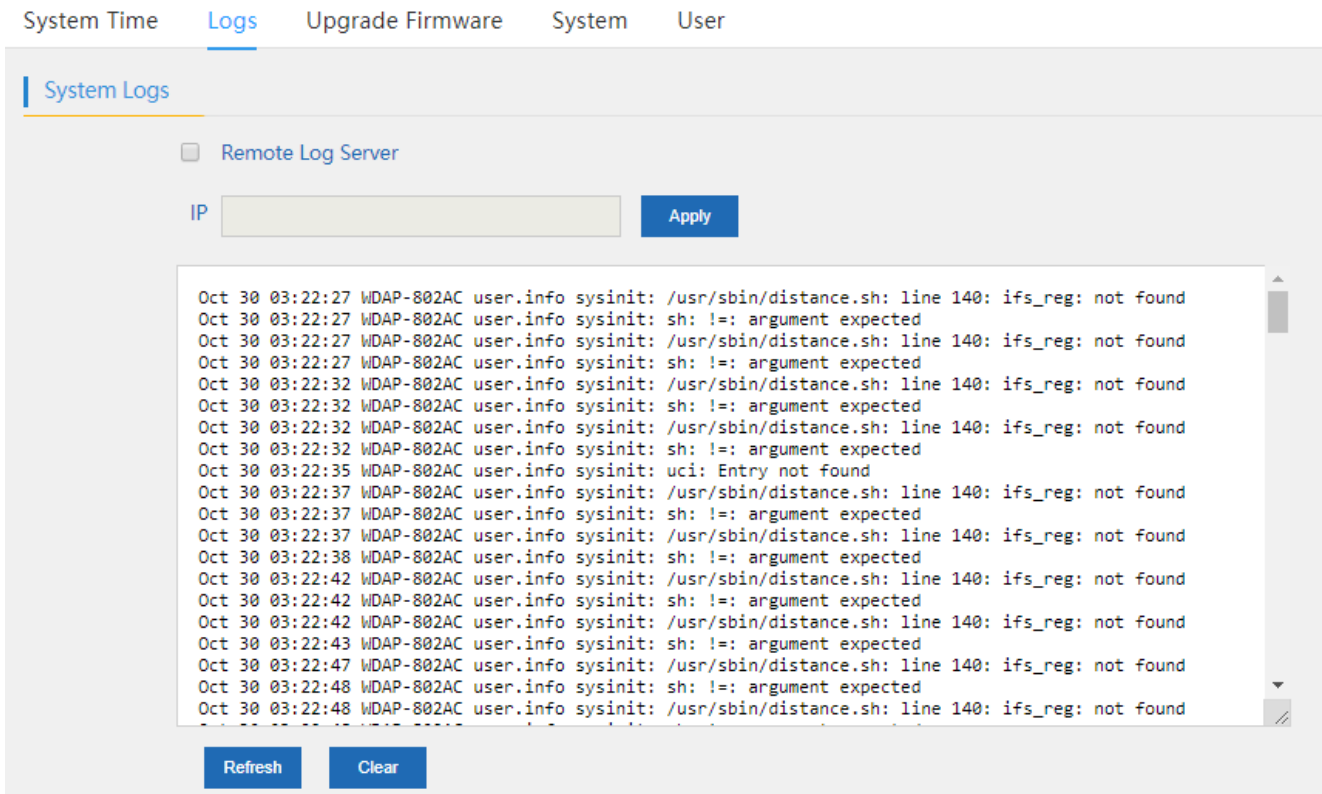


Figure 5-33 Logs

The page includes the following fields:

Object	Description
Remote Log Server	Enable remote log server
IP	Enter the IP of remote log server
Refresh	Press to refresh the system log
Clear	Press to clear the system log

5.7.4.3. Upgrade Firmware

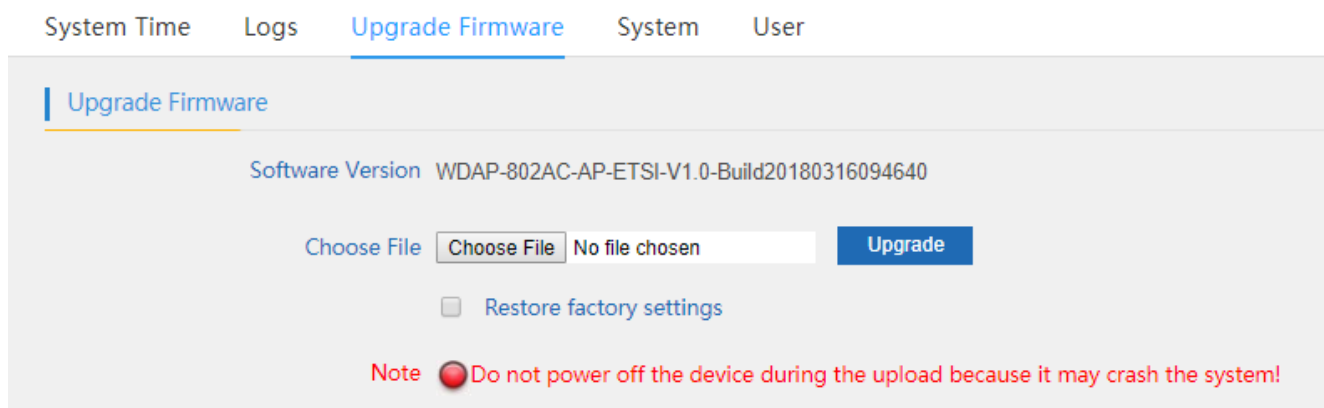


Figure 5-34 Upgrading Firmware

The page includes the following fields:

Object	Description
Browse	Press to select the firmware file
Upgrade	Press to upgrade the firmware
Restore Factory Settings	Select to reset the device to default when upgrading firmware

5.7.4.4. System

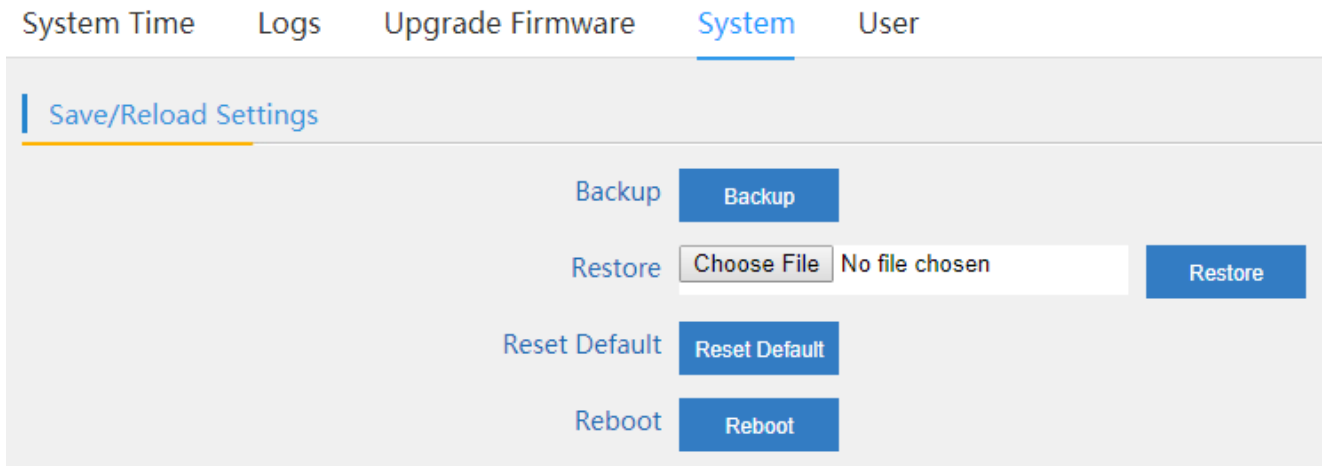


Figure 5-35 System

The page includes the following fields:

Object	Description
Backup	Press to back up the configuration
Browse	Press to select the configuration file
Restore	Press to restore the configuration
Reset Default	Press to reset the device to default
Reboot	Press to reboot the device

5.7.4.5. User

System Time Logs Upgrade Firmware System User

User

Old Password

Password

Confirm Password

Figure 5-36 User

The page includes the following fields:

Object	Description
Old Password	Enter the old password
Password	Enter the new password
Confirm Password	Enter the new password again

Chapter 6. Quick Connection to a Wireless Network

In the following sections, the **default SSID** of the WDAP-802AC 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

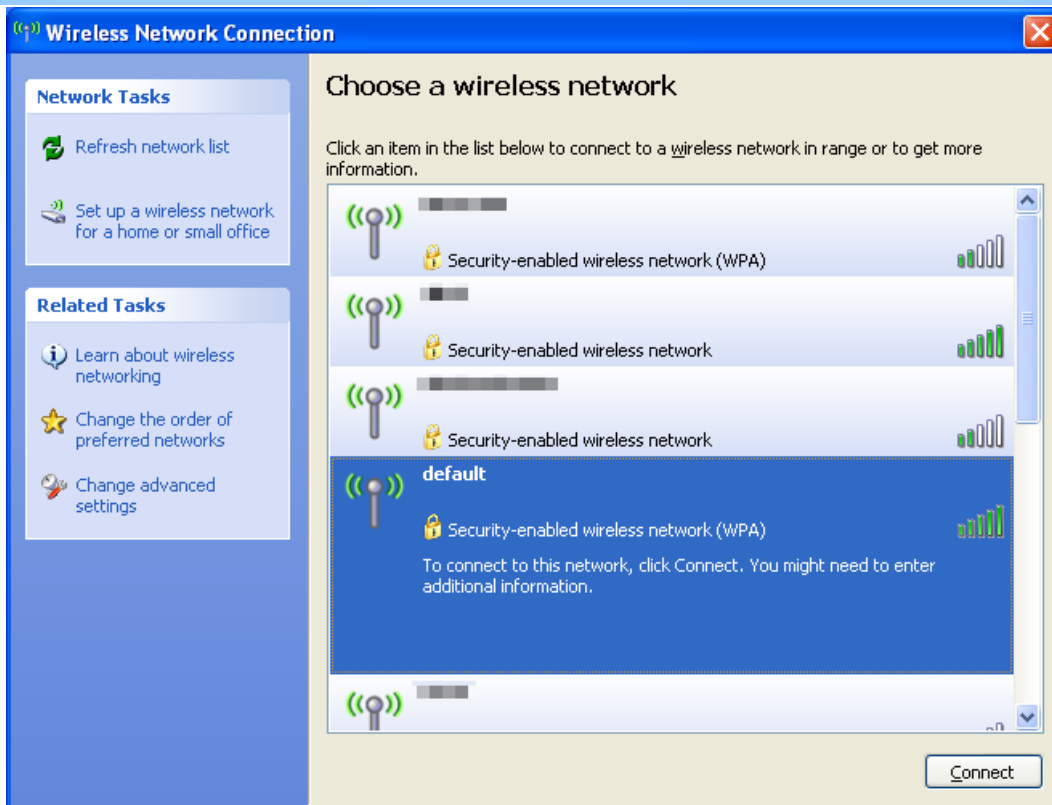


Figure 6-2 Choosing a Wireless Network

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 5.7.2.1](#)
- (3) Click the [Connect] button

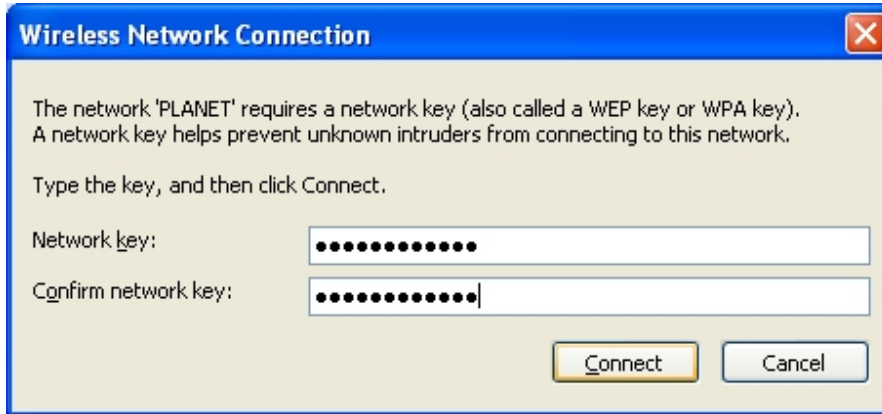


Figure 6-3 Entering the Network Key

Step 5: Check if “**Connected**” is displayed

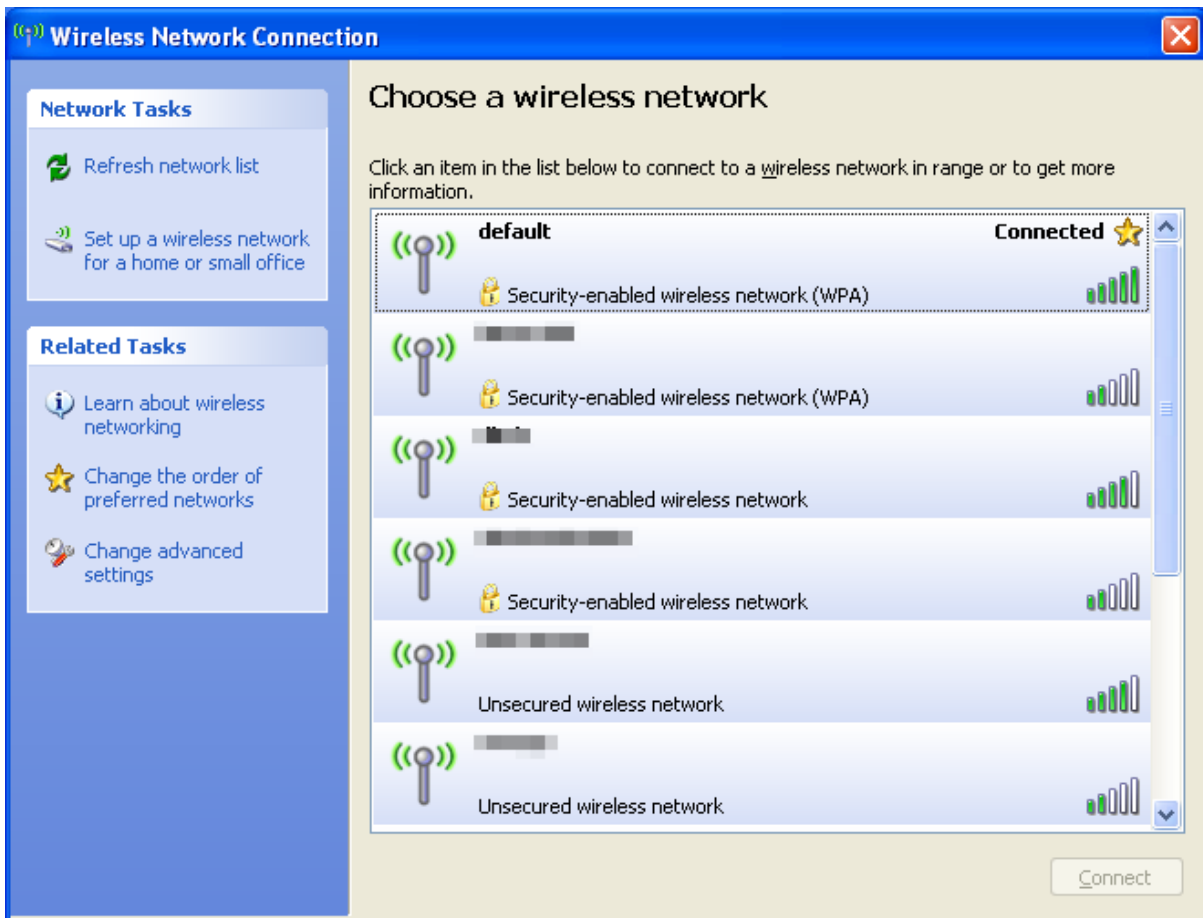


Figure 6-4 Choosing a Wireless Network -- Connected



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

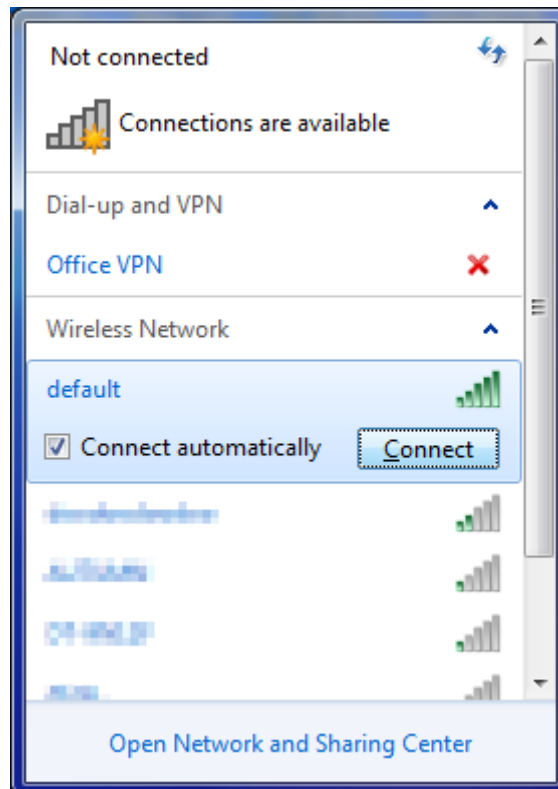


Figure 6-6 WLAN AutoConfig



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 5.7.2.1](#)
- (3) Click the [OK] button



Figure 6-7 Typing the Network Key

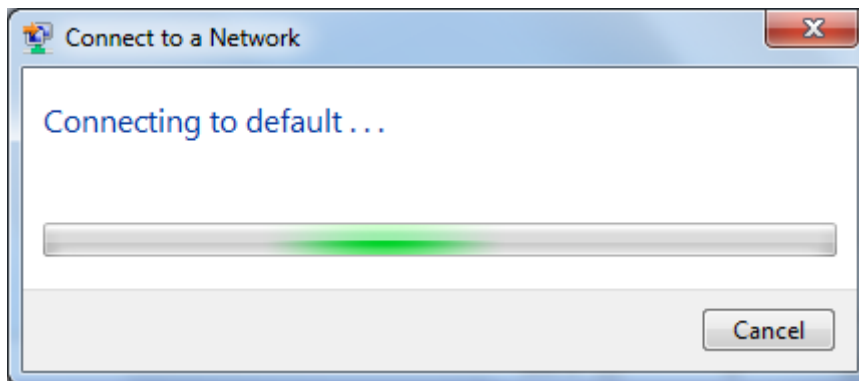


Figure 6-8 Connecting to a Network

Step 5: Check if “**Connected**” is displayed

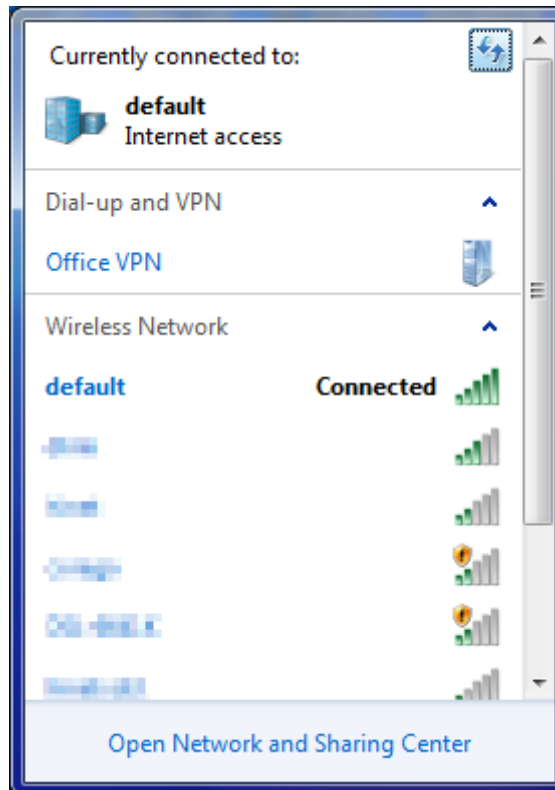


Figure 6-9 Connected to a Network

6.3 Mac OS X 10.x

In the following sections, the default SSID of the WDAP-802AC 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 5.7.2.1](#)
- (2) Click the [OK] button

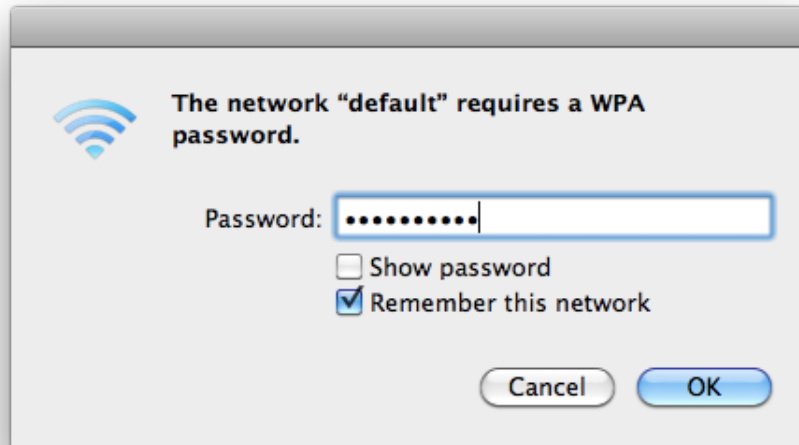


Figure 6-12 Enter the Password



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.

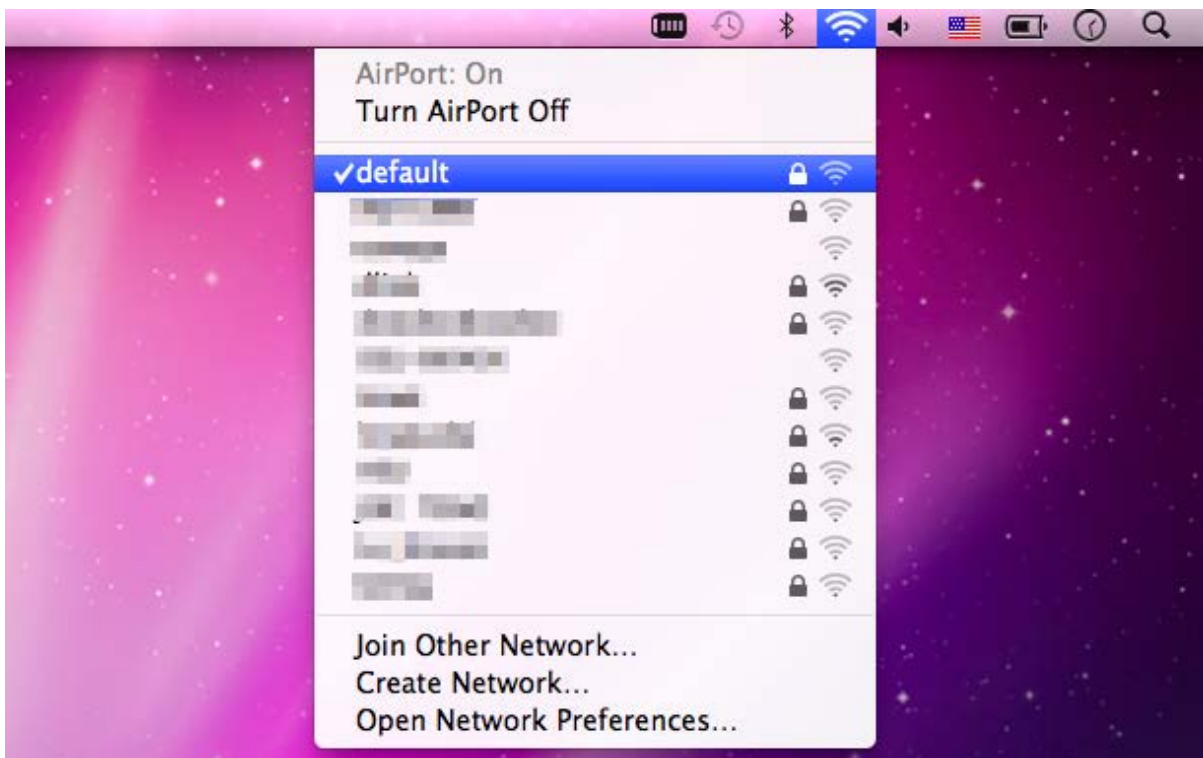


Figure 6-13 Connected to the Network

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**

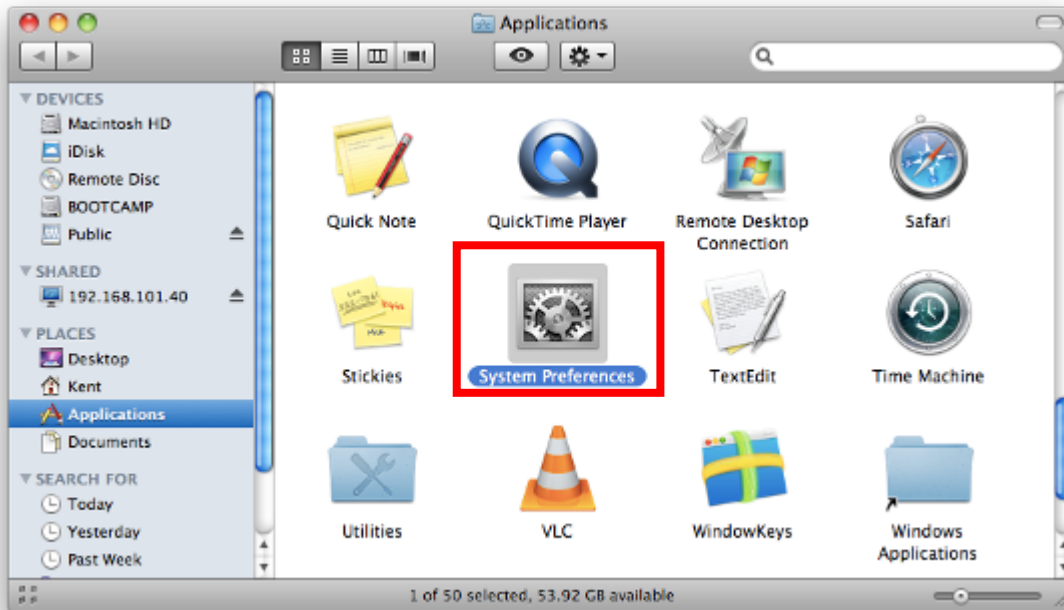


Figure 6-14 System Preferences

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

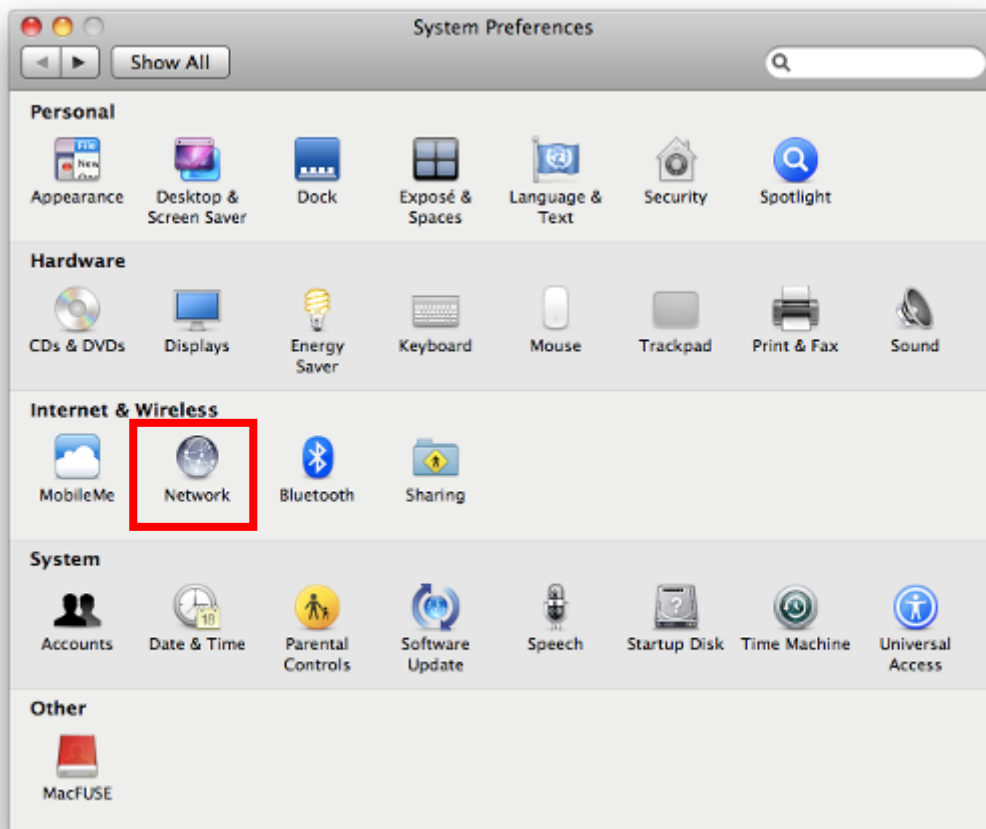


Figure 6-15 System Preferences -- Network

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".

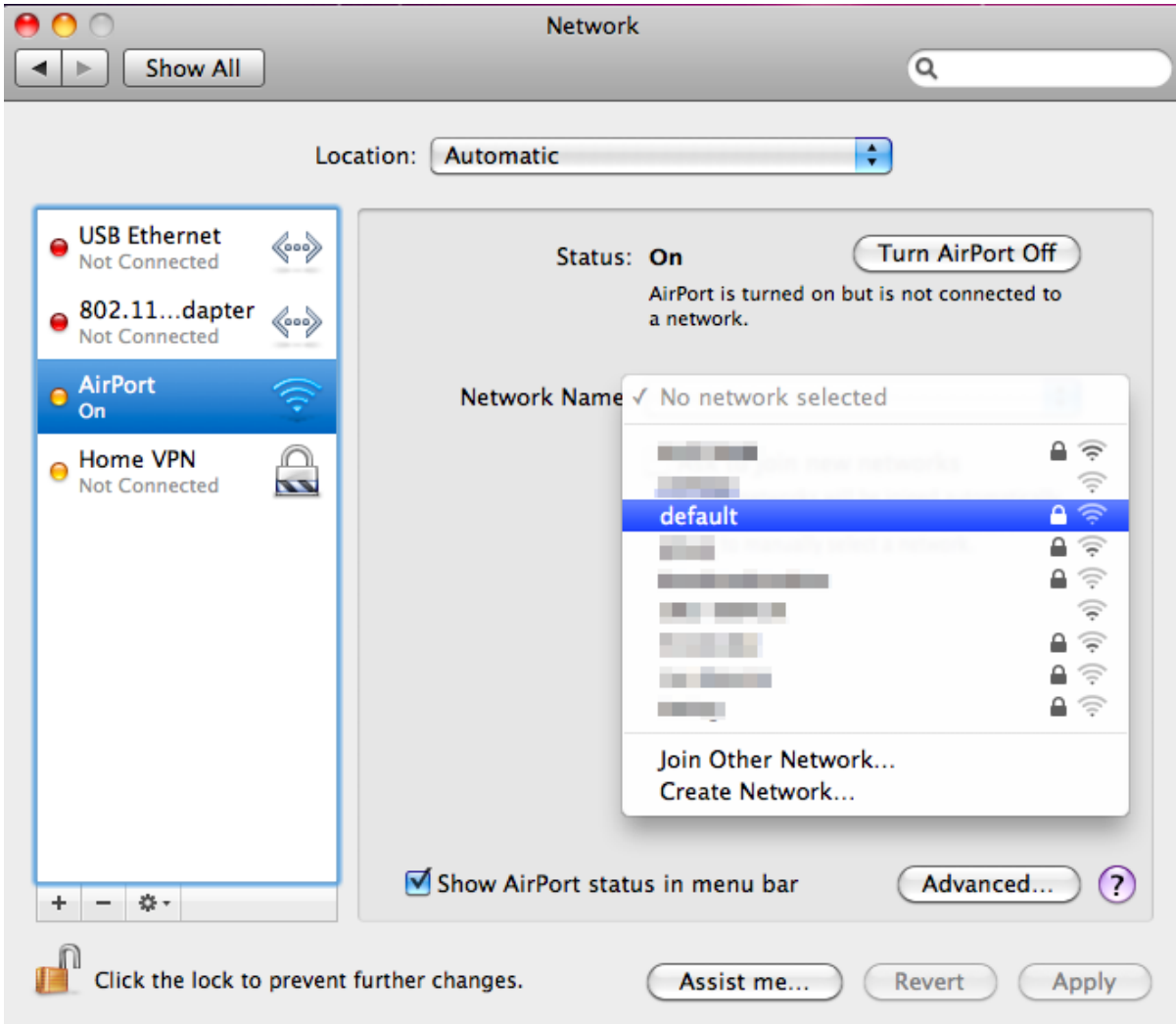


Figure 6-16 Selecting the Wireless Network

6.4 iPhone/iPod Touch/iPad

In the following sections, the **default SSID** of the WDAP-802AC is configured to “**default**”.

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

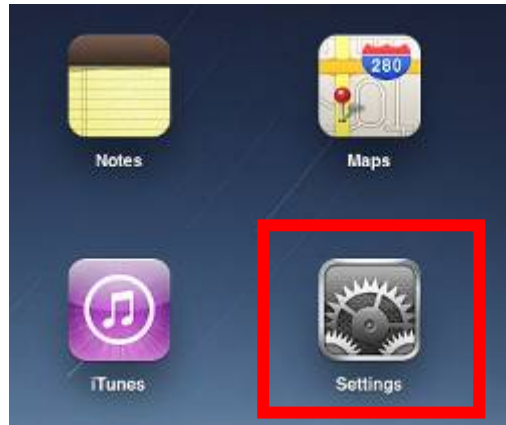


Figure 6-17 iPhone – Settings icon

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

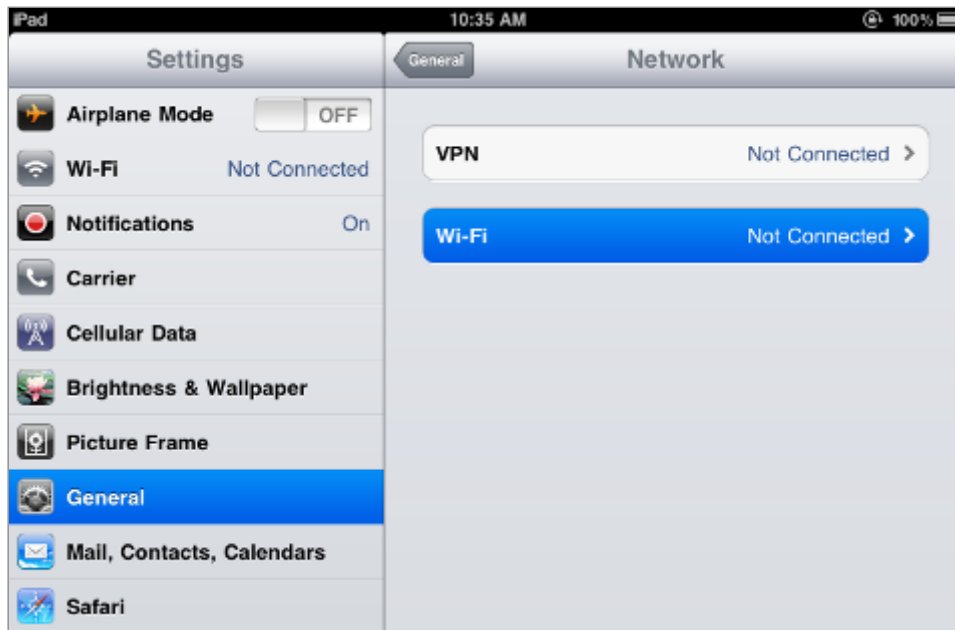


Figure 6-19 Wi-Fi Setting – Not Connected

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 5.7.2.1](#)
- (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 WDAP-802AC in your Ethernet environment, the Planet Smart Discovery Utility is an ideal solution.

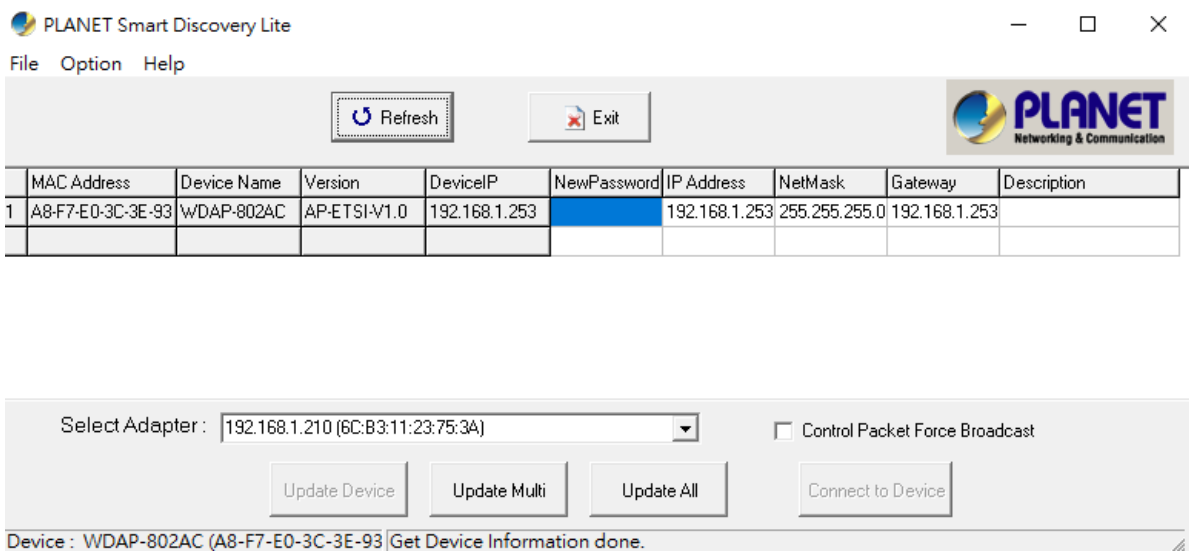
The following installation instructions guide you to running the Planet Smart Discovery Utility.

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

Step 2: 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.

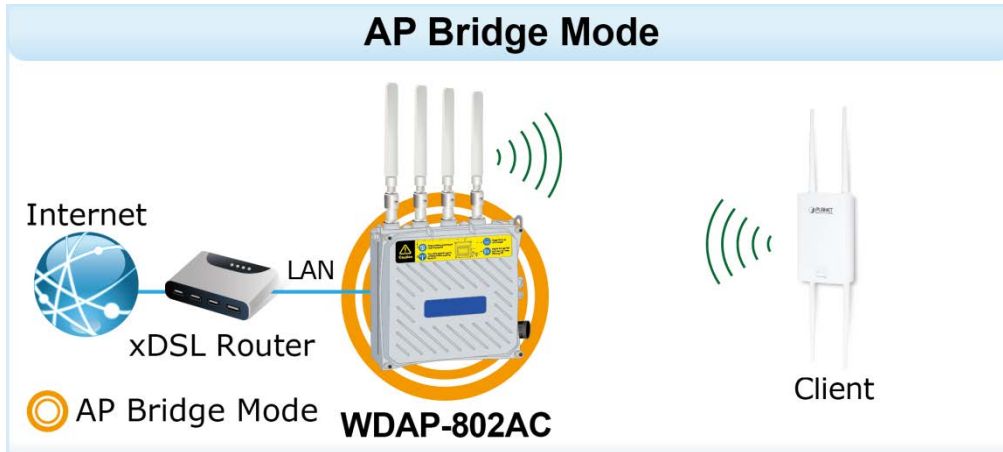


The fields in white background can be modified directly and then you can apply the new setting by clicking **“Update Device”**.

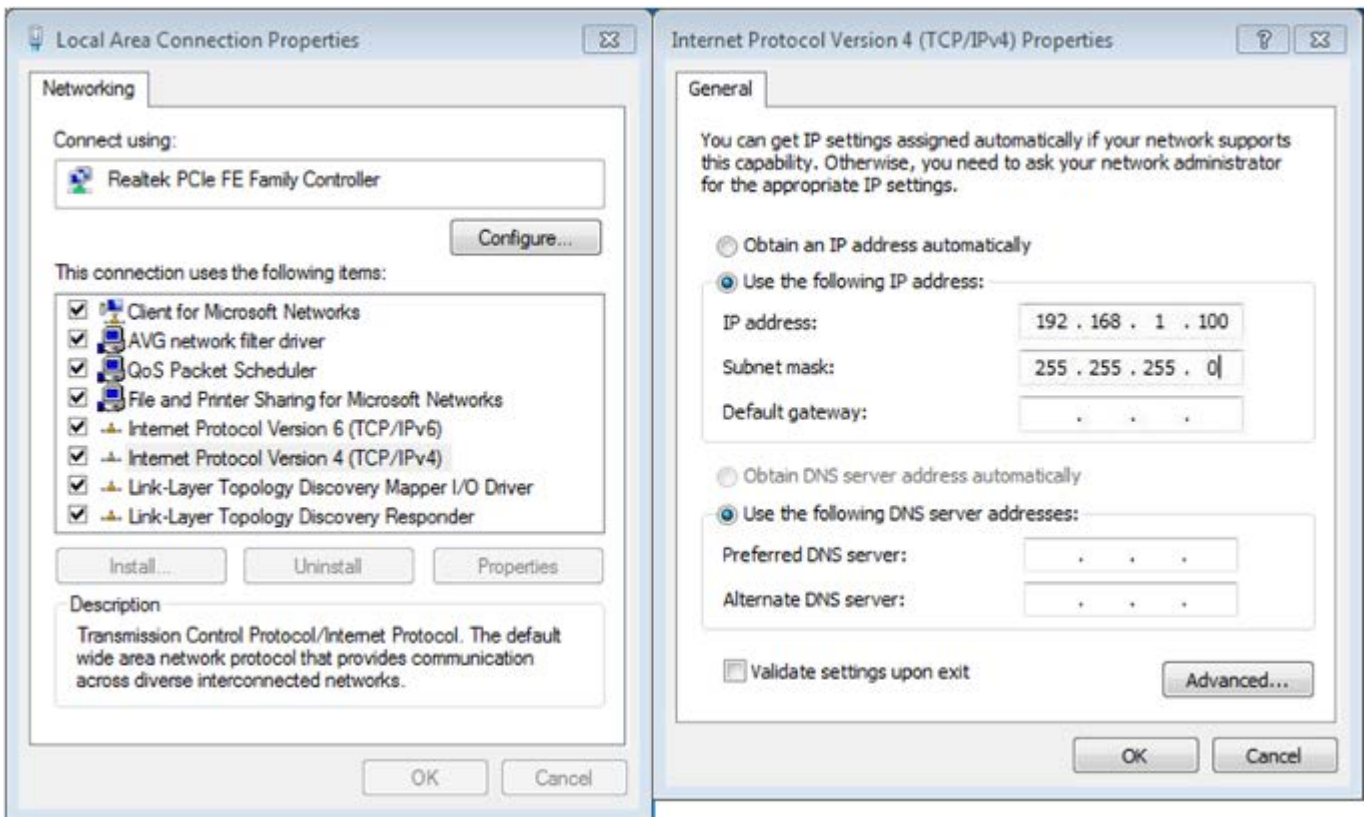
Appendix B: FAQs

Q1: How to set up the AP Client Connection

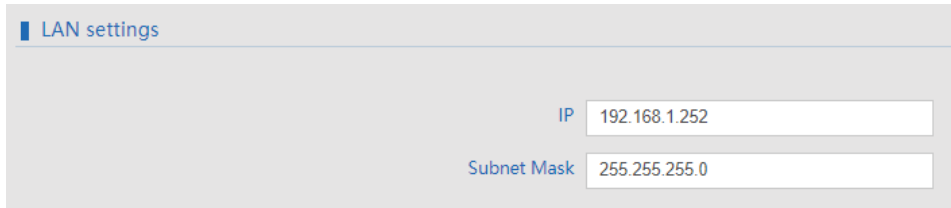
Topology:



Step 1. Use static IP in the PCs that are connected with AP-1(Site-1) and AP-2 (Site-2). In this case, Site-1 is "192.168.1.100", and Site-2 is "192.168.1.200".



Step 2. In AP-2, change the default IP to the same IP range but different from AP-1. In this case, the IP is changed to **192.168.1.252**.



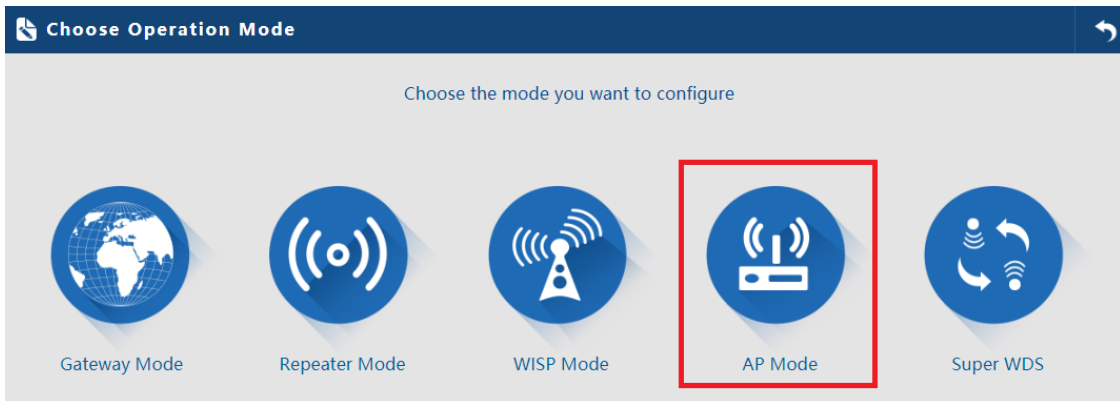
LAN settings

IP 192.168.1.252

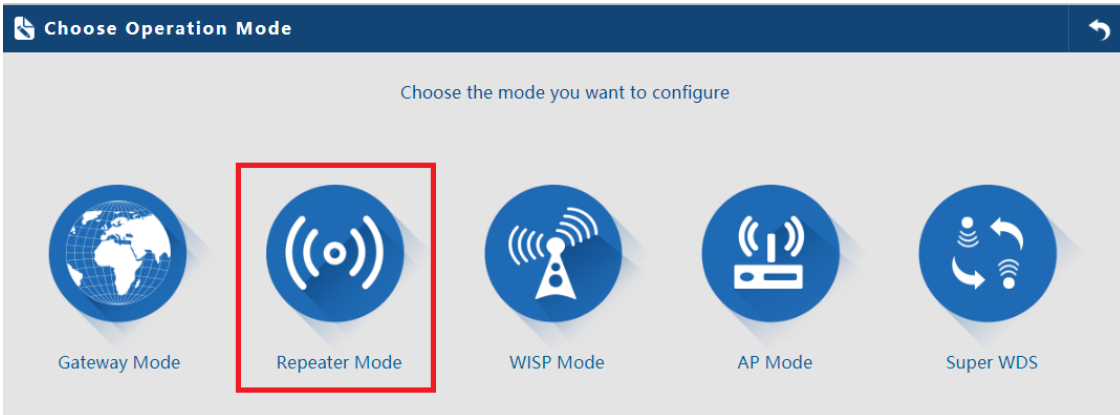
Subnet Mask 255.255.255.0

Step 3. In AP-1, go to “**Wizard**” to configure it to **AP Mode**. In AP-2, configure it to **Repeater Mode**.

AP-1

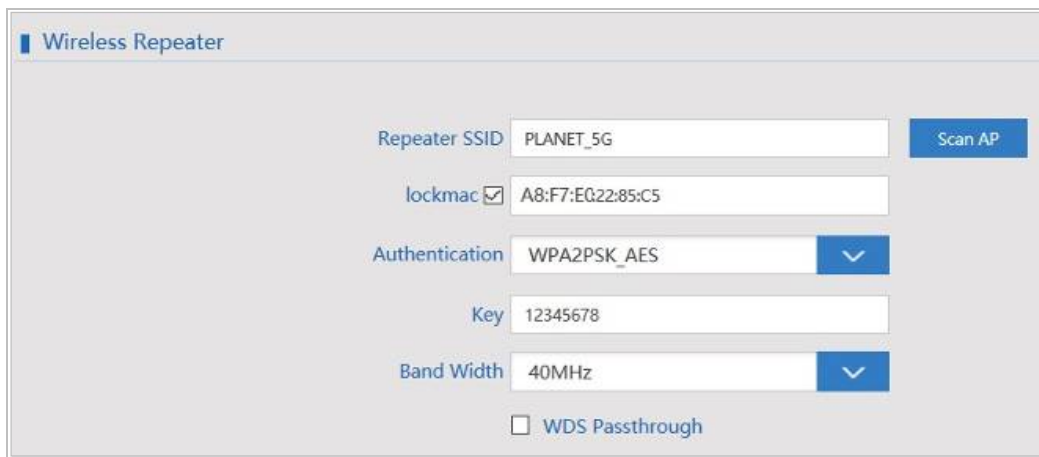
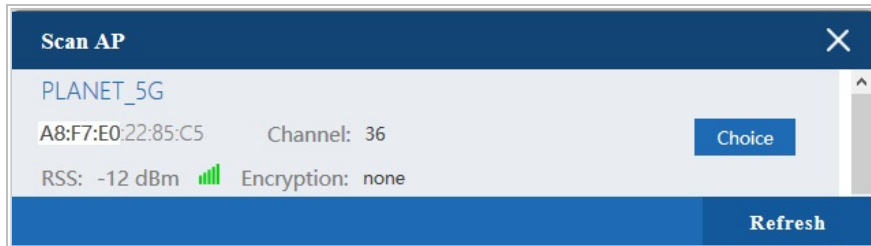


AP-2



Step 4. In AP-2, press **Scan AP** to search the AP-1. You can also enter the MAC address, SSID, encryption and bandwidth if you know what they are.

Note. WDS passthrough should be **disable** if the root AP is the different model from client AP.



Step 5. Click **“Next”** to finish the setting.

Step 6. Click **“Device Status”** to check connection status.



Step 7. Use command line tool to ping each other to ensure the link is successfully established.

From Site-1, ping 192.168.1.200, and in Site-2, ping 192.168.1.100.


```

C:\WINDOWS\system32\CMD.exe - ping 192.168.1.100 -t
Destination host unreachable.
Destination host unreachable.
Destination host unreachable.
Destination host unreachable.
Destination host unreachable.

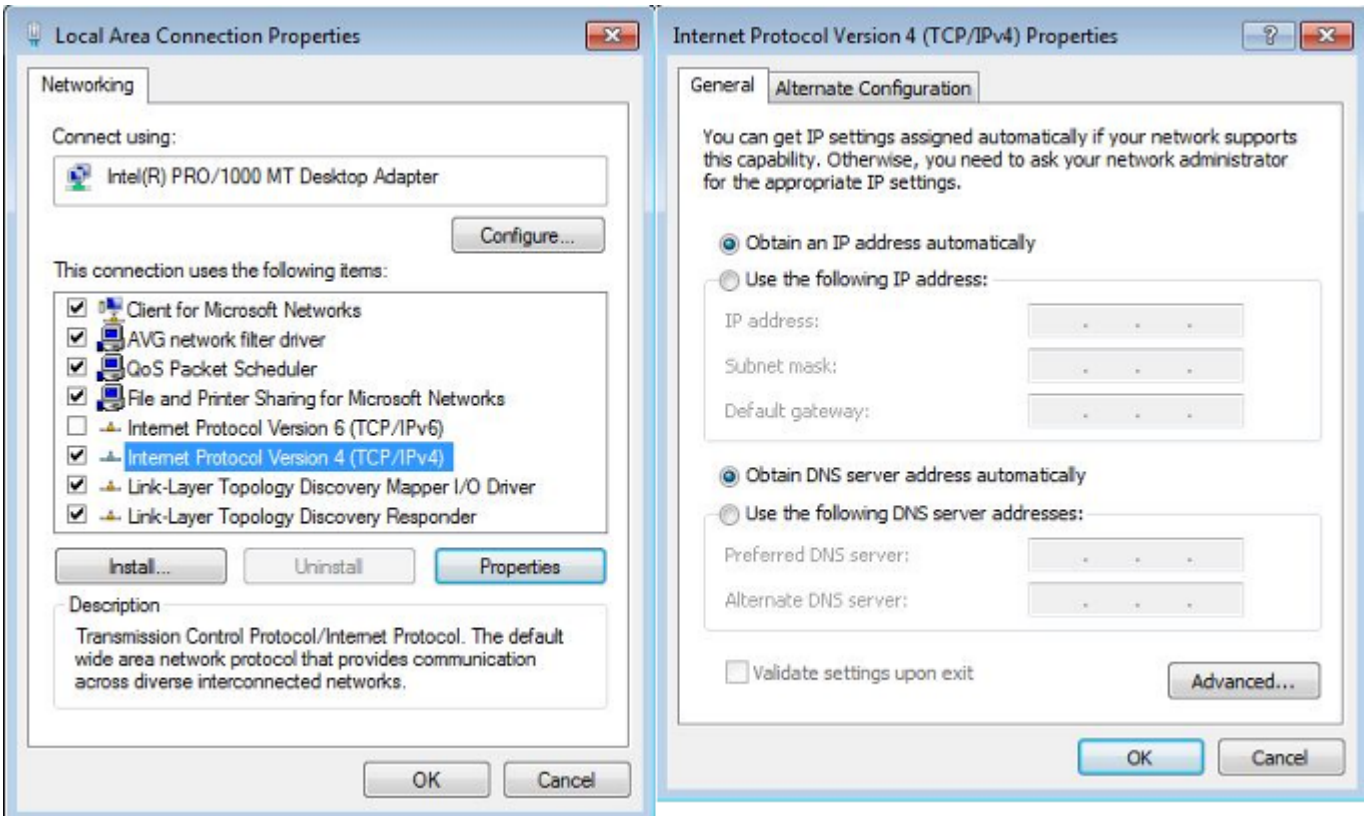
Ping statistics for 192.168.0.100:
    Packets: Sent = 25, Received = 0, Lost = 25 (100% loss),
Control-C
^C
C:\Documents and Settings\Administrator>ping 192.168.1.100 -t

Pinging 192.168.1.100 with 32 bytes of data:

Request timed out.
Reply from 192.168.1.100: bytes=32 time=7ms TTL=128
Reply from 192.168.1.100: bytes=32 time=1ms TTL=128
Reply from 192.168.1.100: bytes=32 time=2ms TTL=128
Reply from 192.168.1.100: bytes=32 time=1ms TTL=128
Reply from 192.168.1.100: bytes=32 time=2ms TTL=128
Reply from 192.168.1.100: bytes=32 time=2ms TTL=128
Reply from 192.168.1.100: bytes=32 time=1ms TTL=128
Reply from 192.168.1.100: bytes=32 time=1ms TTL=128
Reply from 192.168.1.100: bytes=32 time=1ms TTL=128
Reply from 192.168.1.100: bytes=32 time=1ms TTL=128

```

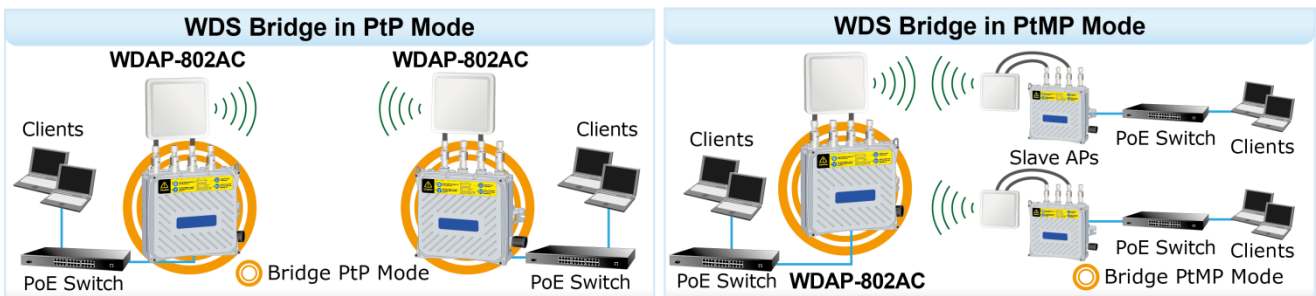
Step 8. Configure the TCP/IP settings of Site-2 to “Obtain an IP address automatically”.



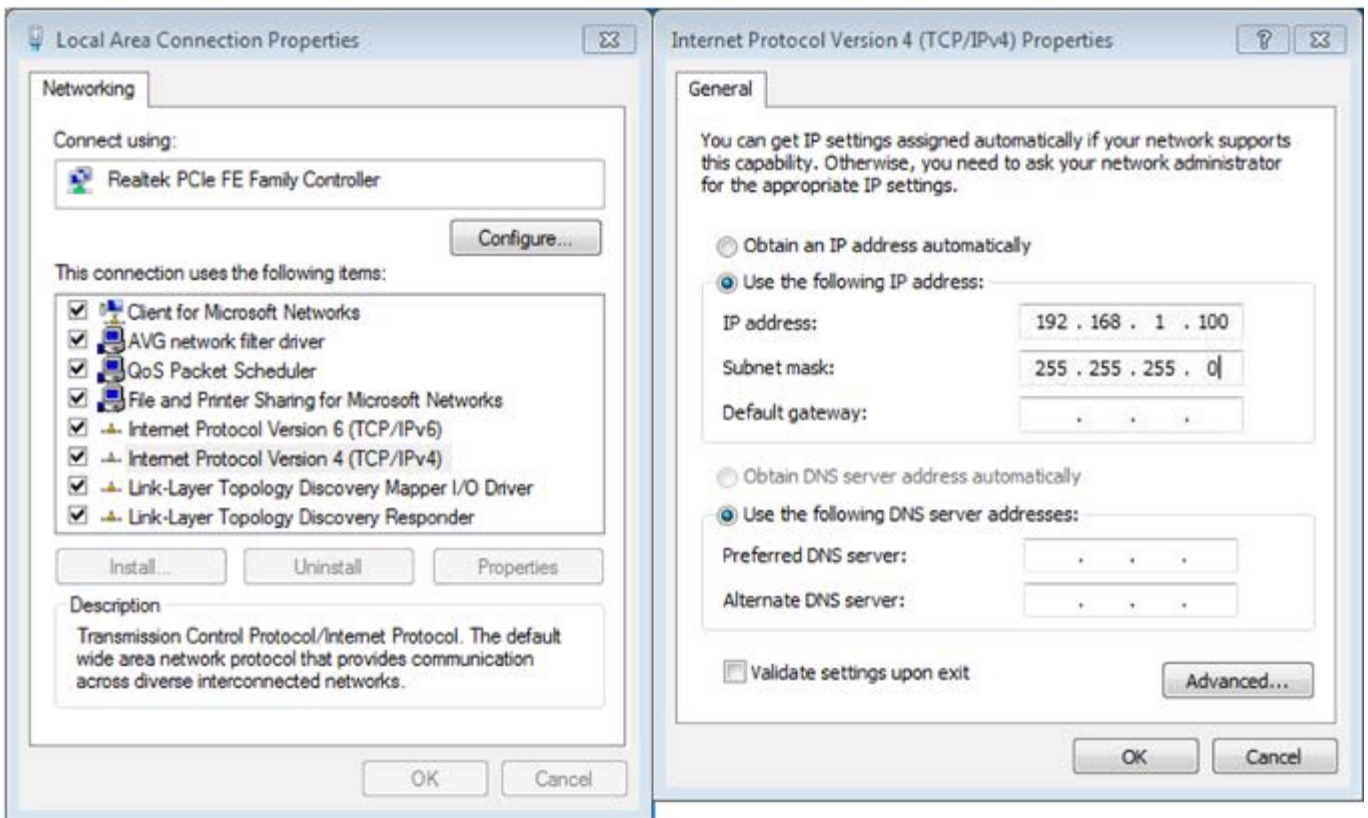
Step 9. Use command line tool to ping the DNS (e.g., Google) to ensure Site-2 can access internet through the wireless connection.

Q2: How to Set Up the WDS Connection

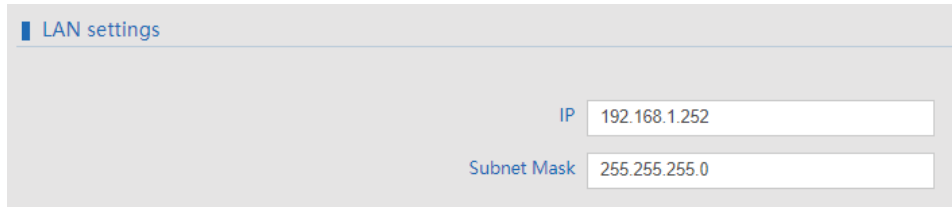
Topology:



Step 1. Use static IP in the PCs that are connected with WDAP-802AC-1 (Site-1) and WDAP-802AC -2 (Site-2). In this case, Site-1 is “192.168.1.100”, and Site-2 is “192.168.1.200”.



Step 2. In AP-2, change the default IP to the same IP range but different from AP-1. In this case, the IP is changed to **192.168.1.252**.

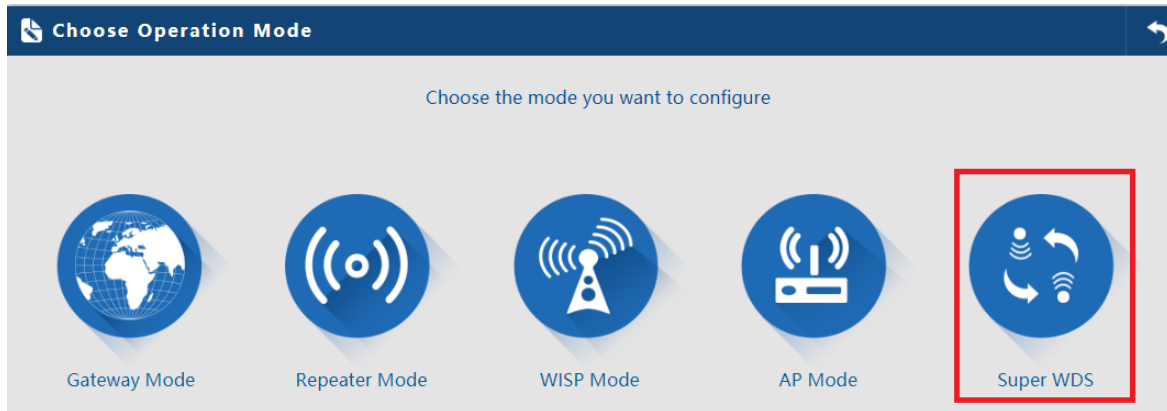


LAN settings

IP: 192.168.1.252

Subnet Mask: 255.255.255.0

Step 3. In both APs, go to **“Wizard”** to configure it in **Super WDS** Mode.

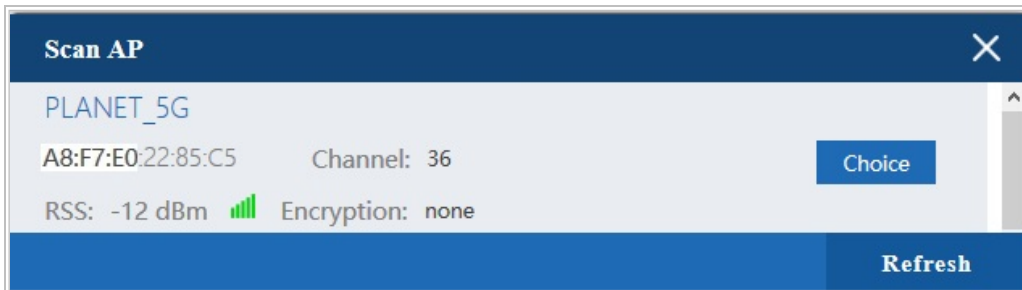


Choose Operation Mode

Choose the mode you want to configure

- Gateway Mode
- Repeater Mode
- WISP Mode
- AP Mode
- Super WDS** (highlighted with a red box)

Step 4. Go to **“Wireless”** and press **Scan AP** to search the other AP. You can also enter the MAC address and SSID if you know what they are.



Scan AP

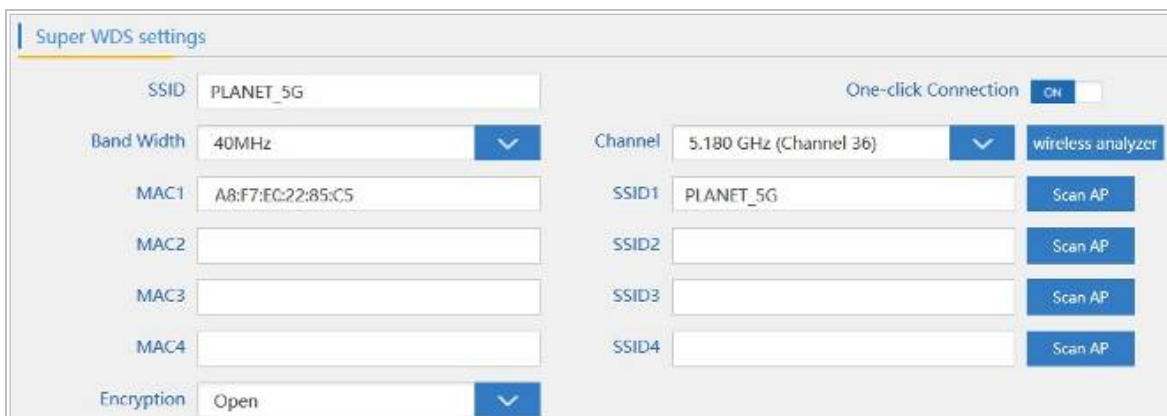
PLANET_5G

A8:F7:E0:22:85:C5 Channel: 36

RSS: -12 dBm Encryption: none

Choice

Refresh



Super WDS settings

SSID: PLANET_5G

Band Width: 40MHz

MAC1: A8:F7:E0:22:85:C5

MAC2:

MAC3:

MAC4:

Encryption: Open

One-click Connection: ON

Channel: 5.180 GHz (Channel 36)

SSID1: PLANET_5G

SSID2:

SSID3:

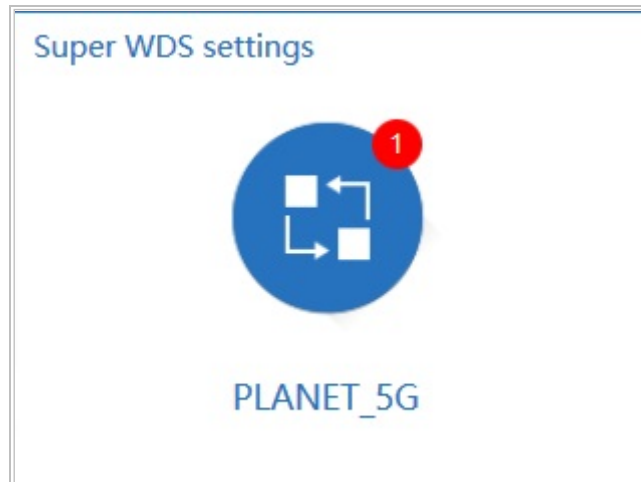
SSID4:

Scan AP buttons for each SSID

wireless analyzer

Step 5. Click “Apply” to finish the setting.

Step 6. Click “Return home” to check WDS status.



Step 10. Use command line tool to ping each other to ensure the link is successfully established.

From Site-1, ping 192.168.1.200, and in Site-2, ping 192.168.1.100.

```

C:\WINDOWS\system32\CMD.exe - ping 192.168.1.100 -t
Destination host unreachable.
Destination host unreachable.
Destination host unreachable.
Destination host unreachable.
Destination host unreachable.

Ping statistics for 192.168.0.100:
    Packets: Sent = 25, Received = 0, Lost = 25 (100% loss),
Control-C
^C
C:\Documents and Settings\Administrator>ping 192.168.1.100 -t

Pinging 192.168.1.100 with 32 bytes of data:

Request timed out.
Reply from 192.168.1.100: bytes=32 time=7ms TTL=128
Reply from 192.168.1.100: bytes=32 time=1ms TTL=128
Reply from 192.168.1.100: bytes=32 time=2ms TTL=128
Reply from 192.168.1.100: bytes=32 time=1ms TTL=128
Reply from 192.168.1.100: bytes=32 time=2ms TTL=128
Reply from 192.168.1.100: bytes=32 time=2ms TTL=128
Reply from 192.168.1.100: bytes=32 time=1ms TTL=128
Reply from 192.168.1.100: bytes=32 time=1ms TTL=128
Reply from 192.168.1.100: bytes=32 time=1ms TTL=128

```

The following hints should be noted:



- 1) The encryption method must be the same as that of both sites if configured.
- 2) Both sites should be Line-of-Sight.
- 3) For the short distance connection less than 1km, please reduce the "RF Output Power" of both sites.
- 4) For the long distance connection over 1km, please adjust the "Distance" to the actual distance or double the actual distance.

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.	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> 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.

	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 (Dynamic Domain Name System)** - The capability of assigning a fixed host and domain name to a dynamic Internet IP Address.
- **DHCP (Dynamic Host Configuration Protocol)** - A protocol that automatically configure the TCP/IP parameters for the all the PC(s) that are connected to a DHCP server.
- **DMZ (Demilitarized Zone)** - 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 (Domain Name System)** - 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 (Digital Subscriber Line)** - A technology that allows data to be sent or received over existing traditional phone lines.
- **ISP (Internet Service Provider)** - 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 (Network Address Translation)** - NAT technology translates IP addresses of a local area network to a different IP address for the Internet.
- **PPPoE (Point to Point Protocol over Ethernet)** - PPPoE is a protocol for connecting remote hosts to the Internet over an always-on connection by simulating a dial-up connection.
- **SSID - A Service Set Identification** 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 (Wired Equivalent Privacy)** - 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 (Wireless Local Area Network)** - 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 11ac Wireless AP is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.	Lietuviškai	Šiuo PLANET Technology Corporation ,, skelbia, kad 11ac Wireless AP tenkina visus svarbiausius 2014/53/EU direktyvos reikalavimus ir kitas svarbias nuostatas.
Česky	Společnost PLANET Technology Corporation , tímto prohlašuje, že tato 11ac Wireless AP splňuje základní požadavky a další příslušná ustanovení směrnice 2014/53/EU.	Magyar	A gyártó PLANET Technology Corporation , kijelenti, hogy ez a 11ac Wireless AP megfelel az 2014/53/EU irányelv alapkövetelményeinek és a kapcsolódó rendelkezéseknek.
Dansk	PLANET Technology Corporation , erklærer herved, at følgende udstyr 11ac Wireless AP overholder de væsentlige krav og øvrige relevante krav i direktiv 2014/53/EU	Malti	Hawnhekk, PLANET Technology Corporation , jiddikjara li dan 11ac Wireless AP jikkonforma mal-ħtiġijiet essenzjali u ma provvediment i oħrajn rilevanti li hemm fid-Dirrettiva 2014/53/EU
Deutsch	Hiermit erklärt PLANET Technology Corporation , dass sich dieses Gerät 11ac Wireless AP in Übereinstimmung mit den grundlegenden Anforderungen und den anderen relevanten Vorschriften der Richtlinie 2014/53/EU befindet". (BMW i)	Nederlands	Hierbij verklaart , PLANET Technology Corporation , dat 11ac Wireless AP in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 2014/53/EU
Eestikeeles	Käesolevaga kinnitab PLANET Technology Corporation , et see 11ac Wireless AP vastab Euroopa Nõukogu direktiivi 2014/53/EU põhinõuetele ja muudele olulistele tingimustele.	Polski	Niniejszym firma PLANET Technology Corporation , oświadcza, że 11ac Wireless AP spełnia wszystkie istotne wymogi i klauzule zawarte w dokumencie „Directive 2014/53/EU.
Ελληνικά	<i>ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ</i> , PLANET Technology Corporation , <i>ΔΗΛΩΝΕΙ ΟΤΙ ΑΥΤΟ 11ac Wireless AP ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 2014/53/EU</i>	Português	PLANET Technology Corporation , declara que este 11ac Wireless AP está conforme com os requisitos essenciais e outras disposições da Directiva 2014/53/EU.
Español	Por medio de la presente, PLANET Technology Corporation , declara que 11ac Wireless AP cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 2014/53/EU	Slovensky	Výrobca PLANET Technology Corporation , týmto deklaruje, že táto 11ac Wireless AP je v súlade so základnými požiadavkami a ďalšími relevantnými predpismi smernice 2014/53/EU.
Français	Par la présente, PLANET Technology Corporation , déclare que les appareils du 11ac Wireless AP sont conformes aux exigences essentielles et aux autres dispositions pertinentes de la directive 2014/53/EU	Slovensko	PLANET Technology Corporation , s tem potrjuje, da je ta 11ac Wireless AP skladen/a z osnovnimi zahtevami in ustreznimi določili Direktive 2014/53/EU
Italiano	Con la presente , PLANET Technology Corporation , dichiara che questo 11ac Wireless AP è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 2014/53/EU.	Suomi	PLANET Technology Corporation , vakuuttaa täten että 11ac Wireless AP tyyppinen laite on direktiivin 2014/53/EU oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
Latviski	Ar šo PLANET Technology Corporation , apliecinu, ka šī 11ac Wireless AP atbilst Direktīvas 2014/53/EU pamatprasībām un citiem atbilstošiem noteikumiem.	Svenska	Härmed intygar, PLANET Technology Corporation , att denna 11ac Wireless AP står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 2014/53/EU.