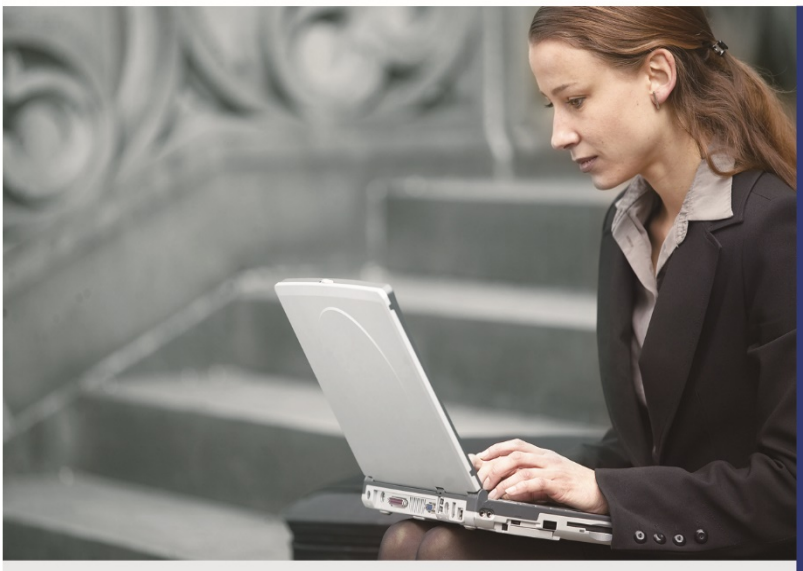
PLANET
Networking & Communication

User's Manual

1200Mbps 802.11ac Wave 2 Dual Band
Wireless Access Point w/802.3at PoE+

- WDAP-C7210E
- WDAP-W1200E
- WDAP-850AC



Copyright

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:

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

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.

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

Operations in the 5.15-5.25GHz band are restricted to indoor usage only.

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.

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

Model: WDAP-C7210E/WDAP-W1200E/WDAP-850AC

Rev: 3.0 (Nov., 2021)

Part No. EM-WDAP-C7210E_ WDAP-W1200E_WDAP-850AC _v1.1

CONTENTS

FIGURE

Chapter 1. Product Introduction

Package Contents

Thank you for choosing PLANET Wireless AP. Please verify the contents inside the package box.

1.1 Package Contents of WDAP-C7210E

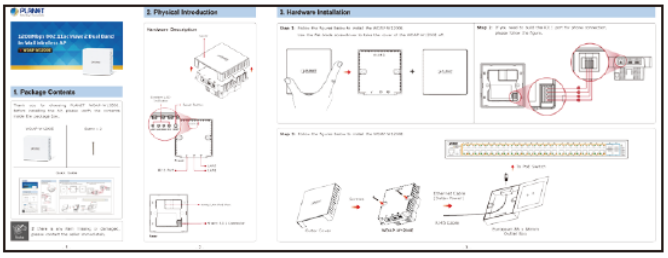
WDAP-C7210E x 1	Quick Guide x 1
	
Ethernet Cable x 1	Mounting Kit
	

Package Contents of WDAP-W1200E

WDAP-W1200E

Screw x 2

Quick Guide



Package Contents of WDAP-850AC

WDAP-850AC

Quick Guide

RJ45 Waterproof Kit x 1

L-type Bracket x 1

U-bolt Kit x 2

Screw Set x 1

Note

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

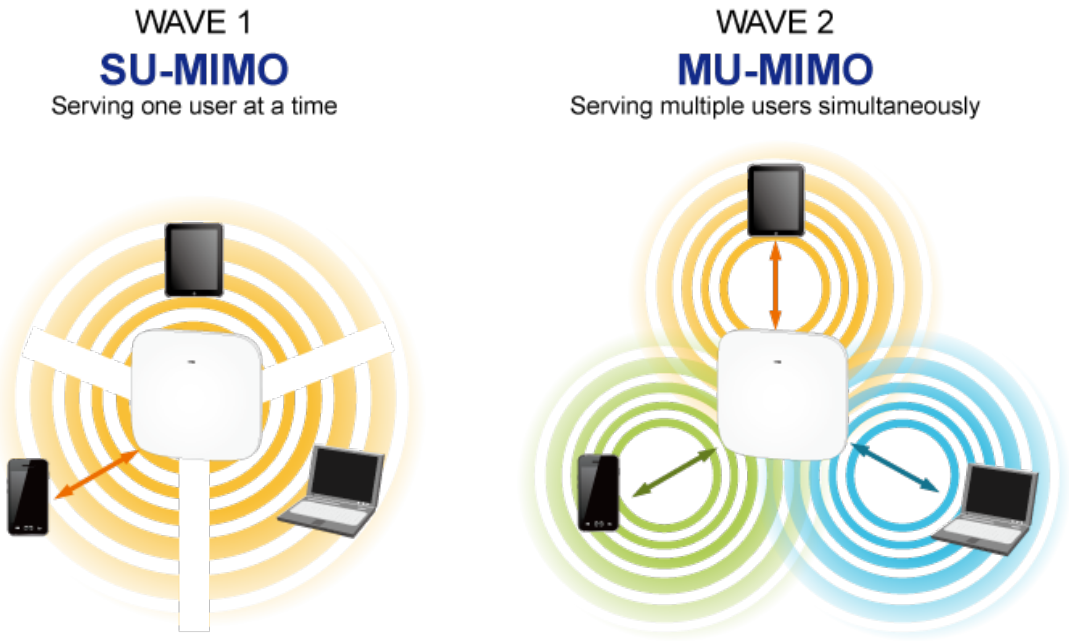
Product Description (please refer to PLANET website for WDAP-W1200E & WDAP-850AC information)

1.2 Ultra-high-speed, Wave 2 MU-MIMO Wireless LAN Solution

PLANET WDAP-C7210E 1200Mbps Wave 2 Dual Band 802.11ac Wireless AP supports central management through PLANET NMS controllers. With IEEE 802.11ac Wave 2 MU-MIMO 2T2R dual-band technology, the WDAP-C7210E provides a maximum wireless speed of 867Mbps at 5GHz and 300Mbps at 2.4GHz.

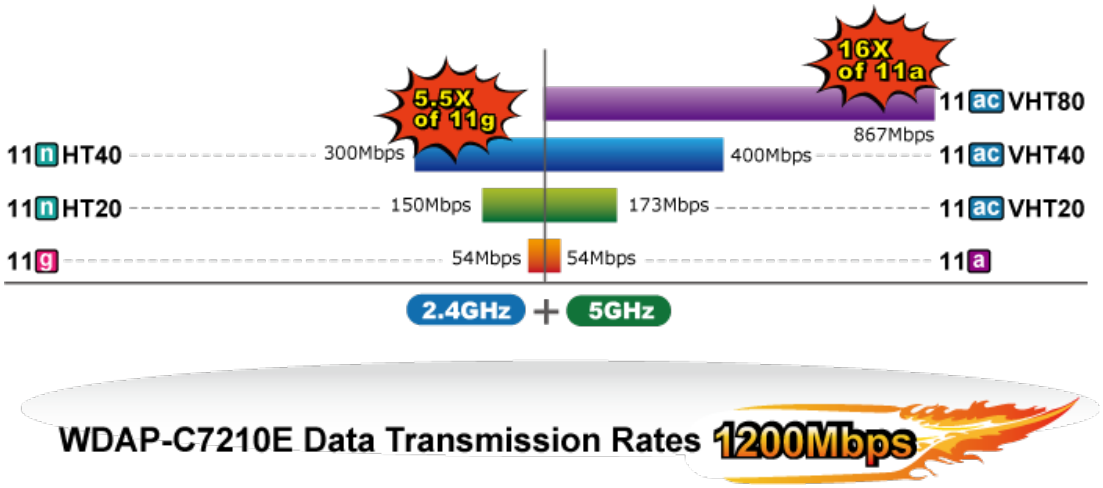
Benefits of MU-MIMO under 802.11ac Wave 2

With the MU-MIMO Wave 2 technology, the WDAP-C7210E, installed in public areas such as hotspots, airports and conferences, reduces the frustration that Wi-Fi users often experience in downloading web pages, e-mail file attachments and media contents. For cellular operators, the WDAP-C7210E provides a better Wi-Fi user experience, reducing the likelihood of users turning off Wi-Fi and putting more load on the cellular network. For enterprises, this technology also can solve Wi-Fi congestion issues in open work spaces and conference rooms.



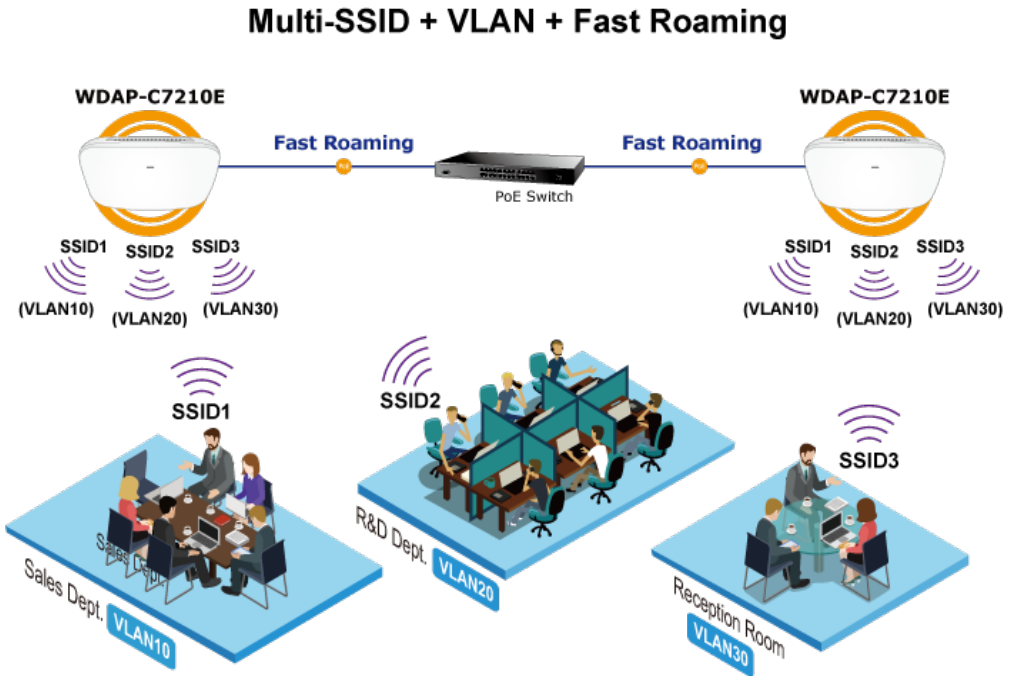
Powerful Dual-band WLAN Solution

PLANET WDAP-C7210E, adopting the IEEE 802.11ac Wave 2 standard, provides a high-speed transmission of power and data, meaning two remote nodes in the **5GHz** frequency band can be bridged. The **2.4GHz** wireless connection can also be used simultaneously. Furthermore, the WDAP-C7210E adopts the high-class Qualcomm Atheros SoC (System-on-a-Chip), which provides higher stability to meet the stringent requirements of the solution.



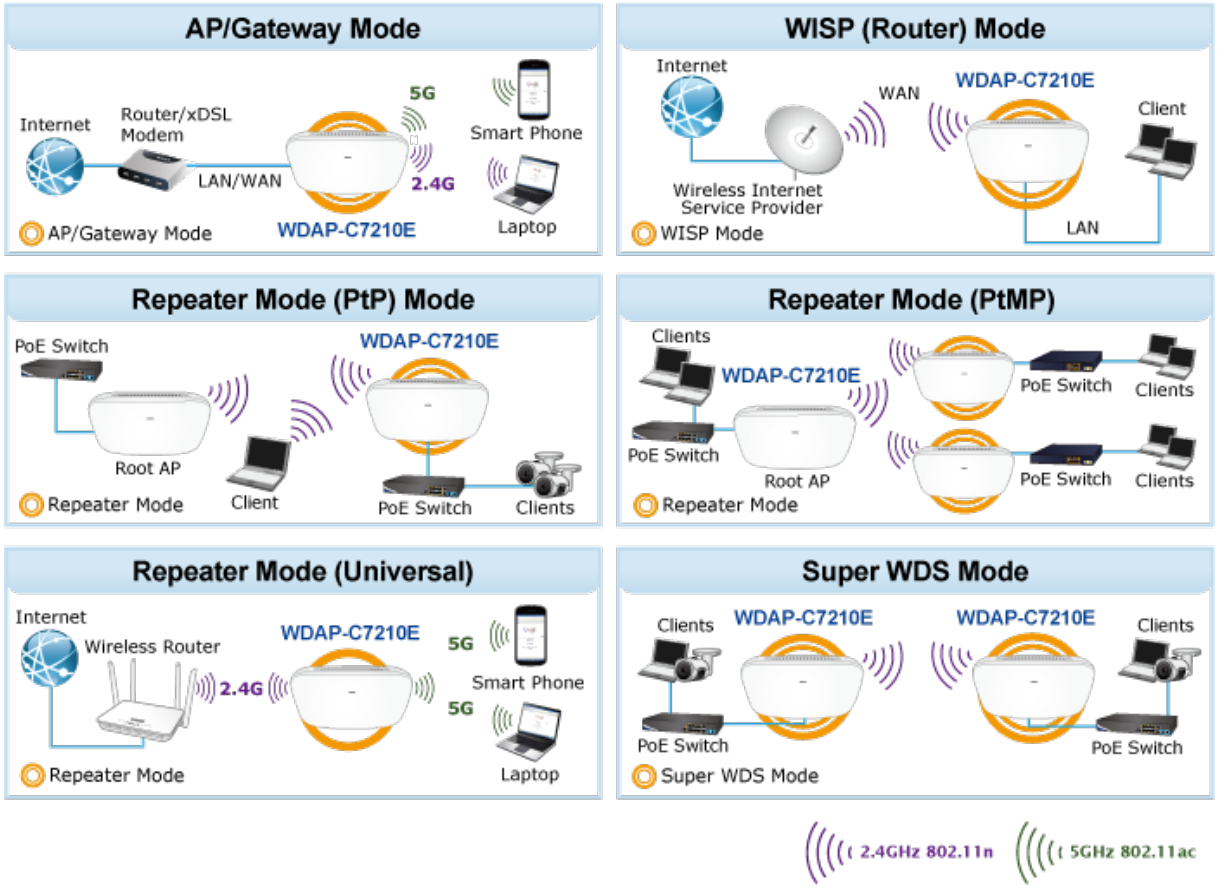
Advanced Security and Rigorous Authentication

The WDAP-C7210E supports 128-bit WEP, WPA / WPA2, WPA-PSK and WPA2-PSK wireless encryptions, the advanced WPA2-AES mechanism and 802.1X RADIUS authentication, which can effectively prevent eavesdropping by unauthorized users or bandwidth occupied by unauthenticated wireless access. Furthermore, any users are granted or denied access to the wireless LAN network based on the ACL (Access Control List) that the administrator pre-established. For management purposes, the IEEE 802.1Q VLAN supported allows multiple VLAN tags to be mapped to multiple SSIDs to distinguish the wireless access.



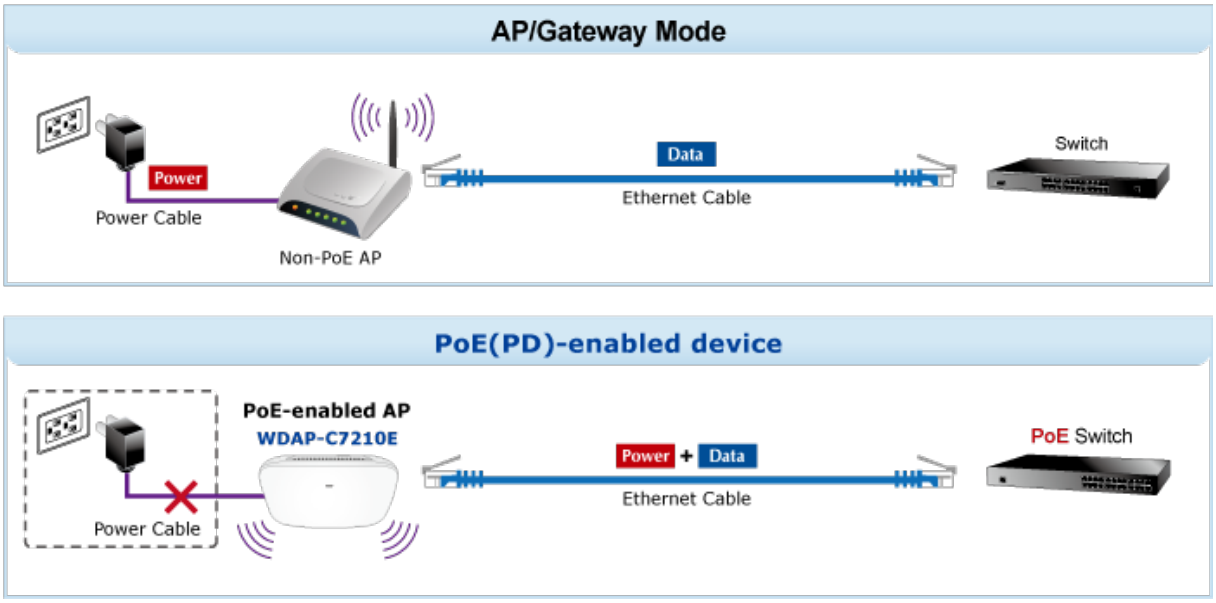
Multiple Operation Modes for Various Applications

The WDAP-C7210E supports AP, Gateway, WISP, Repeater and Super WDS modes, through which it provides more flexibility for users when wireless network is established. Compared with general wireless access points, the WDAP-C7210E offers more powerful and flexible capability for wireless clients.



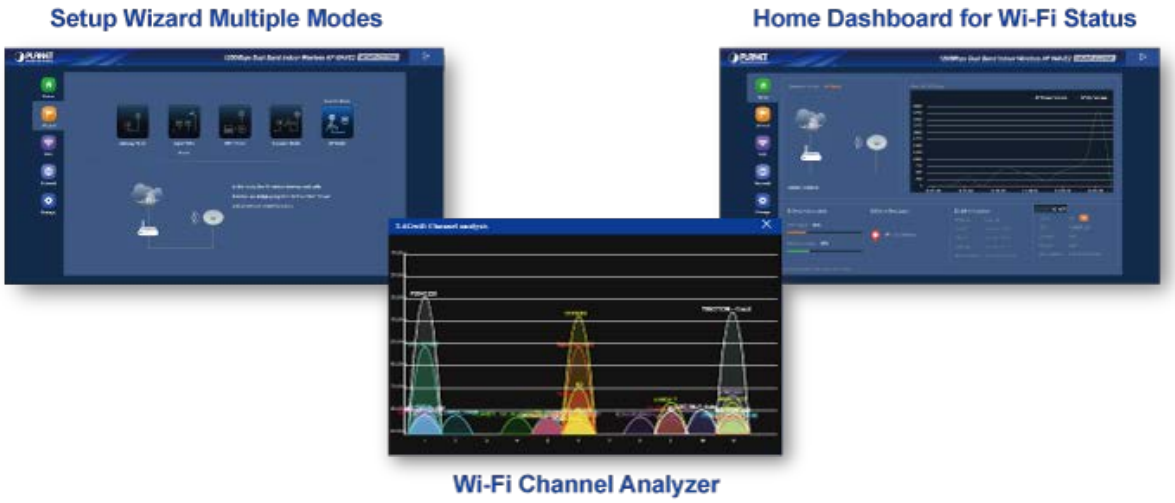
Ceiling-mount Design for Your Environment

With the standard IEEE802.3at Power over Ethernet (PoE) design, the WDAP-C7210E can be easily installed in the areas where power outlets are not available. By supporting the standard IEEE 802.3at PoE PD power scheme, the WDAP-C7210E can be powered and networked by a single UTP cable, effectively eliminating the needs of dedicated electrical outlets on the ceiling and reducing the cabling cost. Furthermore, the system administrator is able to arrange the PoE schedule of the WDAP-C7210E by working with the managed PoE switch.



Optimized Efficiency in AP Management

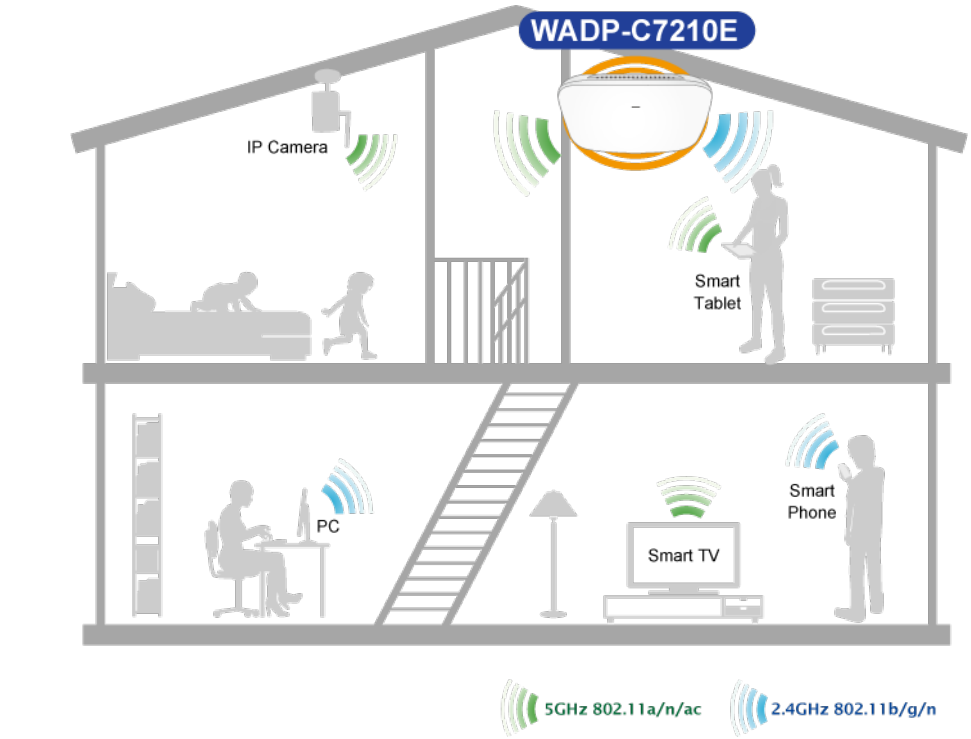
The brand-new GUI configuration wizard helps the system administrator easily set up the WDAP-C7210E step by step. Besides, the built-in Wi-Fi analyzer provides real-time channel utilization to prevent channel overlapping to assure greater performance. With the automatic transmission power mechanism, distance control and scheduled reboot setting, the WDAP-C7210E is easy for the administrator to deploy and manage without on-site maintenance. Moreover, you can use PLANET NMS-500 or NMS-1000V AP control function to deliver wireless profiles to multiple APs simultaneously, thus making the central management simple.

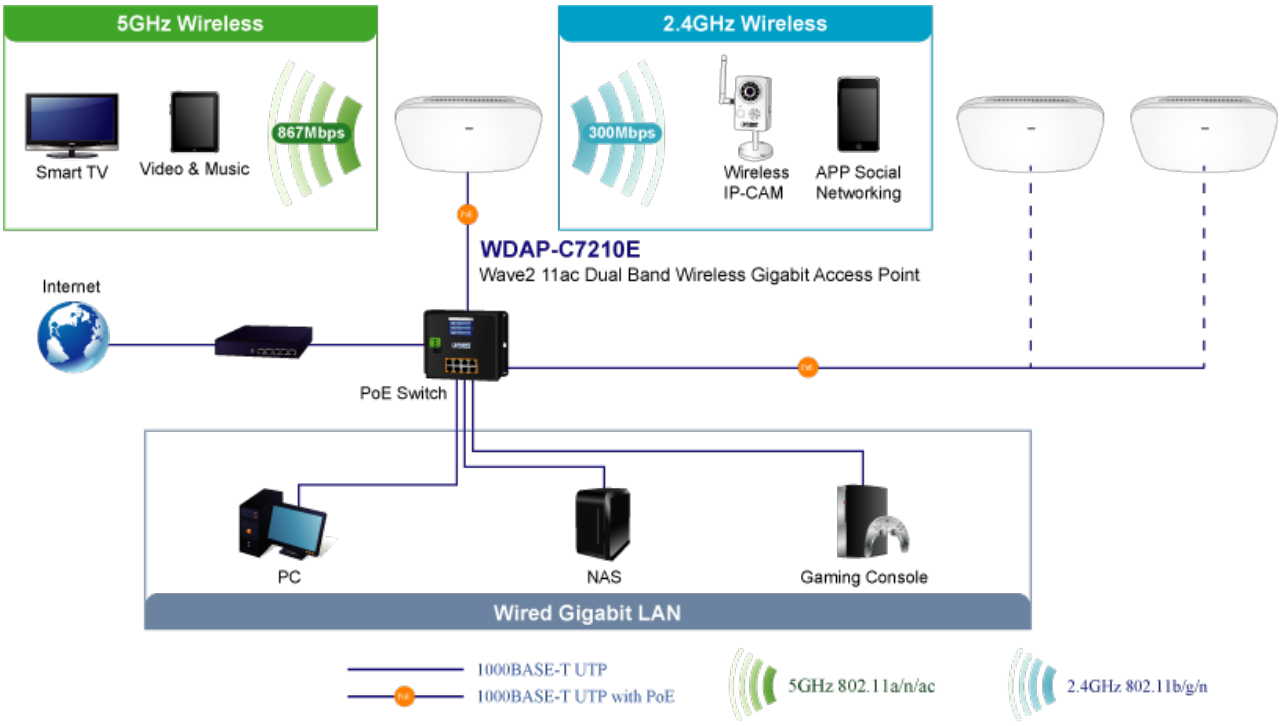


Applications

Extremely High-speed and Dual Band Make Wi-Fi Transmission More Powerful

The WDAP-C7210E delivers the dual band technology to avoid signal interference and ensure the best Wi-Fi performance. It allows you to check e-mails and surf the Internet via the 2.4GHz band and simultaneously watch high-definition (HD) video and any other multimedia application via 5GHz band. Moreover, the Gigabit Ethernet port of the WDAP-C7210E offers ultra-fast wired connections that utilize the maximum wireless bandwidth; therefore, users will have real wireless speed over 100Mbps. With outstanding stability of high-speed wireless transmission, the WDAP-C7210E can provide users with excellent experience in multimedia streaming with your mobile devices anywhere, anytime.




5GHz Wireless
Smart TV
Video & Music
867Mbps
2.4GHz Wireless
300Mbps
Wireless IP-CAM
APP Social Networking
WDAP-C7210E
Wave2 11ac Dual Band Wireless Gigabit Access Point
Internet
PoE Switch
PC
NAS
Gaming Console
Wired Gigabit LAN
1000BASE-T UTP
1000BASE-T UTP with PoE
5GHz 802.11a/n/ac
2.4GHz 802.11b/g/n

Product Features (please refer to PLANET website for WDAP-W1200E & WDAP-850AC information)

1.2 Industrial Compliant Wireless LAN and LAN

- Compliant with the IEEE 802.11a/b/g/n/ac wireless technology
- Equipped with 10/100/1000Mbps RJ45 ports, auto MDI/MDI-X supported

RF Interface Characteristics

- 802.11ac Wave 2 2T2R MIMO architecture with data rate of up to 1200Mbps (300Mbps at 2.4GHz and 867Mbps at 5GHz)
- High output power with multiply-adjustable transmit power control

Multiple Operation Modes and Wireless Features

- Multiple operation modes: AP, Gateway, WISP, Repeater, Super WDS
- 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
- Support Terminal Fast Roaming with 802.11k, 802.11v, and 802.11r

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

Product Specifications

Product	**WDAP-C7210E** 1200Mbps 802.11ac Wave 2 Dual Band Ceiling-mount Wireless Access Point	
Hardware Specifications		
Interfaces	LAN	2 x 10/100/1000BASE-T RJ45 port Auto-negotiation and auto MDI/MDI-X
Antennas	Gain:	4 x Internal 5dBi antenna (2.4G x2, 5G x2)
Reset Button	Reset button on the rear side (Press over 15 seconds to reset the device to factory default)	
LED Indicators	SYS, 2.4G, 5G	
Dimensions (W x D x H)	186 x 186 x 35.8mm	
Weight	380 ±5g	
Power Requirements	48V DC IN, 0.5A, IEEE 802.3at PoE+ or 12V DC IN, 1.5A from DC Jack (5.5 x 2.1mm)	
Power Consumption	< 12W	
Mounting	Ceiling Mount	
Wireless Interface Specifications		
Standard	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 IEEE 802.11k, 802.11v, and 802.11r	
Media Access Control	CSMA/CA	
Data Modulation	802.11ac: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM) 802.11a/g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11b: DSSS (DBPSK / DQPSK / CCK)	
Band Mode	2.4G / 5G concurrent mode	
Frequency Range	**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	
Operating Channels	FCC: 36, 40, 44, 48, 149, 153, 157, 161, 165 (9 Channels) ETSI: 36, 40, 44, 48, 100, 104, 108, 112, 116, 132, 136, 140 (12 Channels) **5GHz channel list may vary in different countries according to their regulations.**	
Max. Transmit Power	FCC: up to 22 ± 1dBm	

(dBm)	ETSI: < 20dBm (EIRP)		
Receive Sensitivity	**Network Mode**	**Data Rate**	**Receive Sensitivity (dBm)**
	2.4GHz		
	802.11b	1Mbps	-99
		11Mbps	-92
	802.11g	6Mbps	-95
		54Mbps	-82
	802.11n HT20	MCS0/MCS8	-95
		MCS7/MCS15	-77
	802.11n HT40	MCS0/MCS8	-93
		MCS7/MCS15	-75
	5GHz		
	802.11a	6Mbps	-92
		54Mbps	-75
	802.11n HT20	MCS0/MCS8	-91
		MCS7/MCS15	-72
	802.11n HT40	MCS0/MCS8	-88
		MCS7/MCS15	-70
	802.11ac VHT20	MCS0	-92
		MCS8	-70
	802.11ac VHT40	MCS0	-89
		MCS9	-65
	802.11ac VHT80	MCS0	-87
		MCS9	-61
Software Features			
LAN	Static IP / Dynamic IP		
	Supports IP-MAC binding		
WAN	■ Static IP ■ Dynamic IP ■ PPPoE		
Wireless Mode	■ Access Point ■ Gateway ■ WISP ■ Repeater ■ Super WDS		
Channel Width	20MHz, 40MHz, 80MHz		
Encryption Security	64-/128-bit WEP, WPA, WPA-PSK, WPA2, WPA2-PSK, 802.1X		
Wireless Security	Enable/Disable SSID Broadcast		

	Wireless max. 32 MAC addresses filtering
	User Isolation
Max. SSIDs	4
Max. 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 (Max.100%, Efficient 75%, Enhanced 50%, Standard 25% or Min. 12.5%)
	Client Limit Control, Coverage Threshold
	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/hour
Management	Remote management through PLANET DDNS/ Easy DDNS
	Configuration backup and restore
	Supports UPnP
	Supports IGMP Proxy
	Supports PPTP/L2TP/IPSec VPN Pass-through
	SNMP v1/v2c/v3 support, MIB I/II, Private MIB
Central Management[1]	Applicable controllers: NMS-500, NMS-1000V
Remarks [1]: The feature will be supported through firmware/system upgrade.	
Environment & Certification	
Temperature	Operating: 0 ~ 40 degrees C Storage: -40 ~ 70 degrees C
Humidity	Operating: 10 ~ 90% (non-condensing) Storage: 5 ~ 90% (non-condensing)
Regulatory	CE, RoHS

Product	**WDAP-W1200E** **Dual Band 802.11ac 1200Mbps Wave 2 In-wall Wireless Access Point (EU Type, 802.3af/at)**	
Hardware Specifications		
Interfaces	LAN	2 x 10/100/1000BASE-T RJ45 port Auto-negotiation and auto MDI/MDI-X
	PoE Port	1 x 10/100/1000Mbps auto MDI/MDI-X RJ45 port (rear panel) ※ IEEE 802.3af/at PD port
	RJ11 Port	Six-position four-conductor (6P4C) modular jack
Antennas	Gain	4 x 2dBi antenna
Button	Reset button (Press over 10 seconds to reset the device to the factory default)	
LED Indicators	LAN1/LAN2/WAN/SYS	
Dimensions (W x D x H)	86 x 45 x 86 mm	
Weight	168 ± 5g	
Power Requirements	48V DC IN, 0.5A, IEEE 802.3af/at PoE+	
Power Consumption	< 8W	
Mounting	In-wall mount	
Wireless Interface Specifications		
Standard	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 802.3x flow control	
Media Access Control	CSMA/CA	
Data Modulation	802.11ac: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM) 802.11a/g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11b: DSSS (DBPSK / DQPSK / CCK)	
Band Mode	2.4GHz / 5GHz concurrent mode	
Frequency Range	**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	
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RF Power	<20dBm (EIRP)	
Receive Sensitivity	**Network Mode**	**Data Rate** / **Receive Sensitivity (dBm)**
	2.4GHz	

	802.11b	1Mbps	-88
		11Mbps	-85
	802.11g	6Mbps	-88
		54Mbps	-68
	802.11n	MCS0/MCS8	-68
		MCS7/MCS15	-68
	802.11n HT40	MCS0/MCS8	-93
		MCS7/MCS15	-75
	5GHz		
	802.11a	6Mbps	-92
		54Mbps	-75
	802.11n HT20	MCS0/MCS8	-91
		MCS7/MCS15	-72
	802.11n HT40	MCS0/MCS8	-88
		MCS7/MCS15	-70
	802.11ac VHT20	MCS0	-92
		MCS8	-70
	802.11ac VHT40	MCS0	-89
		MCS9	-65
	802.11ac VHT80	MCS0	-87
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Software Features	
LAN	Static IP/DHCP Client
	Supports IP-MAC binding
WAN	■ Static IP ■ Dynamic IP ■ PPPoE
Wireless Mode	■ Access Point ■ Gateway ■ WISP ■ Repeater ■ Super WDS
Channel Width	20MHz, 40MHz, 80MHz
Encryption Security	64-/128-bit WEP, WPA, WPA-PSK, WPA2, WPA2-PSK, 802.1X
Wireless Security	Enable/Disable SSID Broadcast
	Wireless – filtering of max. 32 MAC addresses
	User Isolation
Max. SSIDs	8 (4 per radio)
Max. Clients	128 (100 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
	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 to up to 4 SSIDs
Self-healing	Supports auto reboot settings per day/hour
Management	Remote management through PLANET DDNS/Easy DDNS
	Configuration backup and restoration
	Supports UPnP
	Supports IGMP Proxy
	Supports PPTP/L2TP/IPSec VPN Pass-through
	SNMP v1/v2c/v3 support, MIB I/II, Private MIB
Central Management*	**Applicable controllers: NMS-500/NMS-1000V, WS-1232P, WS-2864PVR**
***Remarks**: The feature will be supported through firmware/system upgrade.	
Environment & Certification	
Temperature	Operating: -20 ~ 55 degrees C Storage: -40 ~ 70 degrees C
Humidity	Operating: 10 ~ 90% (non-condensing) Storage: 5 ~ 95% (non-condensing)
Regulatory	CE, RoHS

Product	**WDAP-850AC** **1200Mbps Dual Band 802.11ac Wave 2 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)	231 x 80 x 295 mm
Weight	2.3kg
Power Requirement	48V 0.5A, IEEE 802.3at PoE+
Power Consumption (max.)	< 30W
Mounting Type	Mast mounting
Interface	Wireless IEEE802.11a/b/g/n/ac, 2T2R PoE WAN: 1 x 10/100/1000BASE-T, auto-MDI/MDIX, 802.3at PoE In
Button	Reset button
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

<table>
<tr><td>Operating Channels</td><td colspan="3">2.4GHz:
FCC: 1~11 Channels
ETSI: 1~13 Channels

5GHz:
FCC: 36, 40, 44, 48, 149, 153, 157, 161, 165 (9 Channels)
ETSI: 36, 40, 44, 48, 100, 104, 108, 112, 116, 132, 136, 140 (12 Channels)

5GHz channel list may vary in different countries depending on their regulations.</td></tr>
<tr><td>Max. Transmit Power (dBm)</td><td colspan="3">FCC: up to 29 ± 1dBm
ETSI: < 20dBm (EIRP)</td></tr>
<tr><td rowspan="20">Receiver Sensitivity

(dBm)</td><td>Network Mode</td><td>Data Rate</td><td>Receive Sensitivity (dBm)</td></tr>
<tr><td colspan="3">2.4GHz</td></tr>
<tr><td rowspan="2">802.11b</td><td>1Mbps</td><td>-99</td></tr>
<tr><td>11Mbps</td><td>-92</td></tr>
<tr><td rowspan="2">802.11g</td><td>6Mbps</td><td>-95</td></tr>
<tr><td>54Mbps</td><td>-82</td></tr>
<tr><td rowspan="2">802.11n HT20</td><td>MCS0/MCS8</td><td>-95</td></tr>
<tr><td>MCS7/MCS15</td><td>-77</td></tr>
<tr><td rowspan="2">802.11n HT40</td><td>MCS0/MCS8</td><td>-93</td></tr>
<tr><td>MCS7/MCS15</td><td>-75</td></tr>
<tr><td colspan="3">5GHz</td></tr>
<tr><td rowspan="2">802.11a</td><td>6Mbps</td><td>-92</td></tr>
<tr><td>54Mbps</td><td>-75</td></tr>
<tr><td rowspan="2">802.11n HT20</td><td>MCS0/MCS8</td><td>-91</td></tr>
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<tr><td rowspan="2">802.11ac VHT20</td><td>MCS0</td><td>-92</td></tr>
<tr><td>MCS8</td><td>-70</td></tr>
<tr><td rowspan="2">802.11ac VHT40</td><td>MCS0</td><td>-89</td></tr>
<tr><td>MCS9</td><td>-65</td></tr>
<tr><td rowspan="2">802.11ac VHT80</td><td>MCS0</td><td>-87</td></tr>
<tr><td>MCS9</td><td>-61</td></tr>
<tr><td colspan="4">Environment & Certification</td></tr>
<tr><td>Operating Temperature</td><td colspan="3">-40~70 degrees C</td></tr>
<tr><td>Operating Humidity</td><td colspan="3">10~90% (non-condensing)</td></tr>
<tr><td>IP Level</td><td colspan="3">IP67</td></tr>
<tr><td>ESD Protection</td><td colspan="3">±8kV air gap discharge
±4kV contact discharge</td></tr>
<tr><td>Surge Protection</td><td colspan="3">±20kV</td></tr>
<tr><td>Regulatory</td><td colspan="3">CE, RoHS</td></tr>
<tr><td colspan="4">Software</td></tr>
</table>

LAN	Static IP / DHCP Client
	Supports IP-MAC binding
WAN Type (GW/WISP mode)	■ Static IP ■ Dynamic IP ■ PPPoE
Wireless Modes	■ Access Point ■ Gateway ■ Repeater ■ Super 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	8 (4 per radio)
Max. Wireless Clients	128 (64 per radio)
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% and 12.5%)
	Client limit control, coverage threshold
	Distance control (Auto Ack Timeout)
	Wi-Fi channel analysis chart
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/hour
Management	Supports PLANET Hardware AP Controller Applicable controllers[1]:WS-1232P/WS-2864PVR/NMS-500/NMS-1000V
	Remote management through PLANET DDNS/ Easy DDNS
	Configuration backup and restoration
	Supports UPnP
	Supports IGMP Proxy
	Supports PPTP/L2TP/IPSec VPN pass-through
	SNMP v1/v2c/v3 support, MIB I/II, Private MIB
Remarks	1. ^ the feature will be supported through firmware/system upgrade

Chapter 2. Hardware Installation

Product Outlook

WDAP-C7210E

Dimensions: 186 x 186 x 35.8mm

2.1 **Weight:** 380 ±5g

- **Triple Viewing**

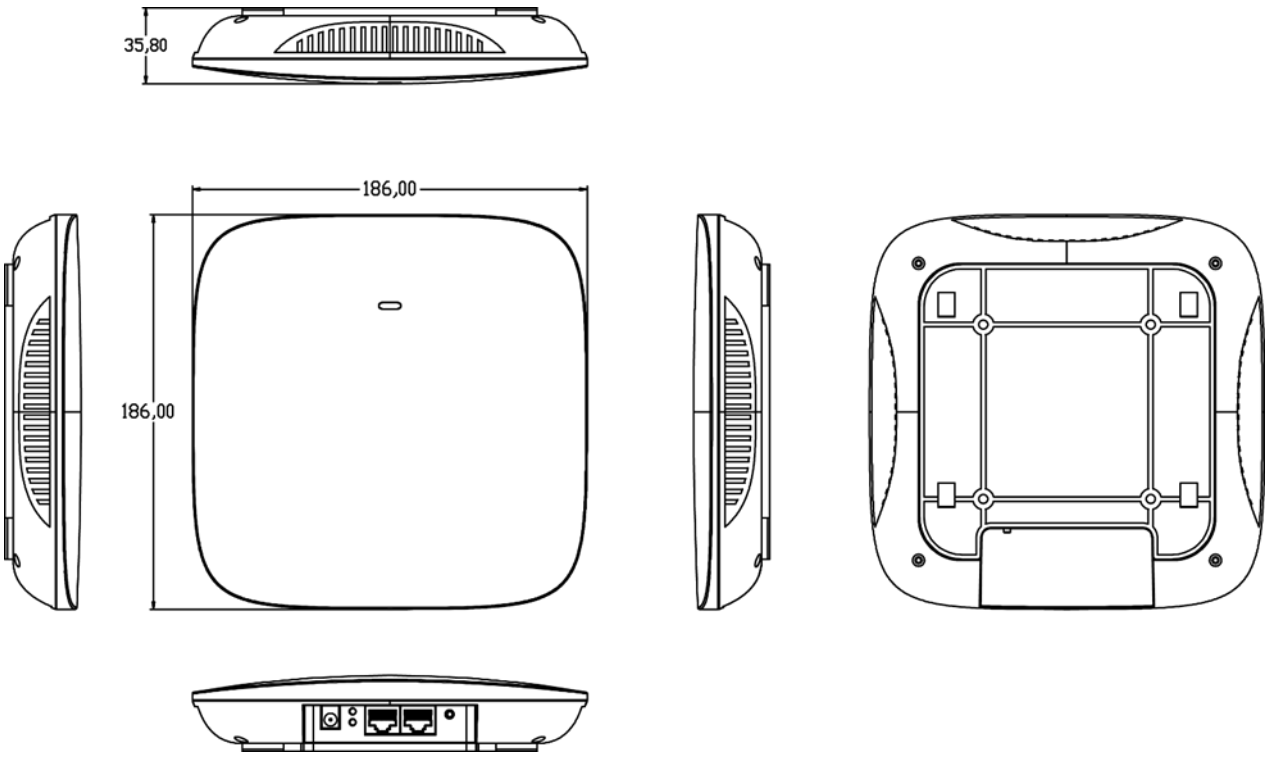


Figure 2-1 WDAP-C7210E Triple Viewing

Front Panel

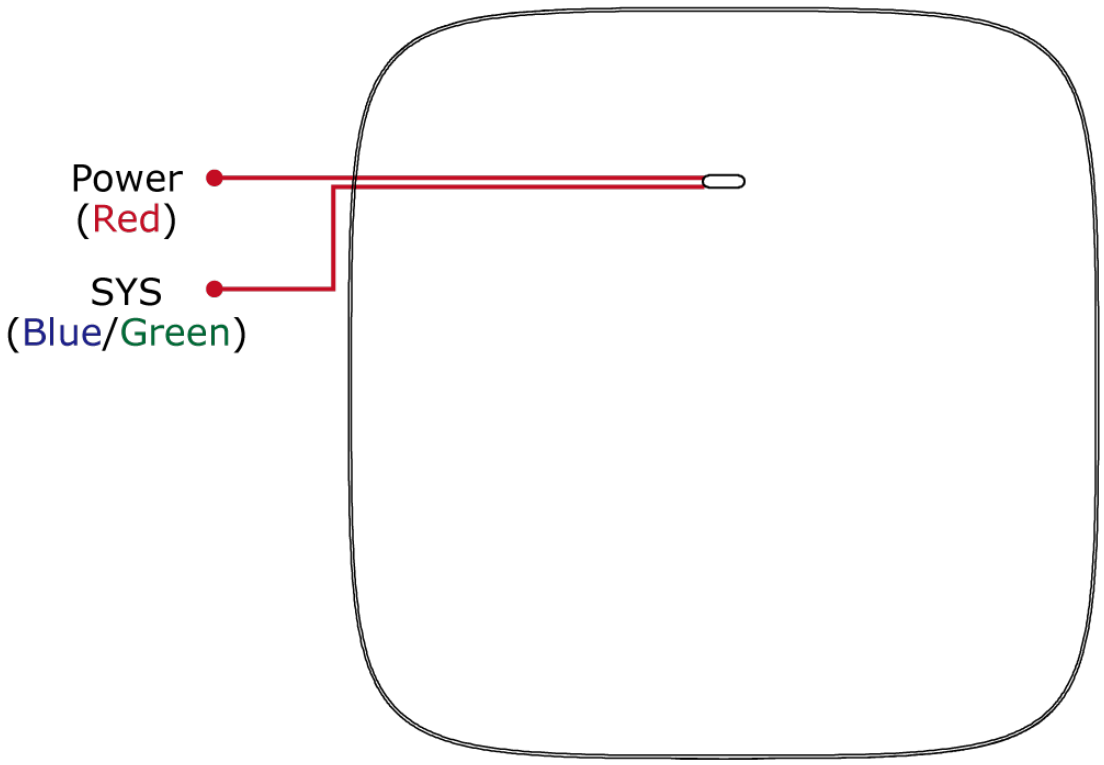


Figure 2-2 WDAP-C7210E Front Panel

LED Definition

LED	STATUS	FUNCTION
PWR	On (Red)	The access point is on.
	Off	System is operating.
SYS	On	Wireless LAN is initializing.
	Blinking (Blue/Green)	2.4GHz/5GHz wireless LAN is working.

- **Rear Panel**

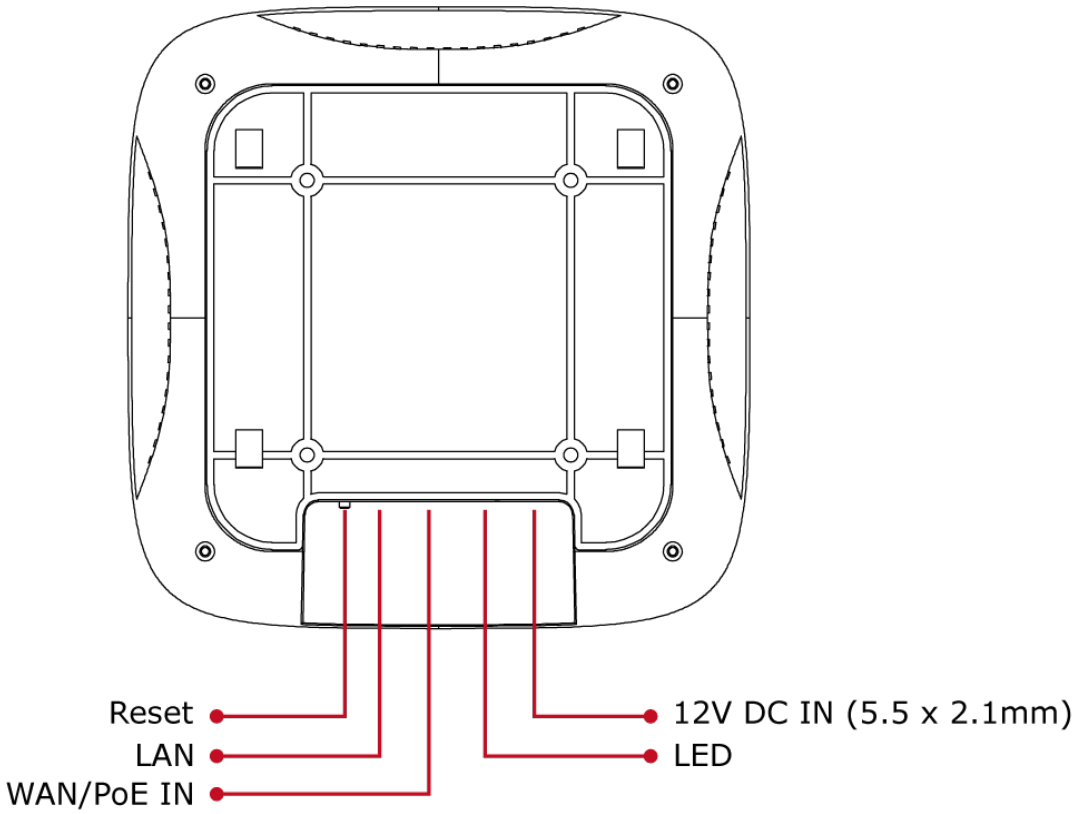


Figure 2-3 WDAP-C7210E Rear Panel

- **Bottom Panel**

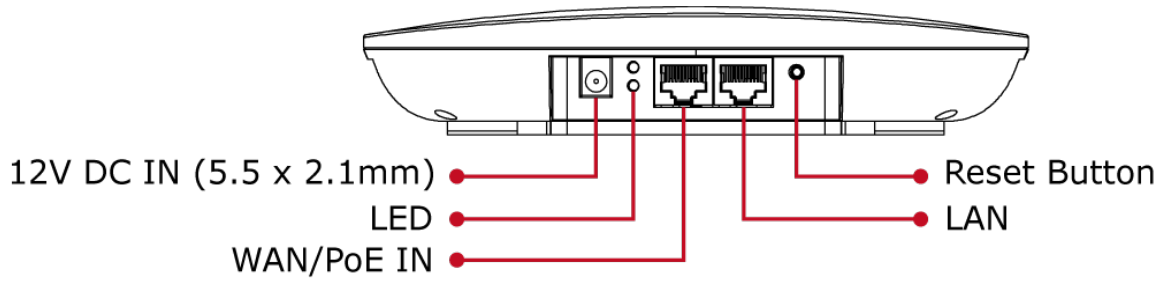


Figure 2-4 WDAP-C7210E Bottom Panel

Port definition

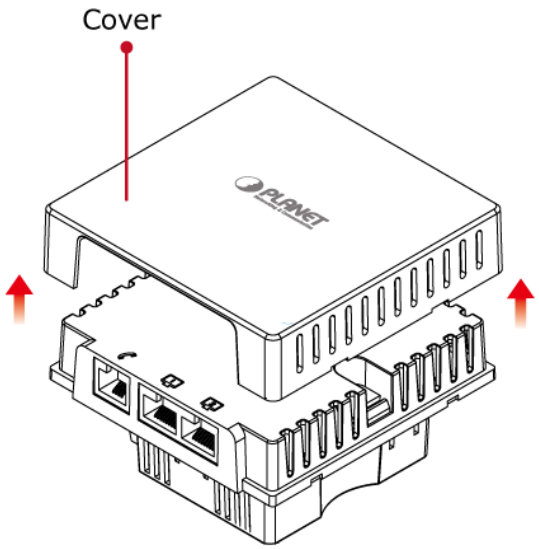
Object	Description
12V DC	12V DC port for the power adapter(DC-Jack 5.5 x 2.1mm)
LED	The access point is on.
PoE	LAN port with Power over Ethernet (PoE) IN
LAN	LAN port connecting to the network equipment.
Reset	To restore to the factory default setting, press and hold the Reset Button for about 15 seconds, and then release it.

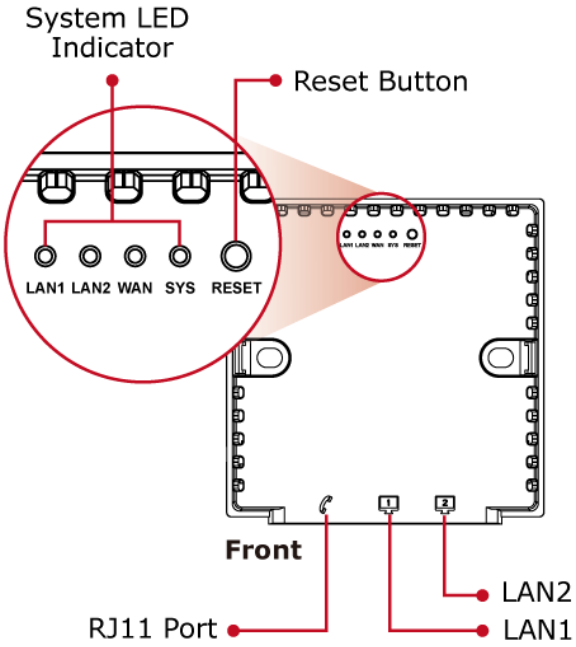
WDAP-W1200E

Dimensions(W x D x H): 86 x 45 x 86 mm

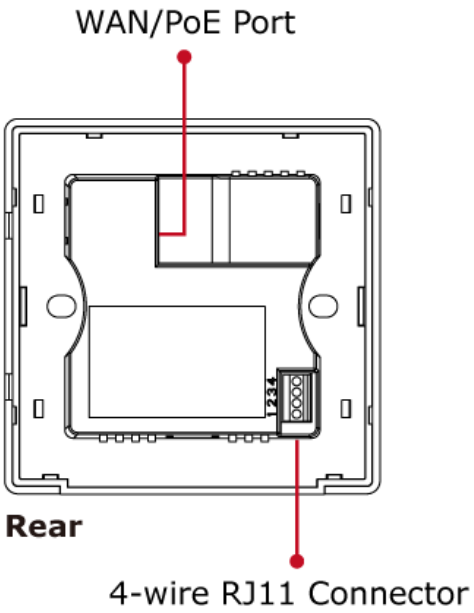
Weight: 168 ±5g

Front Panel

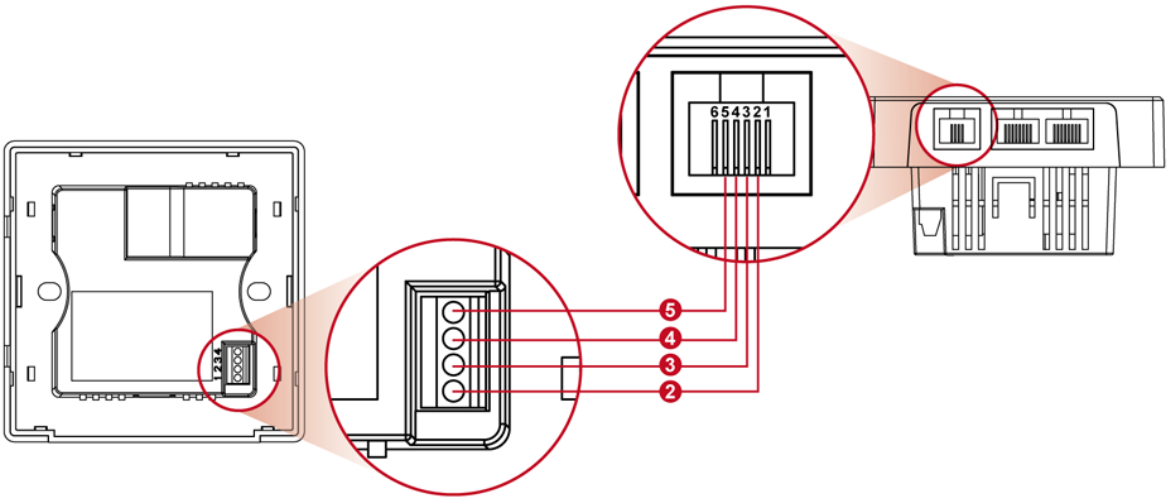




Rear Panel



4-wire RJ11 Connection diagram



LED definition

LED	STATE	FUNCTION
SYS	On	Power On
	Off	Power Off
WAN	On/Flash	WAN connected / data transmitting
	Off	WAN disconnected
LAN 1	On/Flash	LAN 1 connected / data transmitting
	Off	LAN 1 port disconnected
LAN 2	On/Flash	LAN 2 connected / data transmitting
	Off	LAN 2 port disconnected

Button definition

Object	Description
Reset	Press the Reset button for over 10 seconds and then release it to restore system to the factory default settings.

H/W Interface definition

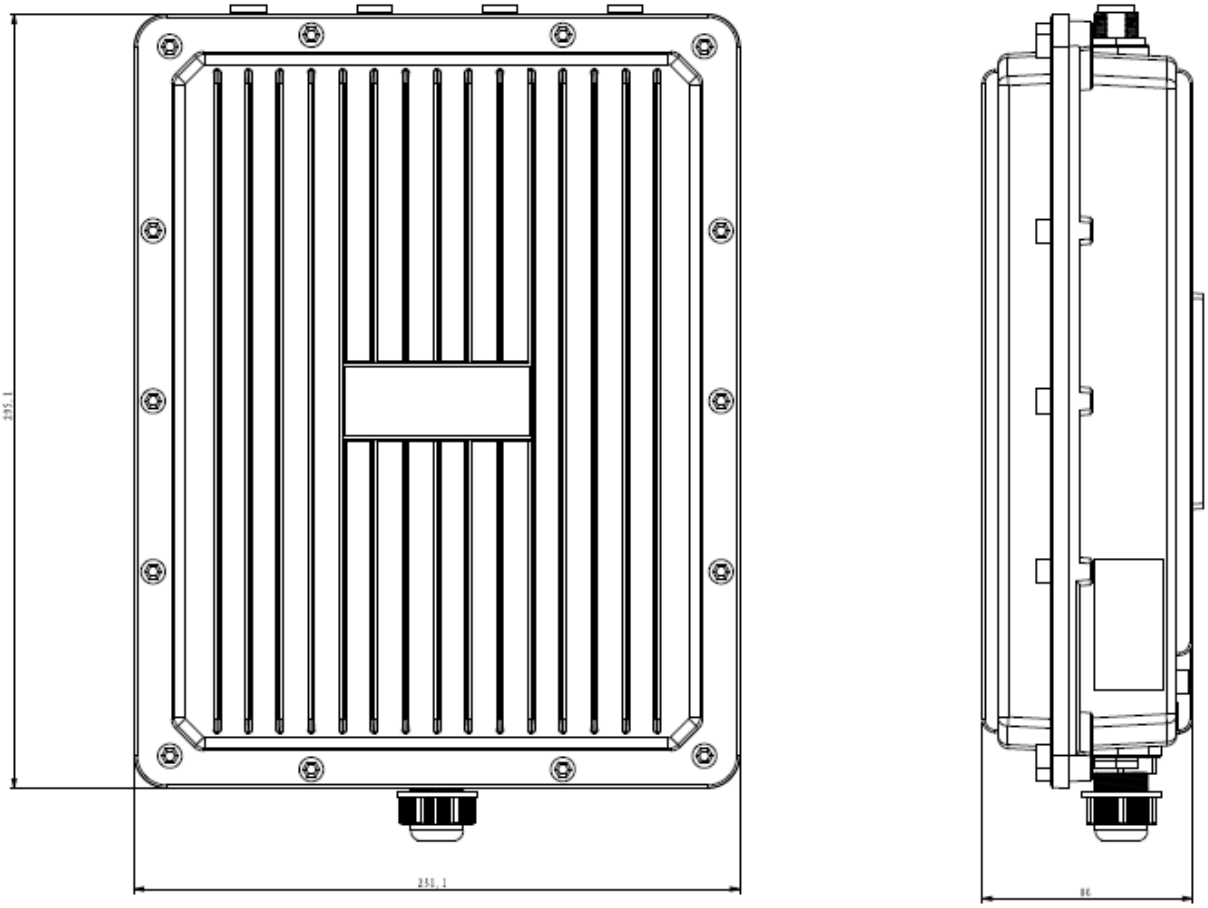
Object	Description
PoE Port (802.3af/at PoE+)	10/100/1000Mbps RJ45 port, auto MDI/ MDI-X Connect PoE port to the IEEE 802.3af/at PoE+ switch to power on the device.
LAN 1-2 Port	10/100/1000Mbps RJ-45 port, auto MDI/ MDI-X Connect this port to the network equipment.
RJ11 Port	6P4C 4-wire standard Connect this port to digital phone or traditional phone.

WDAP-850AC

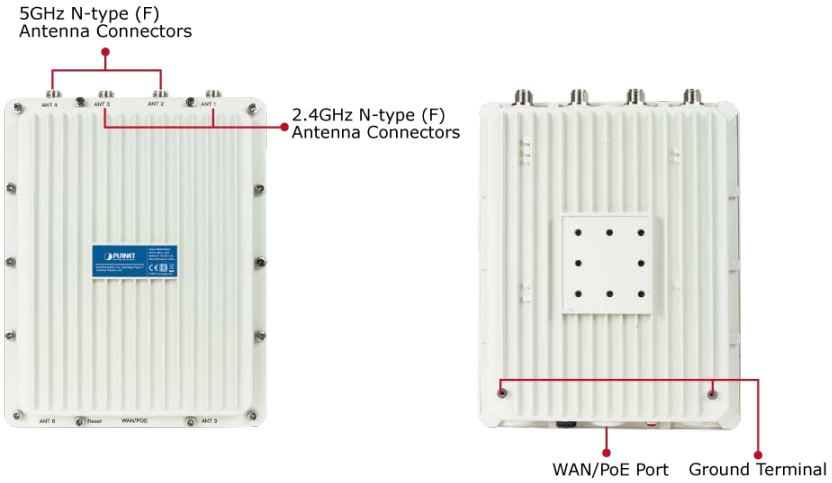
Dimensions(W x D x H): 231 x 80 x 295 mm

Weight: 2.3kg ± 0.1kg

Appearance



Port & Connector



Hardware Interface Definition

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
Reset Button	Press and hold the **Reset** button for over 10 seconds to return to the factory default setting.
Grounding Terminal	The grounding wire must be attached to this port to prevent damage to the AP from direct lightning strike.

Connecting to the AP

2.2 System Requirements

- Broadband Internet Access Service (Cable/xDSL/Ethernet connection)
- One IEEE 802.3at PoE switch (supply power to the WDAP Series)
- 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

Note

1. The AP in the following instructions refers to PLANET WDAP-C7210E. (Please refer to WDAP-W1200E/WDAP-850AC QIG to install the AP)
2. It is recommended to use Internet Explorer 11, Firefox or Chrome to access the AP.

2.3 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.

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. Take the mounting bracket, put it on the target place by aligning the holes and fix it with the supplied screws.

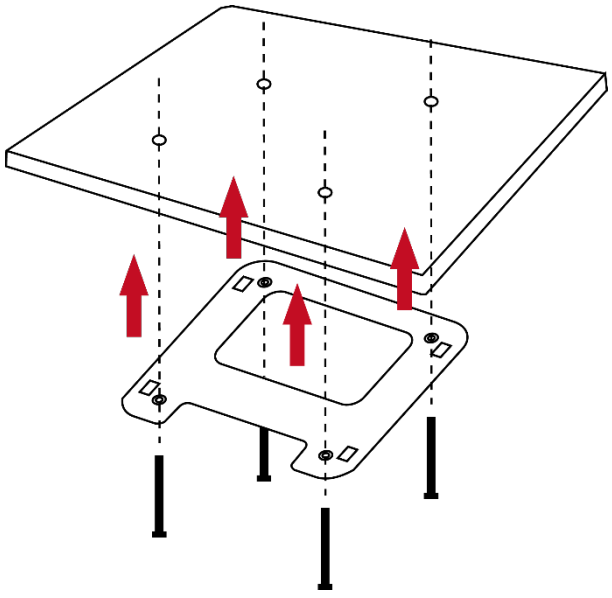


Figure 3-1 Mounting the Bracket

Step 2. Load the device into the mounting bracket, and be sure the device is mated with fixed screws. Then, lock the device in position and plug the Ethernet cable into the WDAP-C7210E.

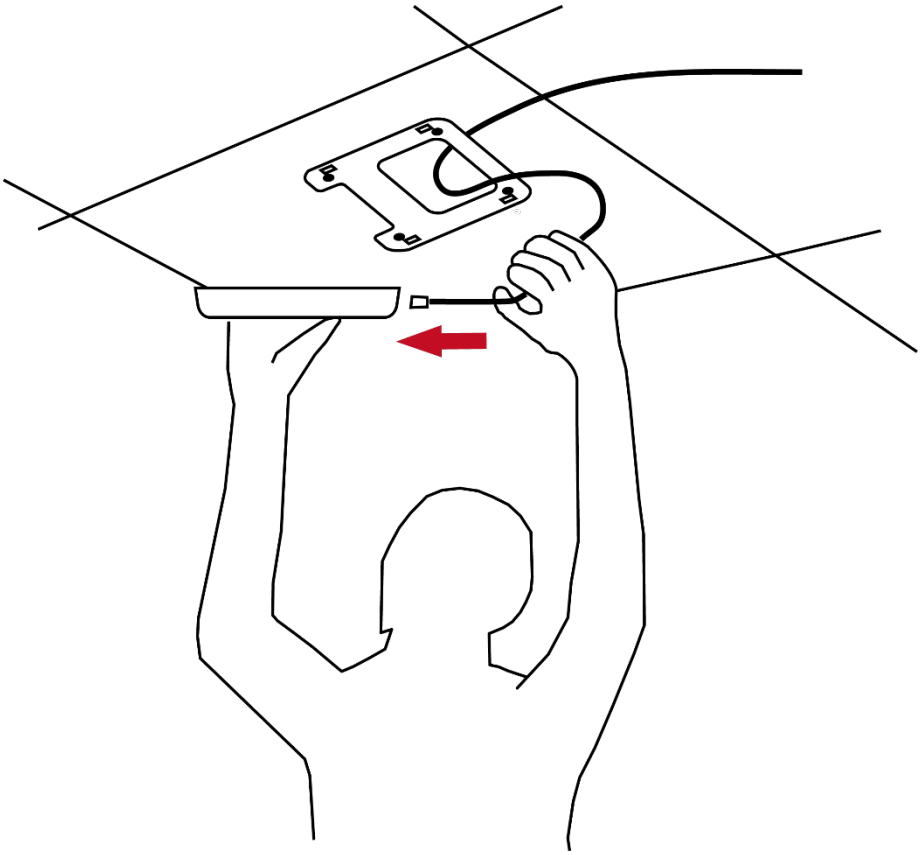


Figure 3-2 Connecting the Ethernet Cable

Step 3. Plug the other end of the Ethernet cable into the PoE switch.

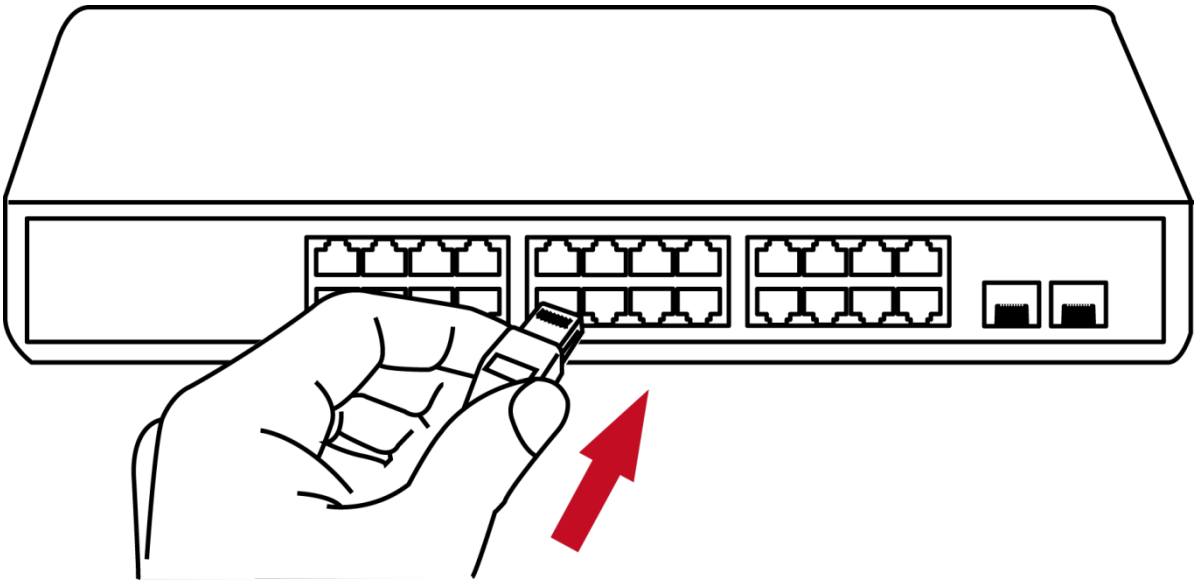


Figure 3-3 Connecting the PoE Injector

Chapter 3. Quick Installation Guide

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.

Manual Network Setup -- TCP/IP Configuration

3.1 The default IP address of the WDAP series 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 series with your PC by plugging one end of an Ethernet cable in the LAN port of the AP and the other end in the LAN port of PC. The WDAP series is powered by a PoE switch.

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.

3.1.1 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 series 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, the default IP address of the WDAP series is 192.168.1.253 and the DSL router is 192.168.1.254, or you may choose from 192.168.1.1 to 192.168.1.252.

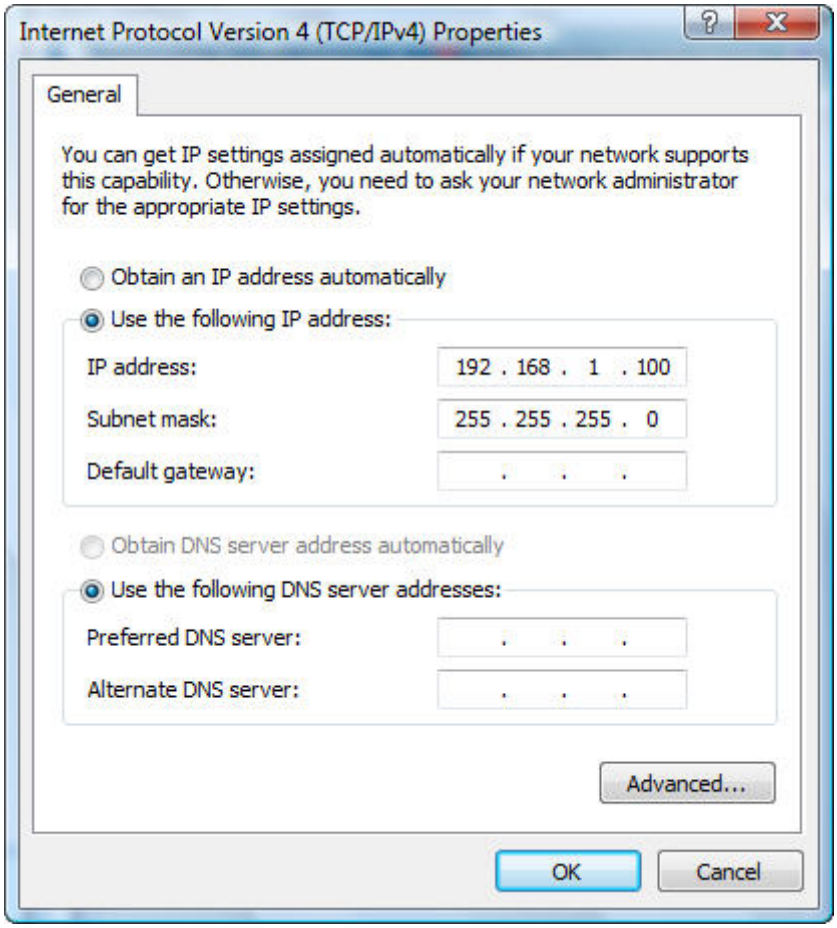


Figure 4-1 TCP/IP Setting

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.

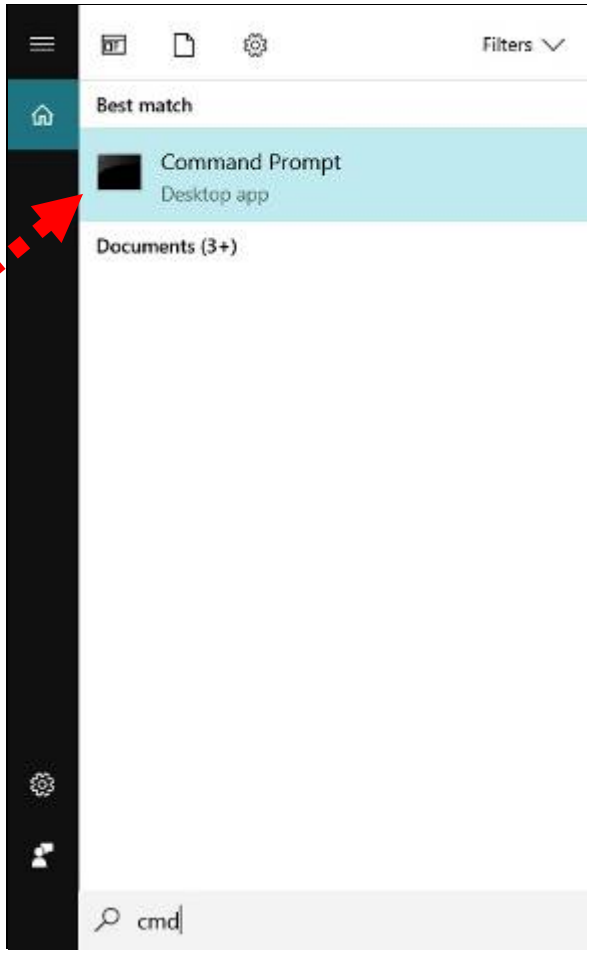


Figure 4-2 Windows Start Menu

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.

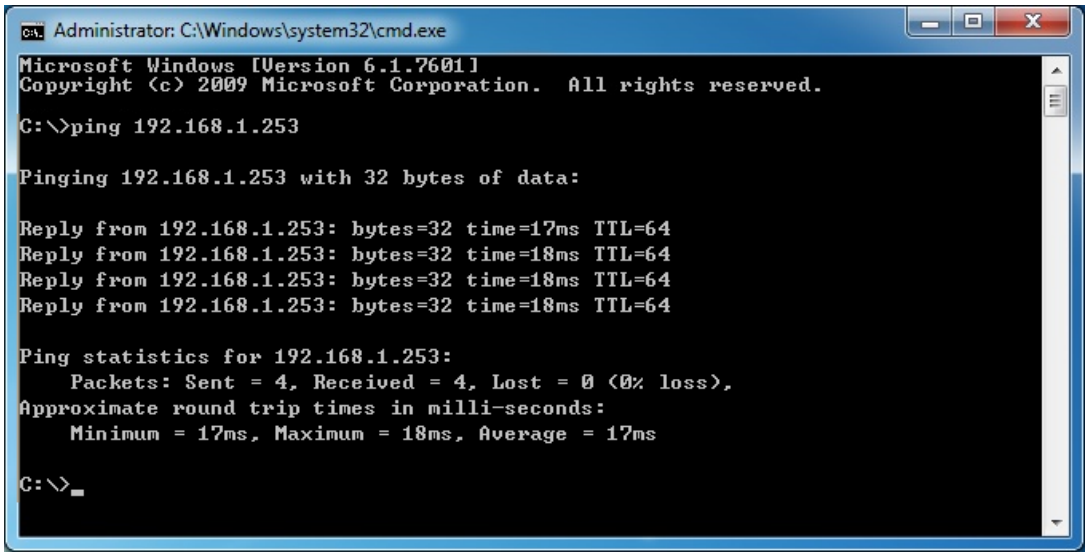


Figure 4-3 Successful Result of Ping Command

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

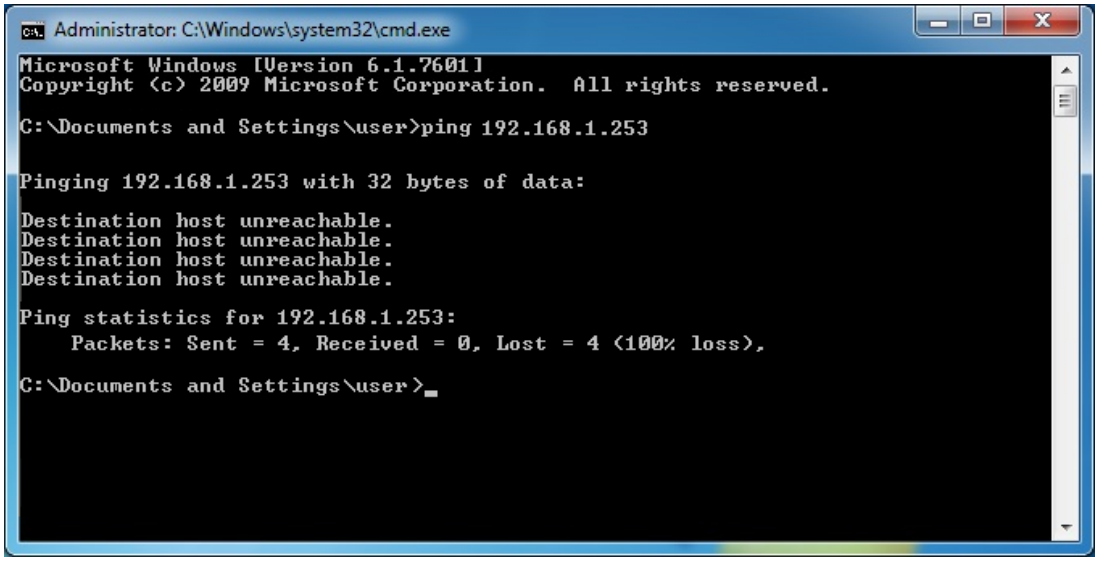


Figure 4-4 Failed Result of Ping Command

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.

Starting Setup in the Web UI

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

3. **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.

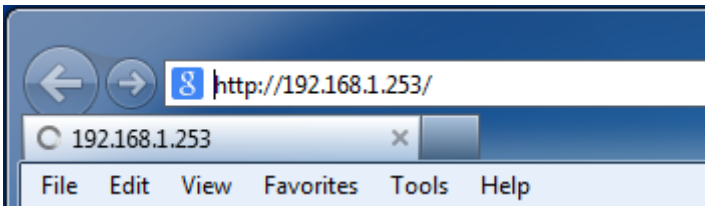


Figure 4-5 Login by Default IP Address

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.

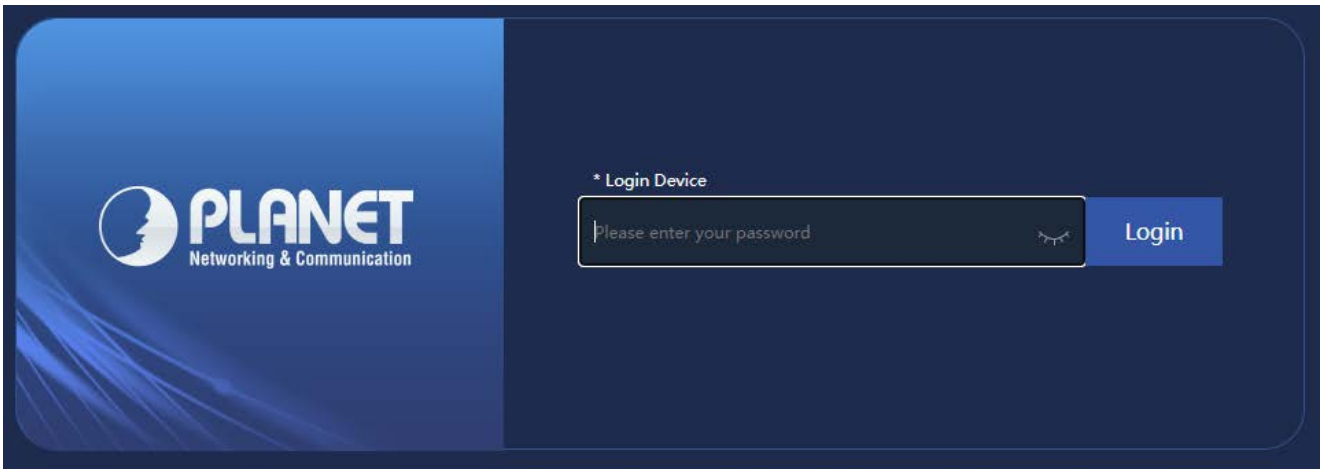


Figure 4-6 Login Window

Default IP Address: **192.168.1.253**

Default Password: **admin**

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 4. 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 below web GUI and topology uses WDAP-C7210E as an example)**

Figure 5-1 Main Menu

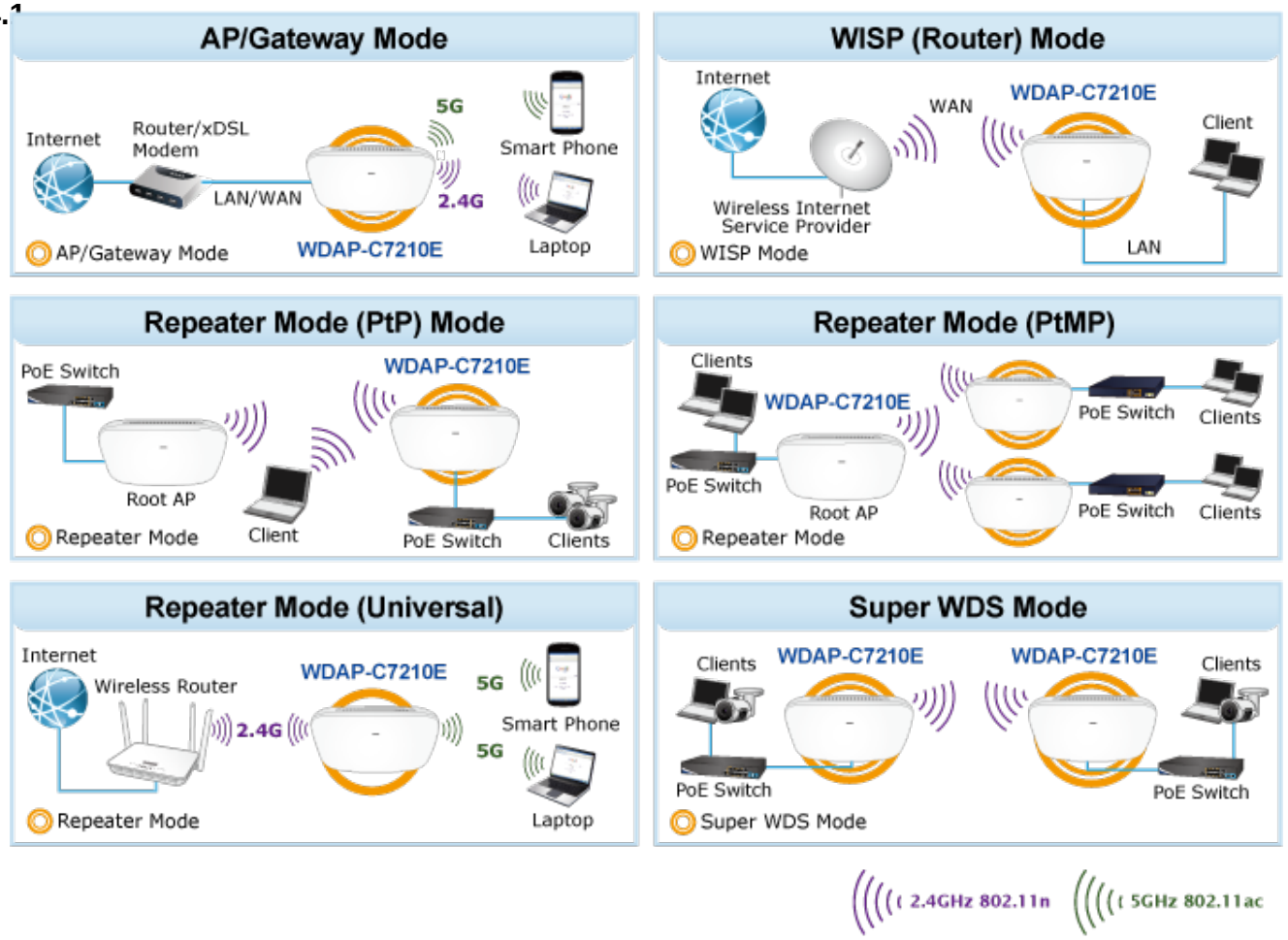
The page includes the following fields:

Object	Description
Operation Mode	It shows the current mode status.
Device Information	It shows the CPU/memory usage.
Device Description	You can enter the device description.
Flow (5G Wi-Fi) bps	It shows the Upstream/Downstream graph.
LAN Information	It shows the device IP mode, LAN IP, subnet, gateway and MAC address.
Wi-Fi Information	It shows the Wi-Fi status, SSID, channel, Encryption, MAC address and client list.
Version	It shows the firmware version (Double-click to show more detailed info.).

Wizard

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

4.1



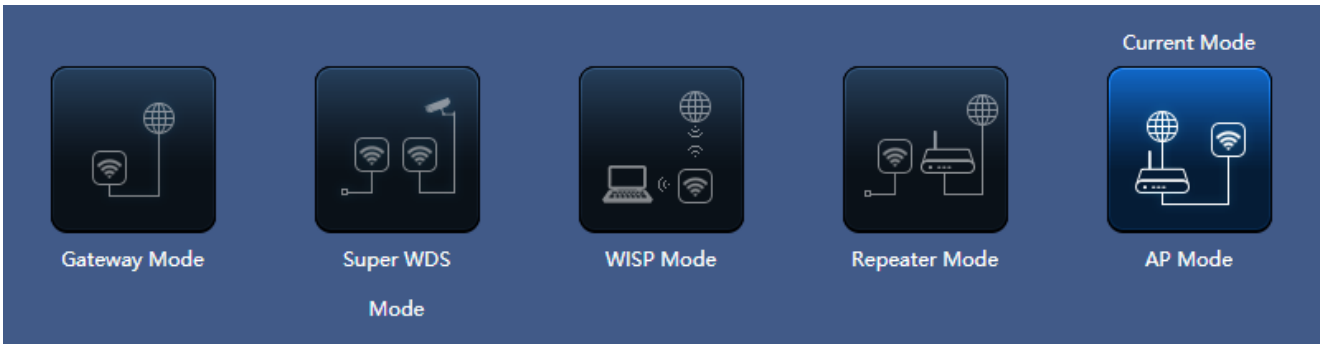


Figure 5-2 Operation Mode

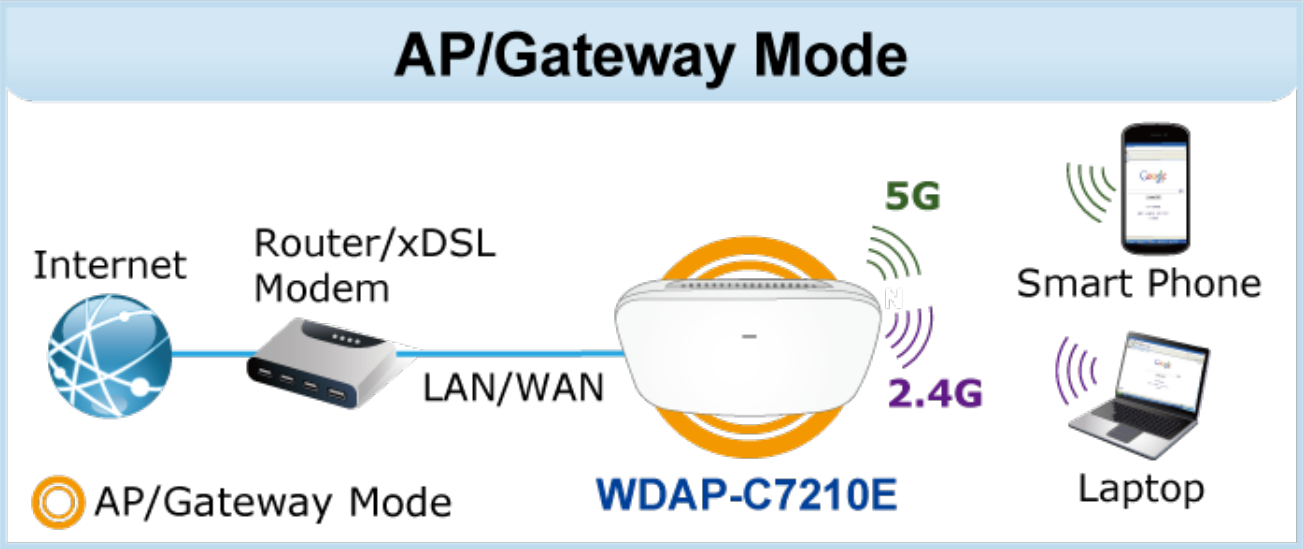
Note

The default operation mode is AP Mode.

Gateway Mode (Router)

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

4.2



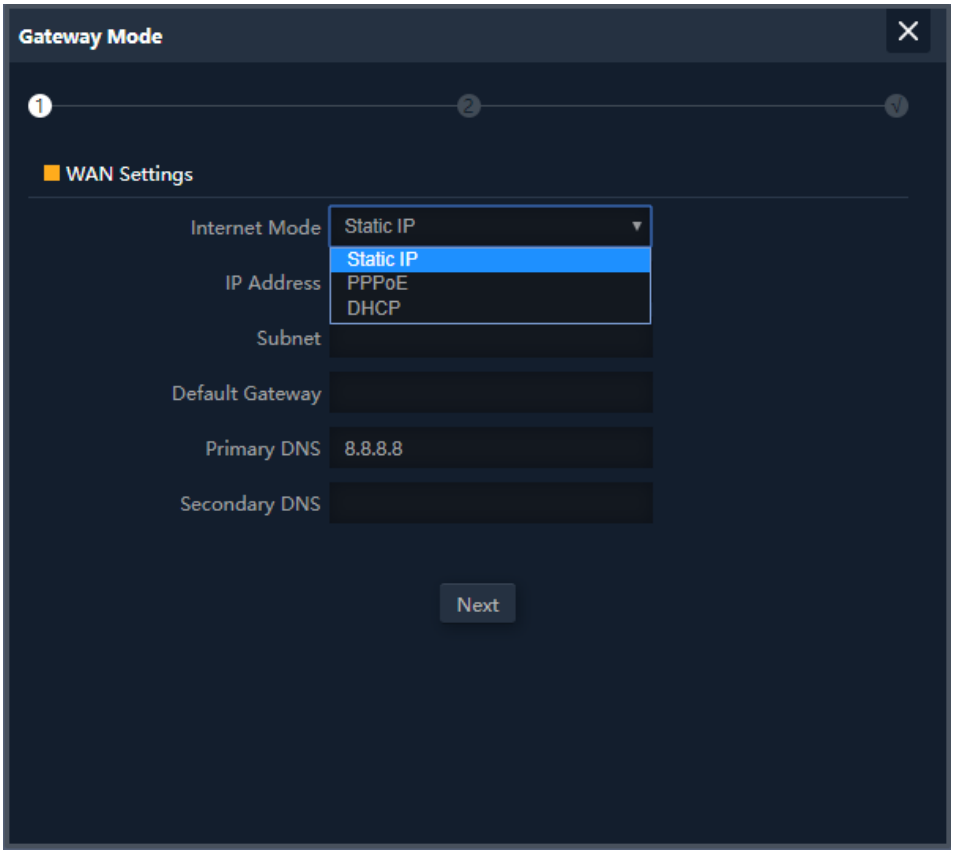


Figure 5-3 Gateway Mode

4.2.1 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.

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
Second DNS	Enter the second 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.

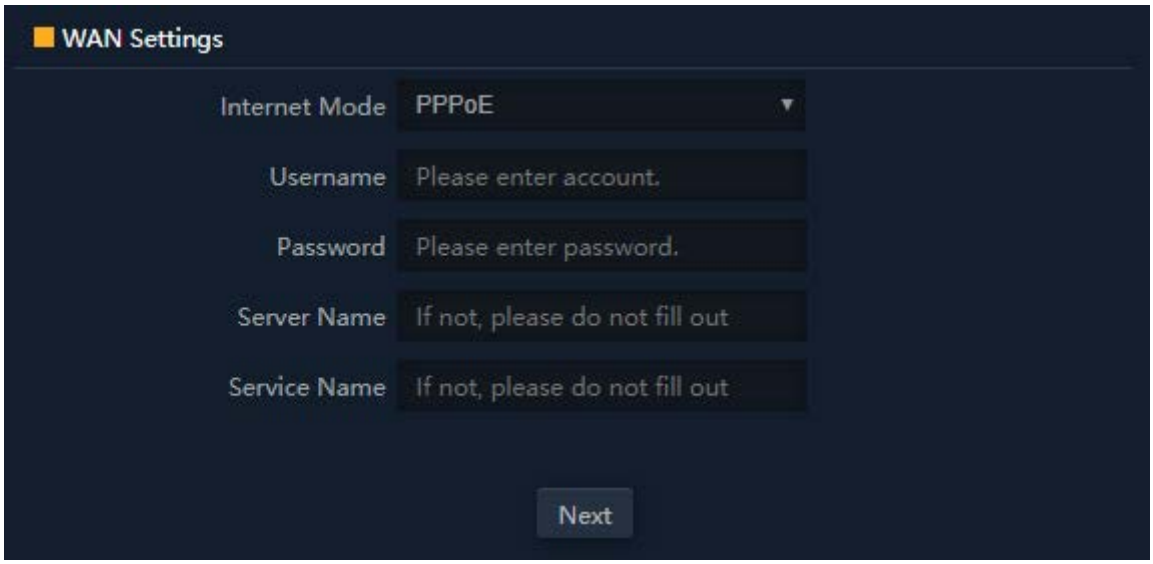


Figure 5-5 Gateway – PPPoE (ADSL)

The page includes the following fields:

Object	Description
Username	Enter the PPPoE User Name provided by your ISP
Password	Enter the PPPoE password provided by your ISP
Server Name	Enter the server name by your ISP, or not
Service Name	Enter the service name by your ISP, or not

DHCP

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

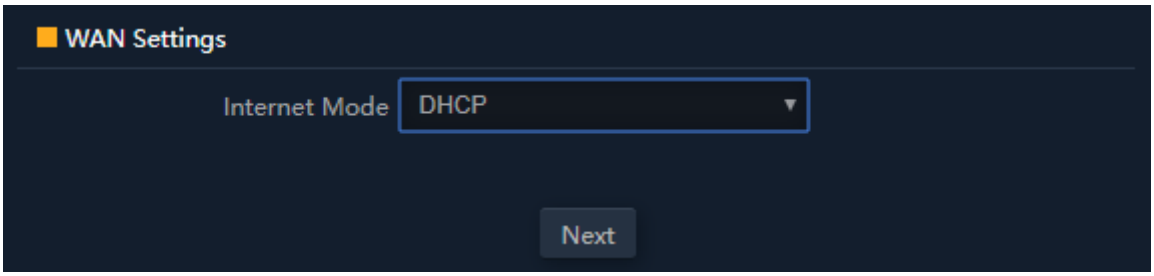
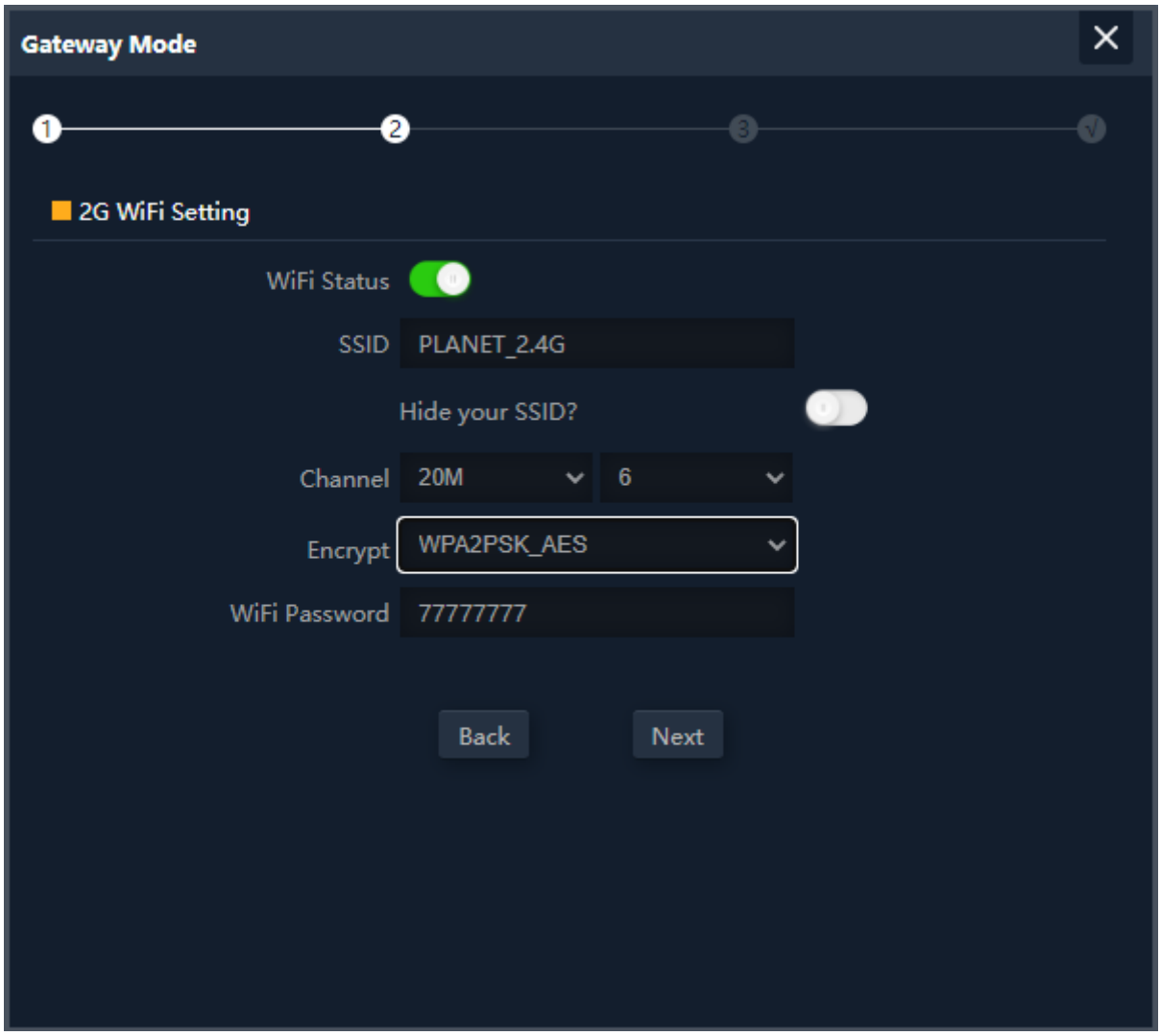


Figure 5-6 Gateway – DHCP

4.2.2 Wireless



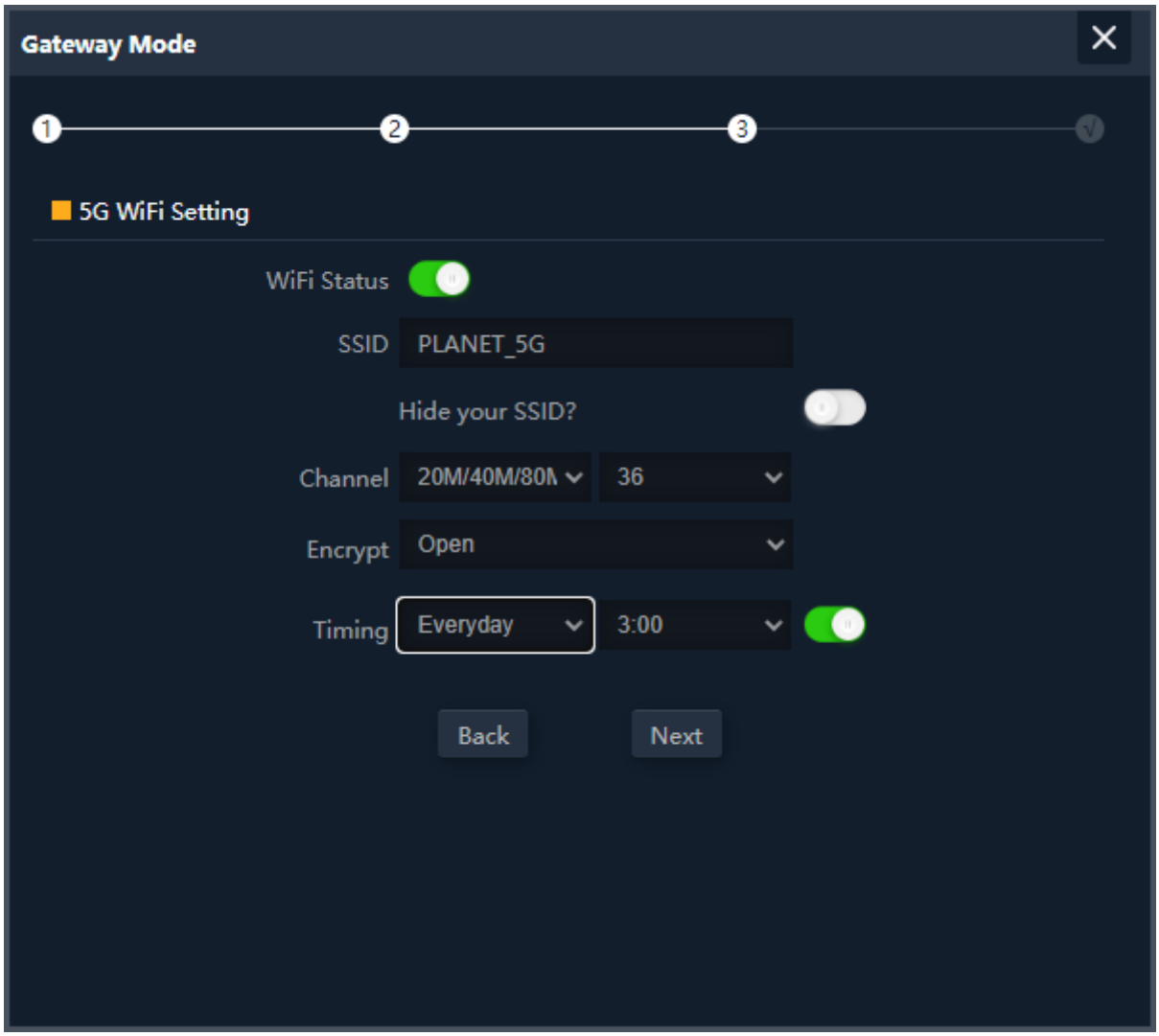


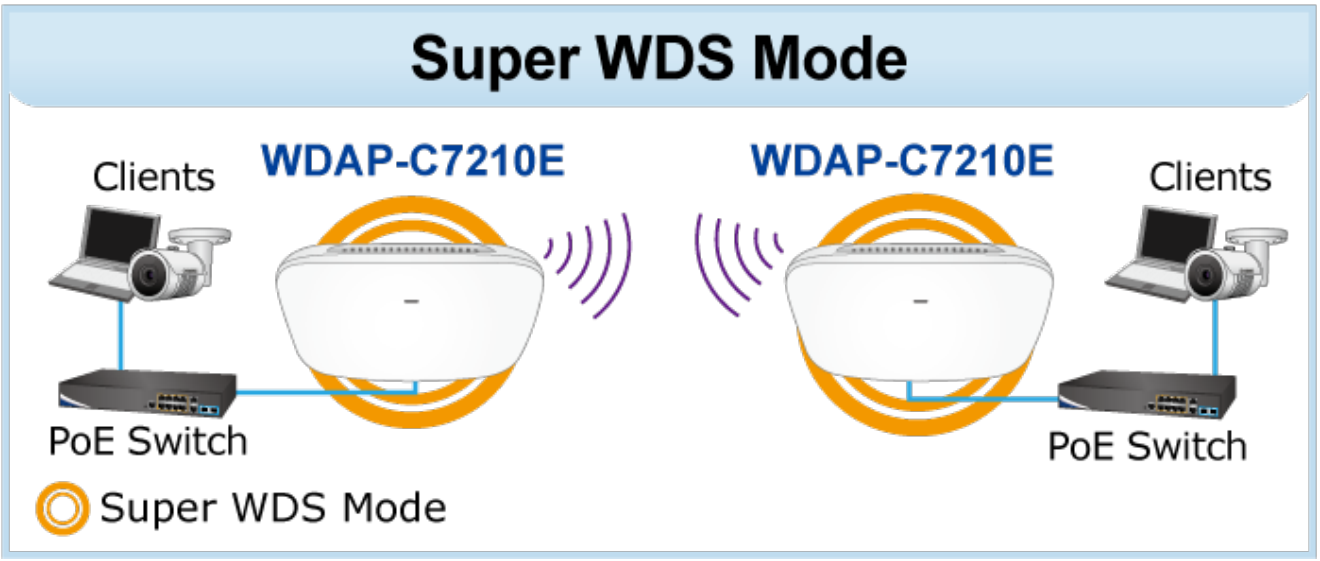
Figure 5-7 Gateway – Wireless

The page includes the following fields:

Object	Description
Wi-Fi Status	Select **ON (Green)** or **OFF (Gray)** to enable or disable wireless LAN
SSID	It is the wireless network name. The default SSID is **PLANET_2.4G** and **PLANET_5G**
Hide your SSID	Select **ON** (Green) or **OFF** (Gray) to hide wireless LAN or not
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**
Timing	Set time to restart for clock

4.3 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. If you want to use super WDS to do connection, make sure each WDAP series is already in Super WDS mode before scanning wireless.



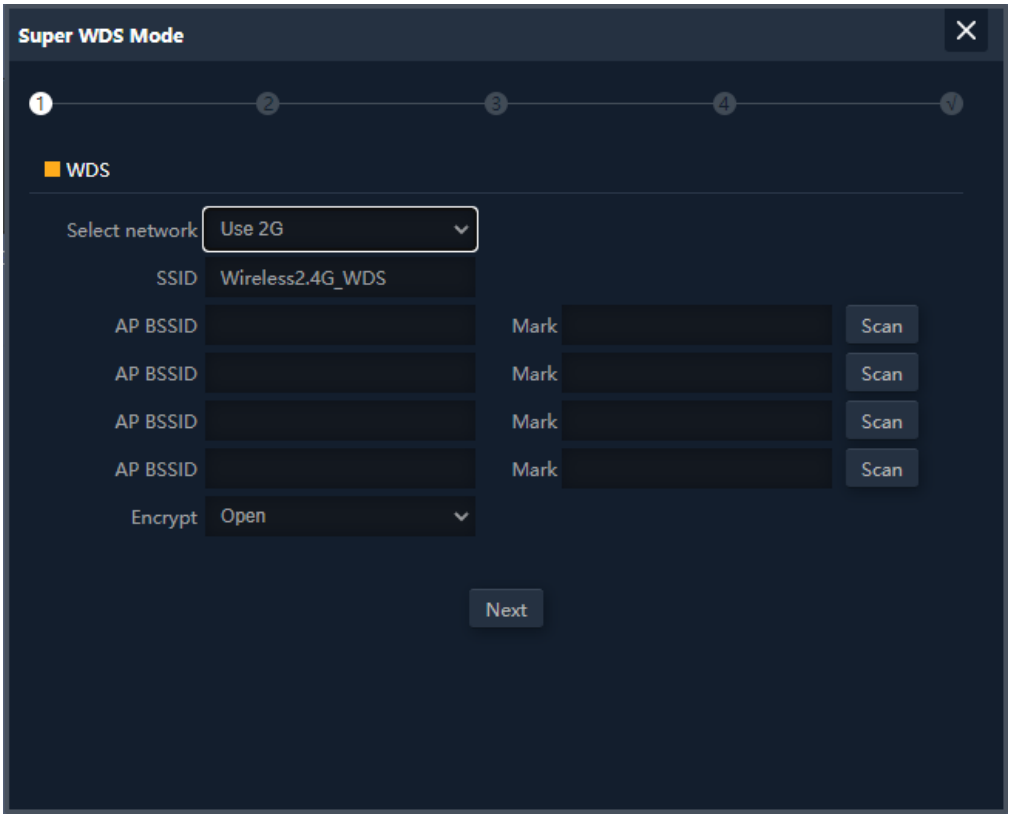


Figure 5-8 Super WDS Mode

The page includes the following fields:

Object	Description
Select Network	Select network for **using 2.4G** or **5G** to do connection.
WDS SSID	It is the WDS wireless network name. The default SSID is "**Wireless2.4G_WDS**" or "**Wireless5.8G_WDS**".
AP BSSID/Mark	Press the "**Scan**" button to find the WDS BSSID to connect.
Encrypt	Select open or WEP for the wireless encryption. The default is **None.** Key in the correct password for BSSID of WEP.

In this step you can set up the 2.4G and 5G wireless of AP SSID.

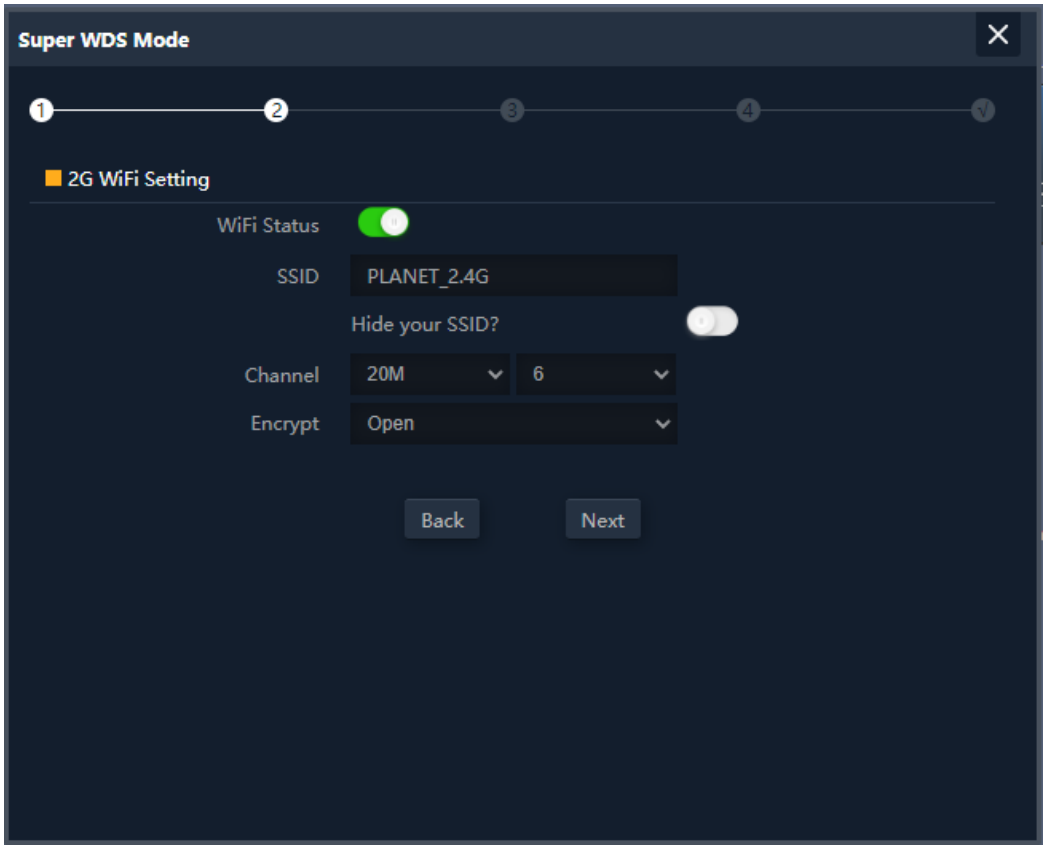


Figure 5-9 Super WDS Mode – 2.4G SSID

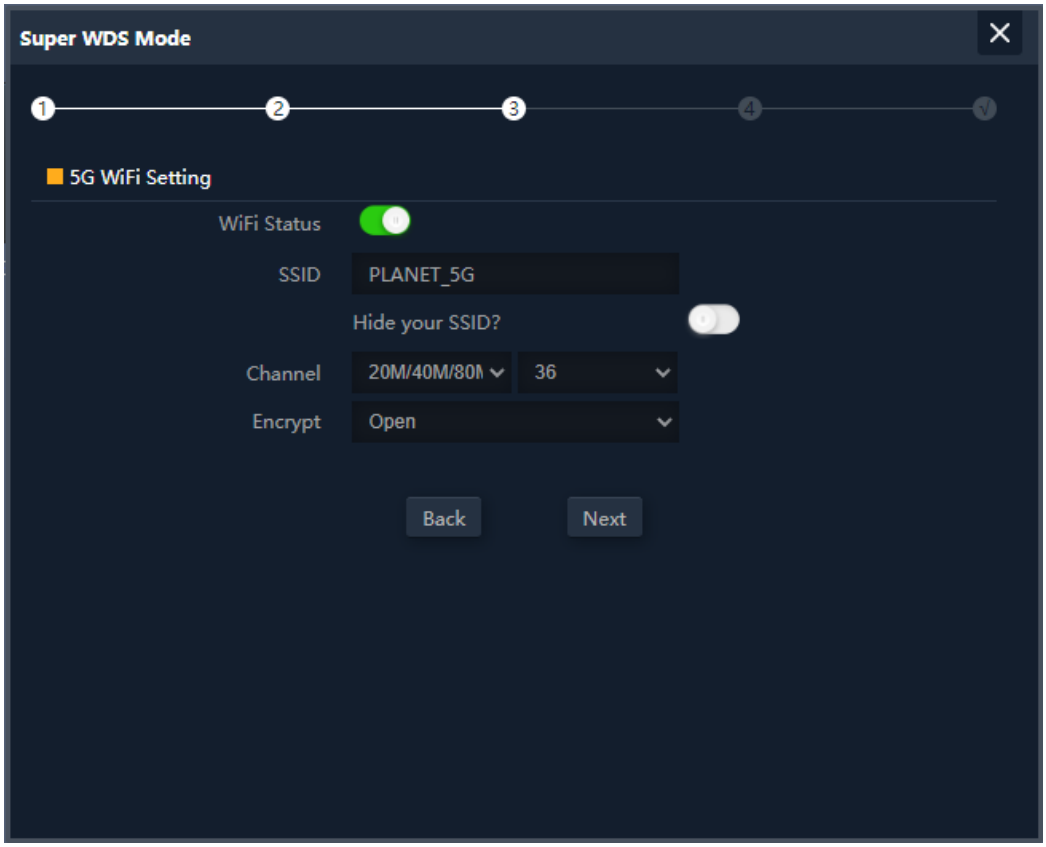


Figure 5-10 Super WDS Mode – 5G SSID

The page includes the following fields:

Object	Description
Wi-Fi Status	Select **ON (Green)** or **OFF (Gray)** to enable or disable wireless LAN
SSID	It is the wireless network name. The default SSID is "**PLANET_5G**"
Hide your SSID	Select **ON** (**Green**) or **OFF** (**Gray**) to hide wireless LAN or not
Bandwidth	Select the operating channel width, "**20MHz**" or "**40MHz**" or "**80MHz**"
Channel	Select the operating channel you would like to use. The channel range will be changed by selecting a different domain.
Encrypt	Select the wireless encryption. The default is "**None**"

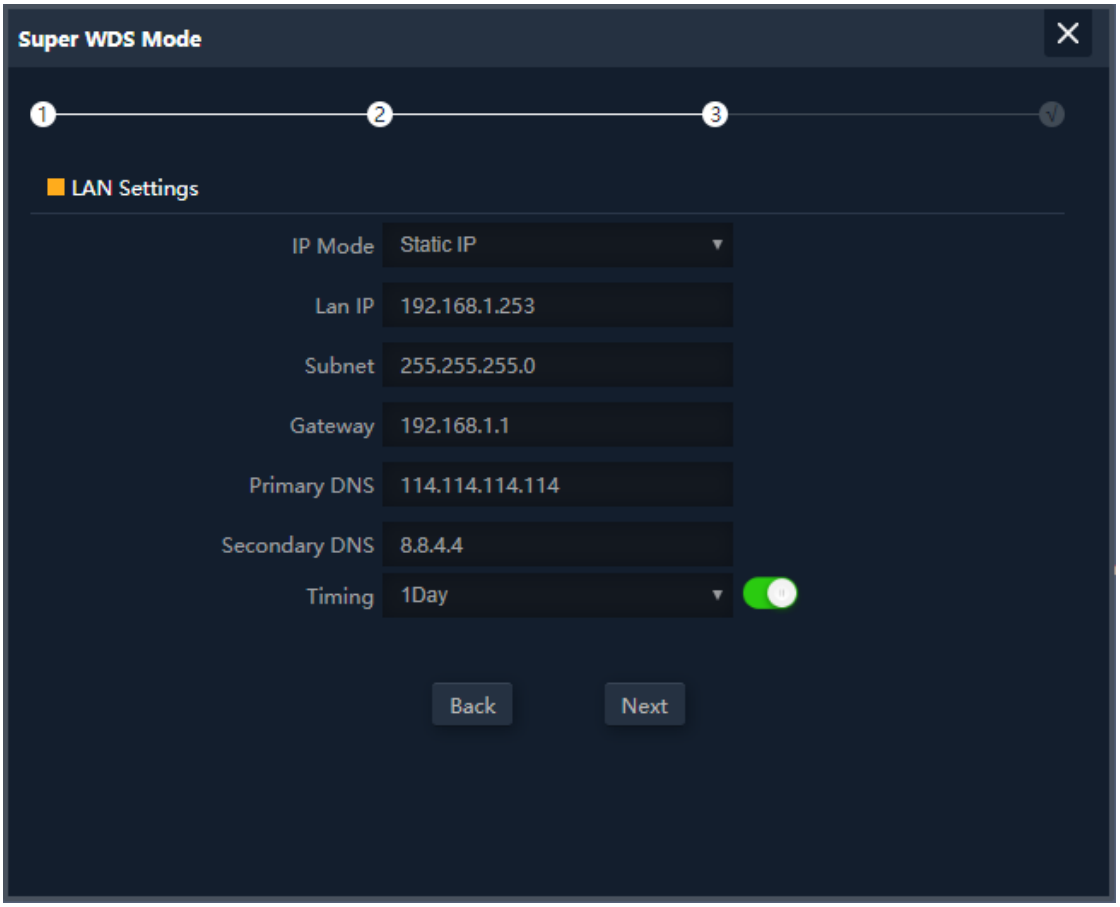


Figure 5-17 Super WDS Mode

The page includes the following fields:

Object	Description
IP Mode	Select "**Static IP**" or "**DHCP Client**" for setting up device IP
Timing	Set time to restart

Connection section for example,

AP1 – Enter the WDS SSID and encrypt password.

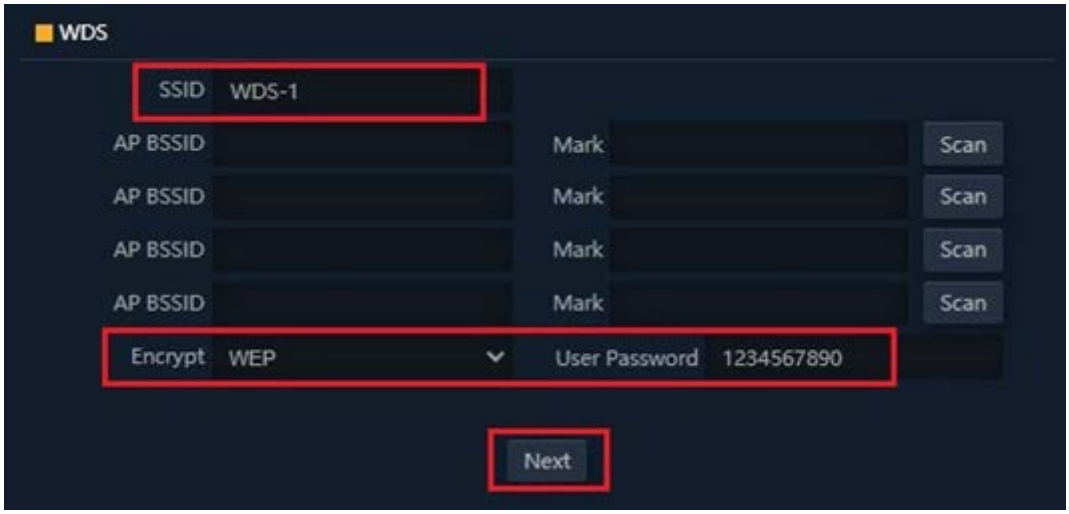


Figure 5-18 Super WDS Mode – AP1

AP2 -- Press the "**Scan**" button to find AP1 BSSID and choose it to connect. Enter the encrypt password.

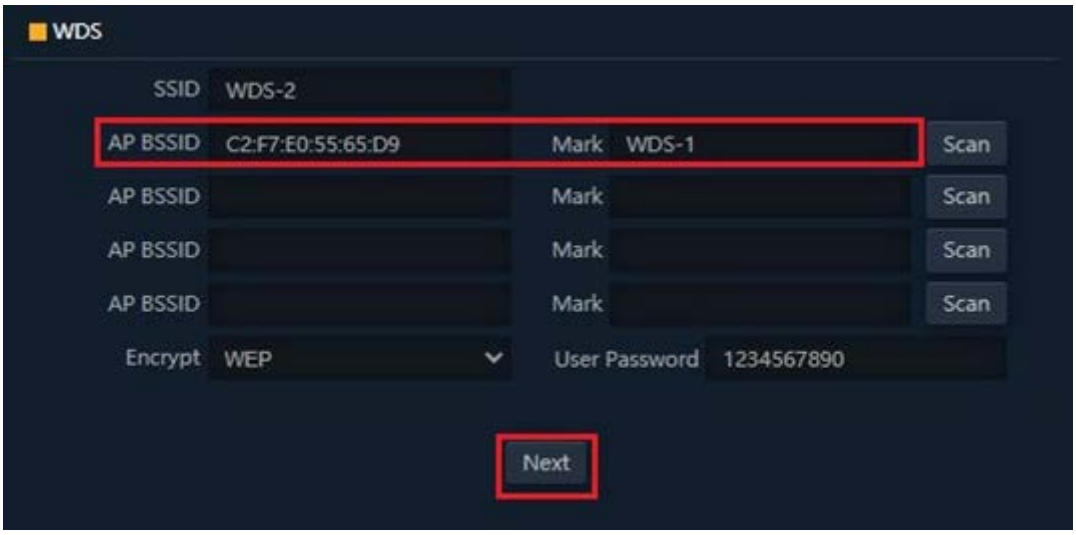
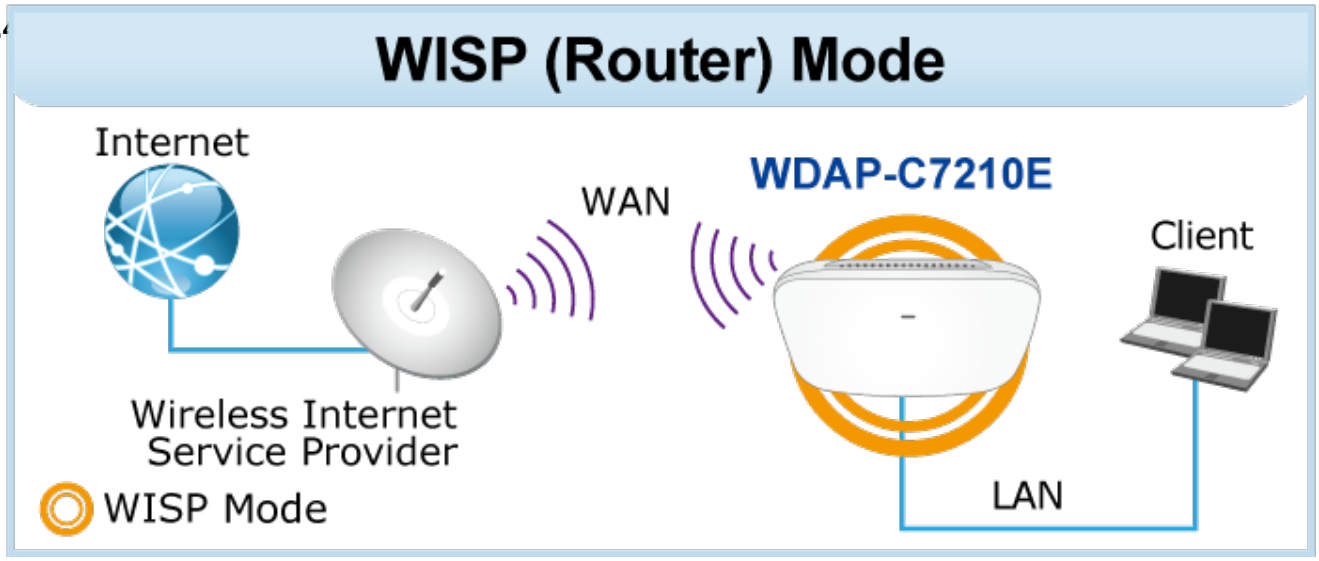


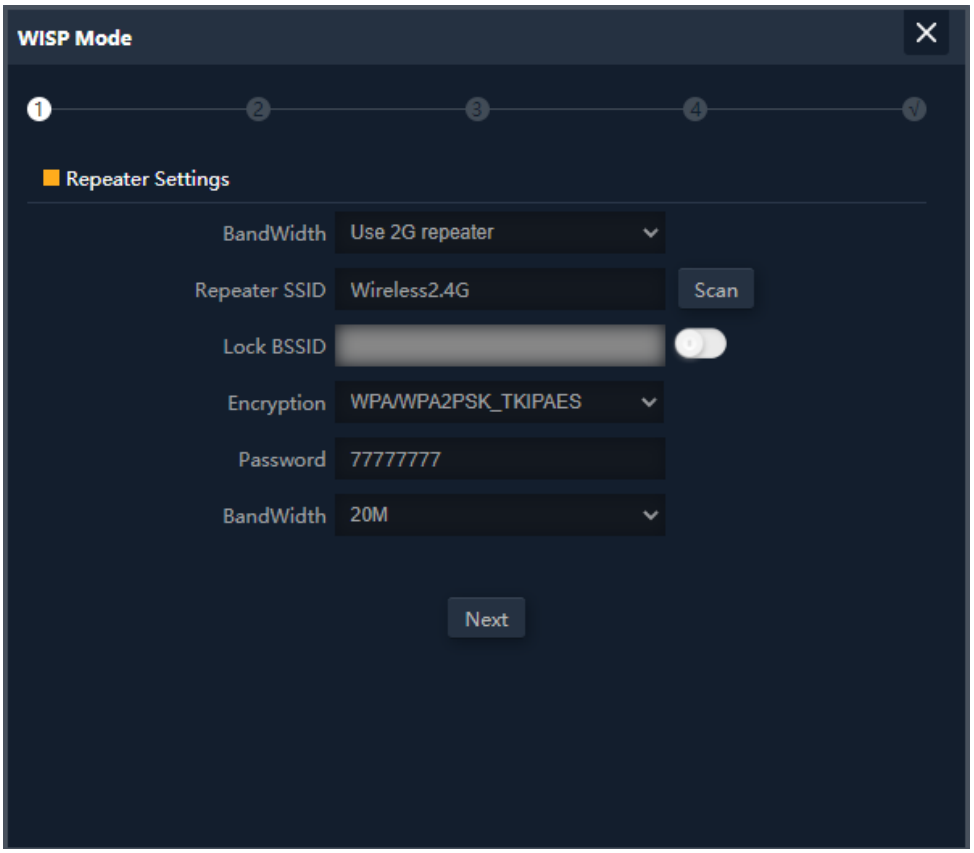
Figure 5-19 Super WDS Mode – AP2

WISP Mode

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

4.





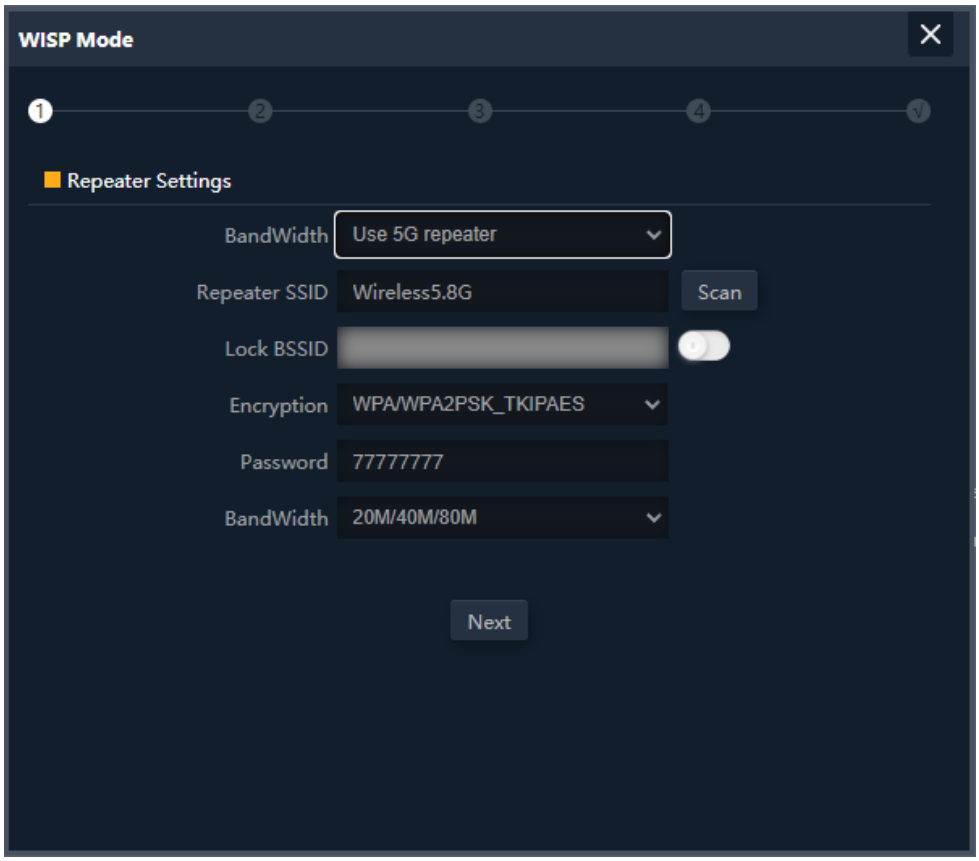


Figure 5-20 WISP Mode

The page includes the following fields:

Object	Description
Bandwidth	Select network for using **2.4G** or **5G** to do connection.
Repeater SSID	Enter the root AP's SSID or press "**Scan**" to select.
Lock BSSID	Check to lock the root AP's MAC address.
Encryption	Select the wireless encryption of root AP. The default is "**WPA/WPA2PSK_TKIPAES**".
Password	Enter the password of root AP.
Bandwidth	Select the operating channel width, "**20MHz**" or "**40MHz**" or "**80MHz**".

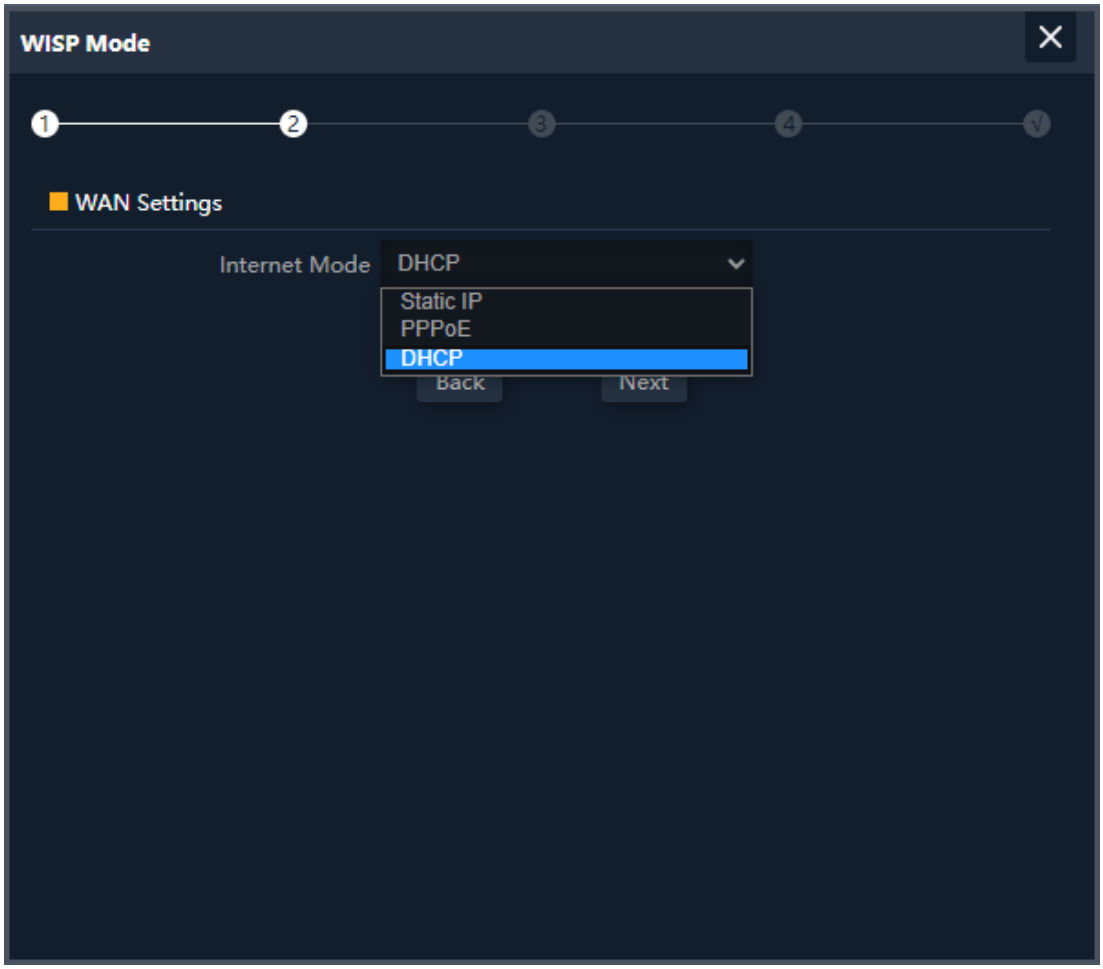
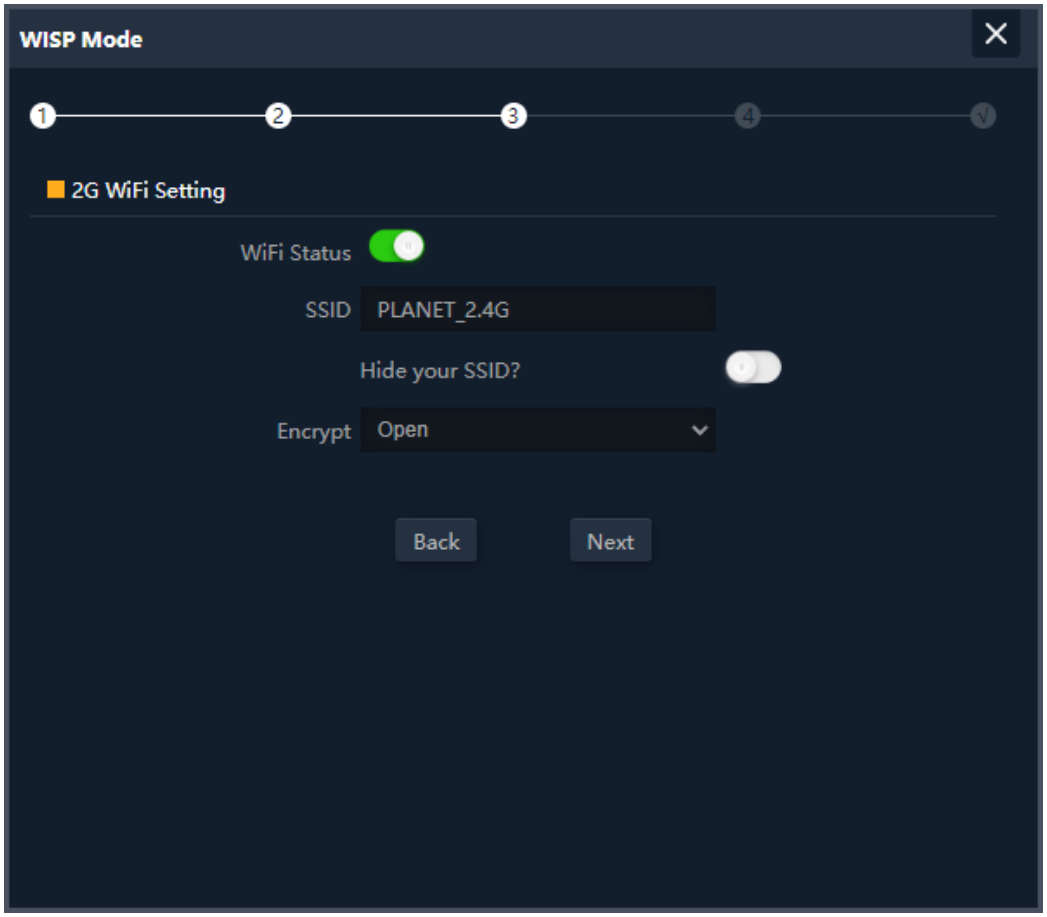


Figure 5-21 WISP Mode – Select Internet Mode (Set up WAN type)



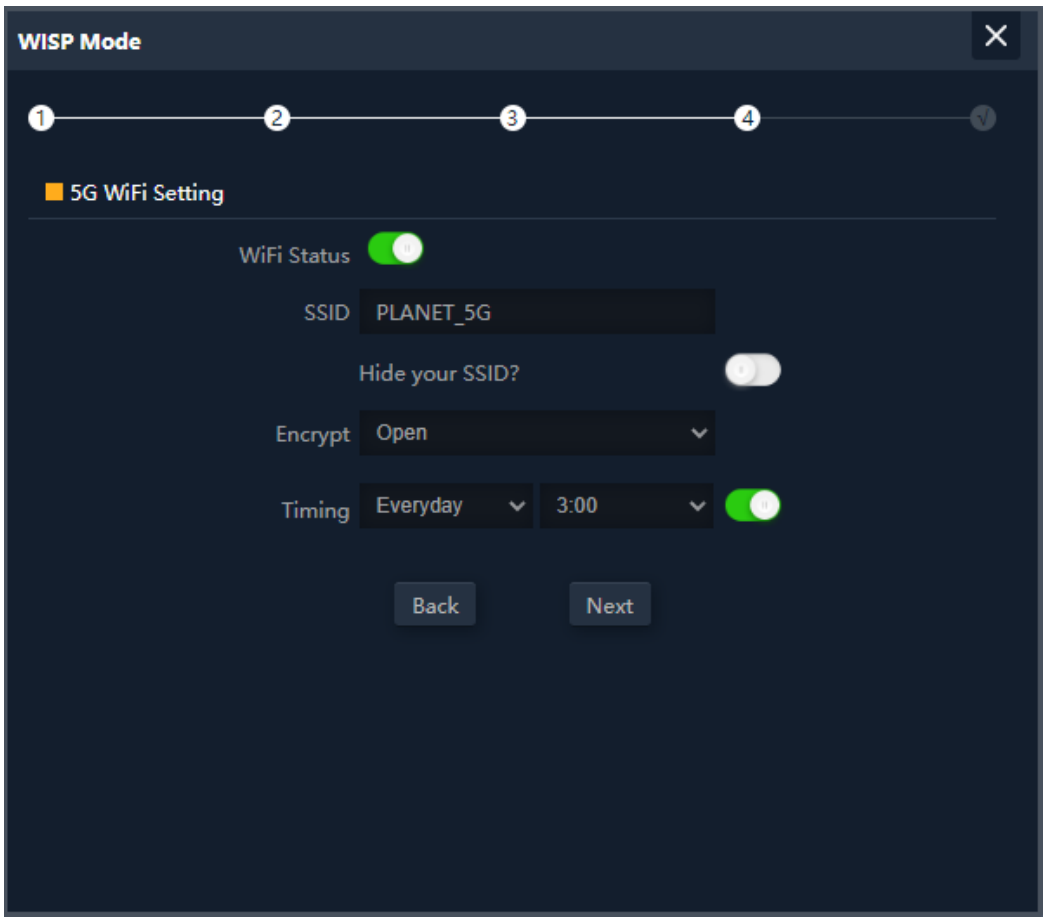
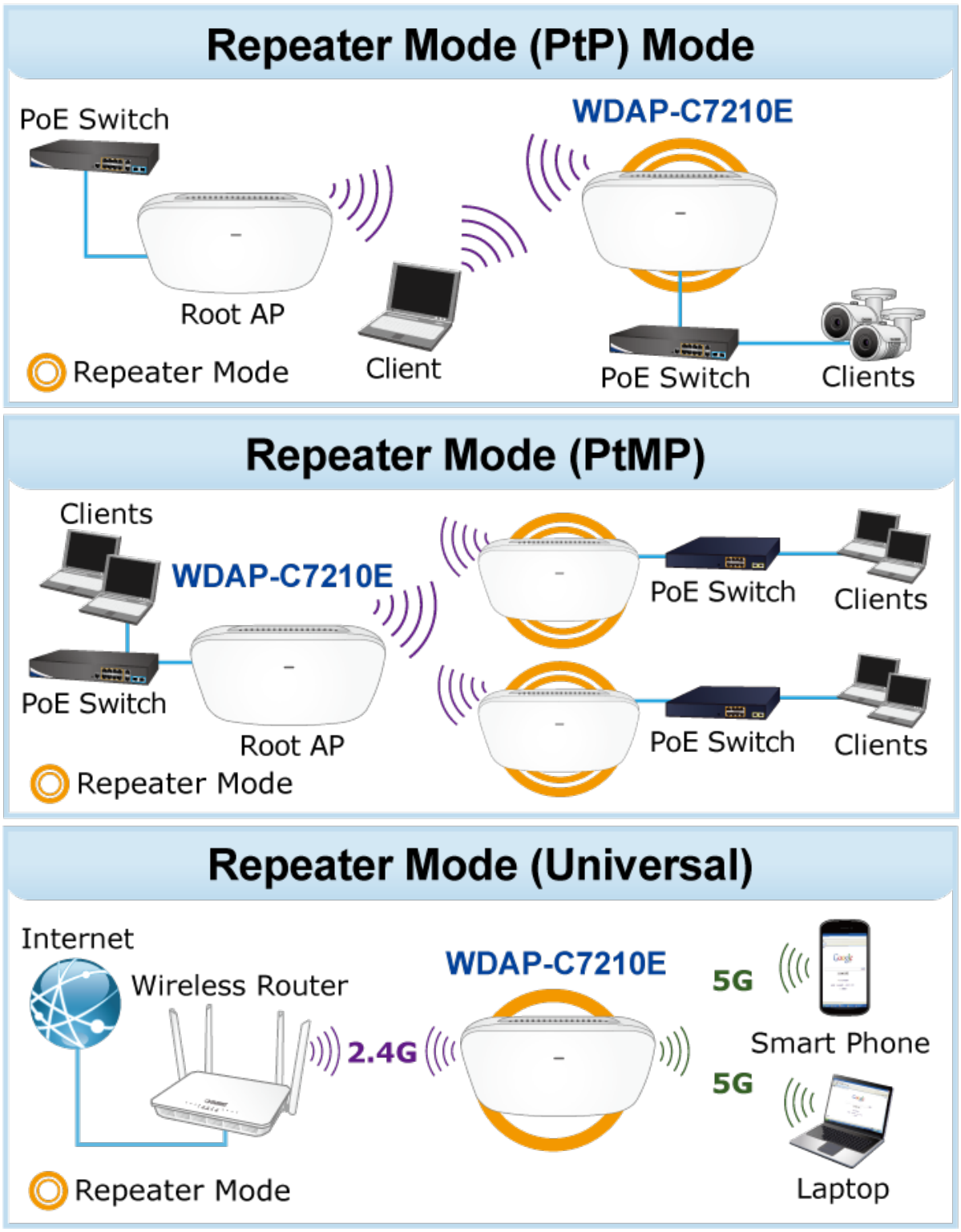


Figure 5-22 WISP Mode – Setting up Wi-Fi

Repeater Mode (Universal Repeater)

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

4.5



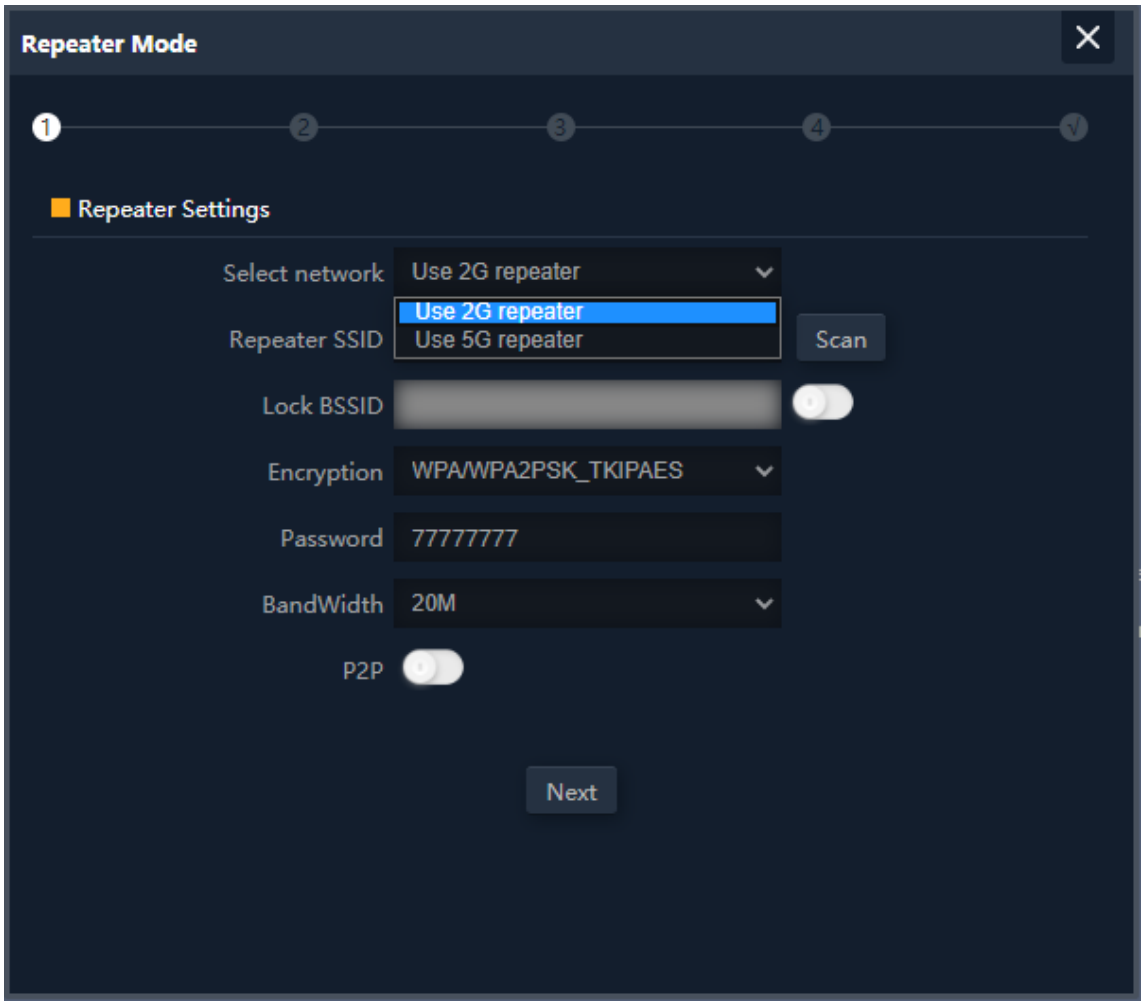


Figure 5-23 Repeater Mode

The page includes the following fields:

Object	Description
Select Network	Select "**2.4G**" or "**5.8G**" wireless LAN.
Repeater SSID	Enter the root AP's SSID or press "**Scan**" to select.
Lock BSSID	Check to lock the root AP's MAC address.
Encryption	Select the wireless encryption of root AP. The default is "**WPA/WPA2PSK_TKIPAES**".
Password	Enter the password of root AP.
Bandwidth	Select the operating channel width, "**20MHz**" or "**40MHz**" or "**80MHz**".
P2P	Enable switch for Point to Point function.

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

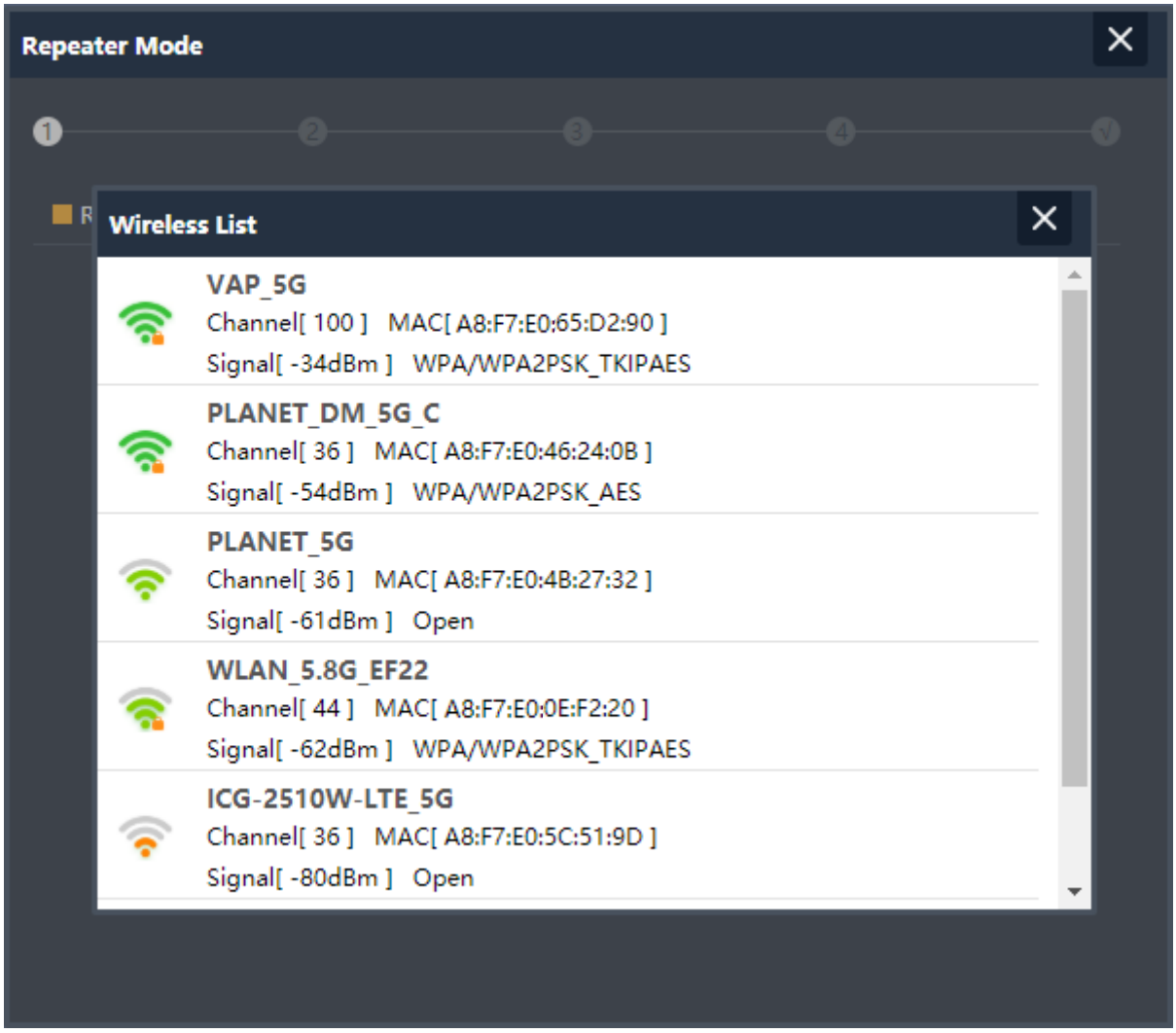
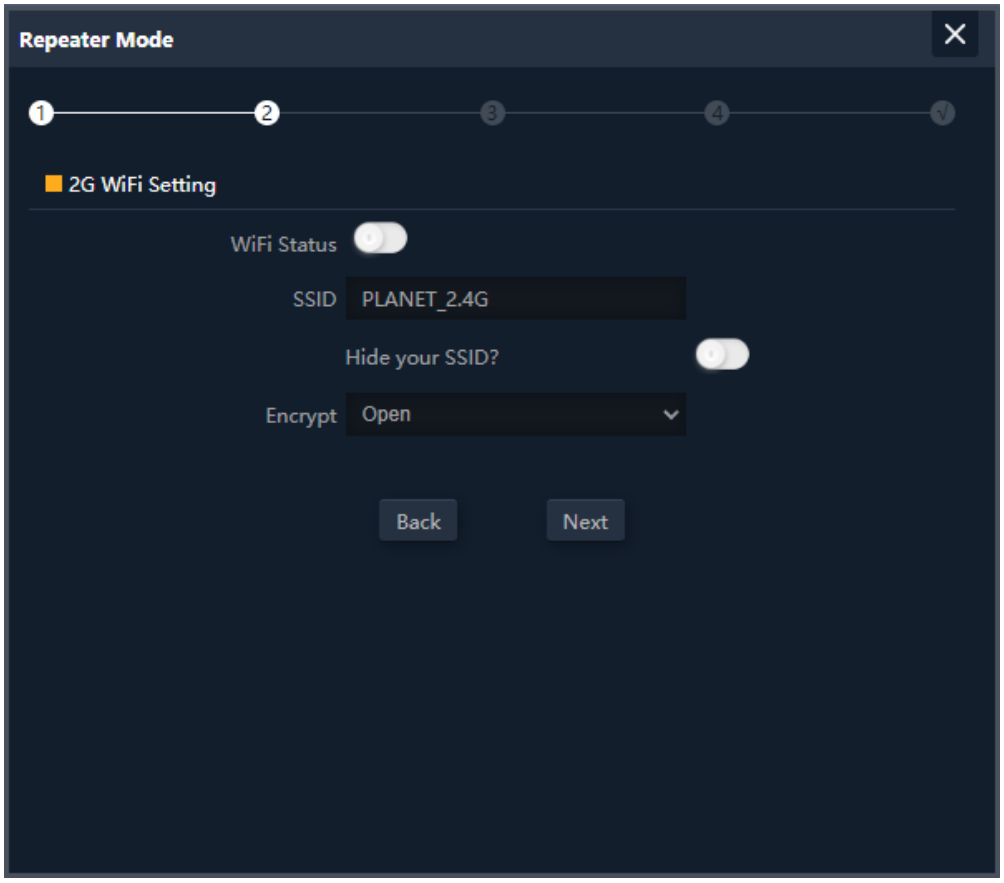


Figure 5-24 Repeater Mode -- Scan Root AP

Set up the repeater wireless network



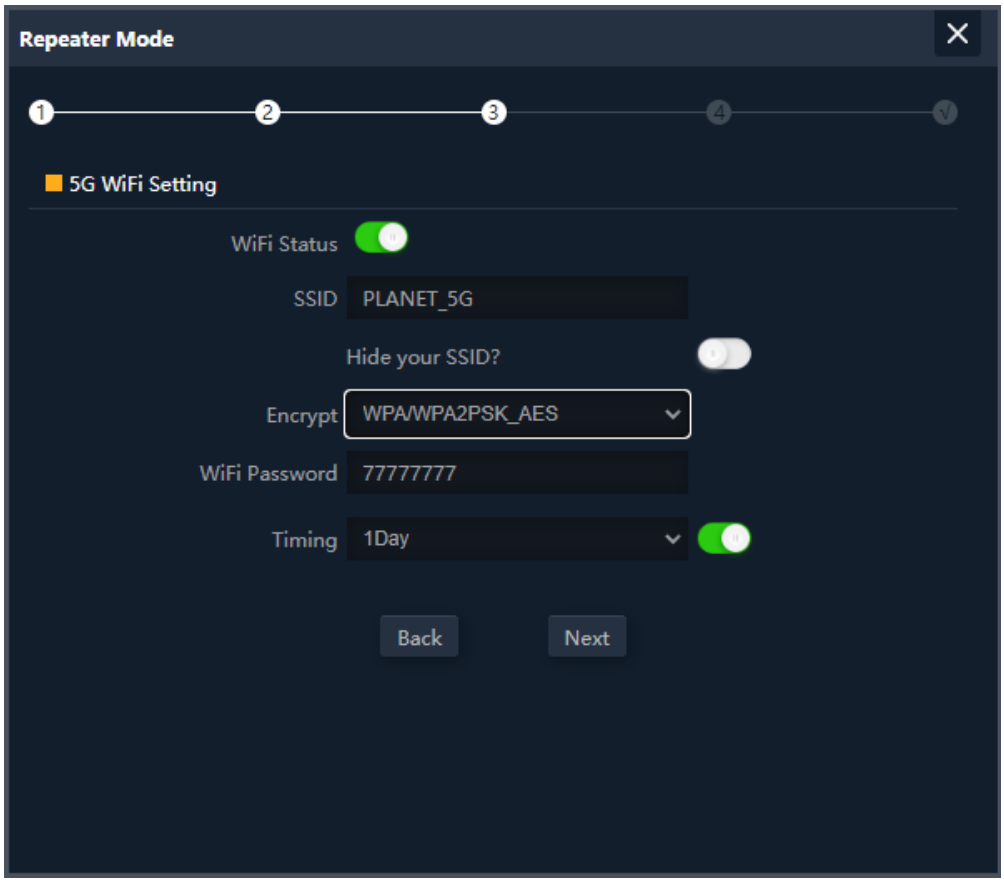


Figure 5-25 Repeater Mode – Setting up Wi-Fi

The page includes the following fields:

Object	Description
Wi-Fi Status	Select **ON (Green)** or **OFF (Gray)** to enable or disable wireless LAN.
SSID	It is the wireless network name. The default SSID is "**PLANET_5G**".
Hide your SSID	Select **ON** (**Green**) or **OFF** (**Gray**) to hide wireless LAN or not.
Encryption	Select the wireless encryption. The default is "**None**".
Timing	Set time to restart.

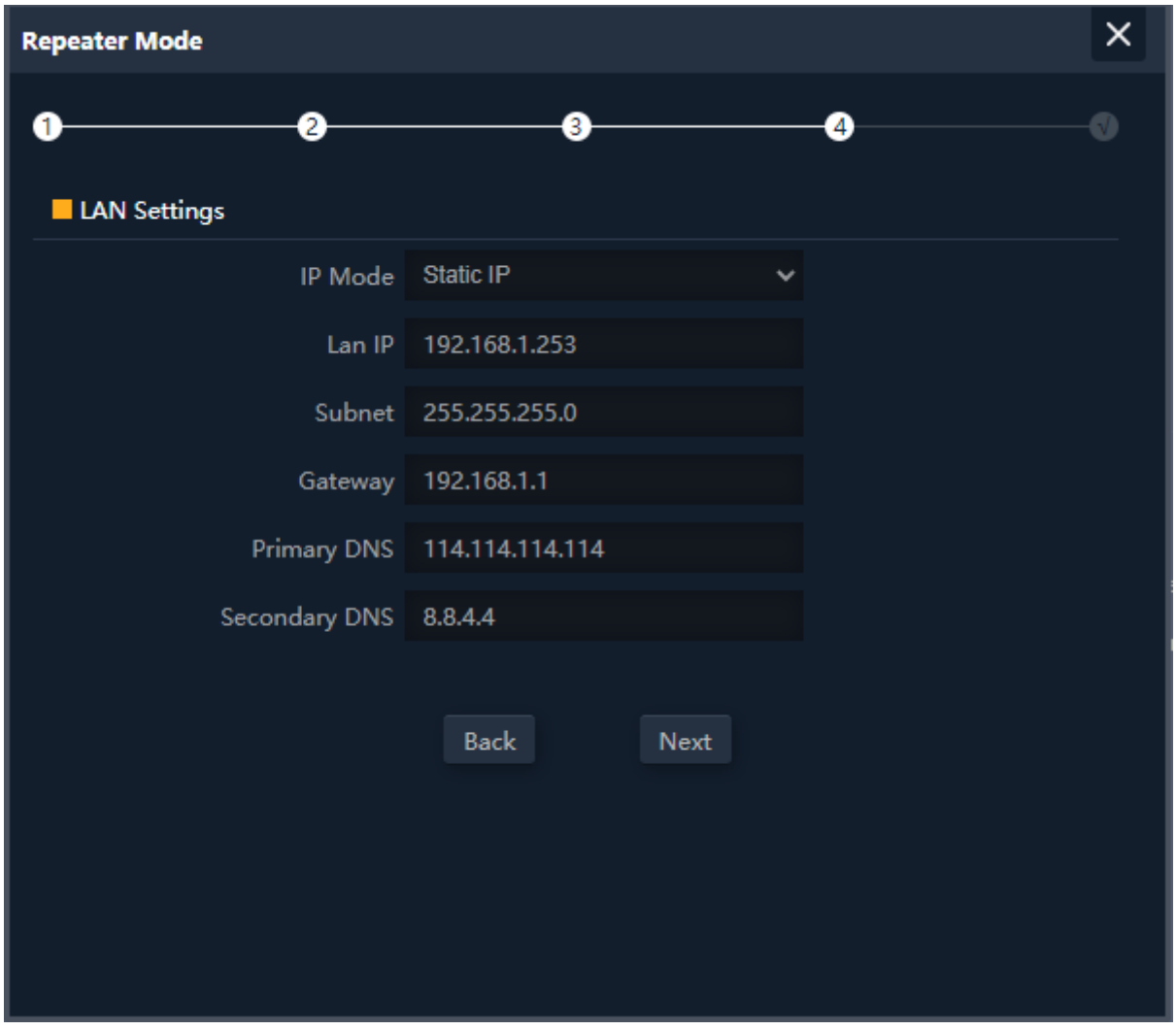


Figure 5-26 Repeater Mode – Setting up device IP

The page includes the following fields:

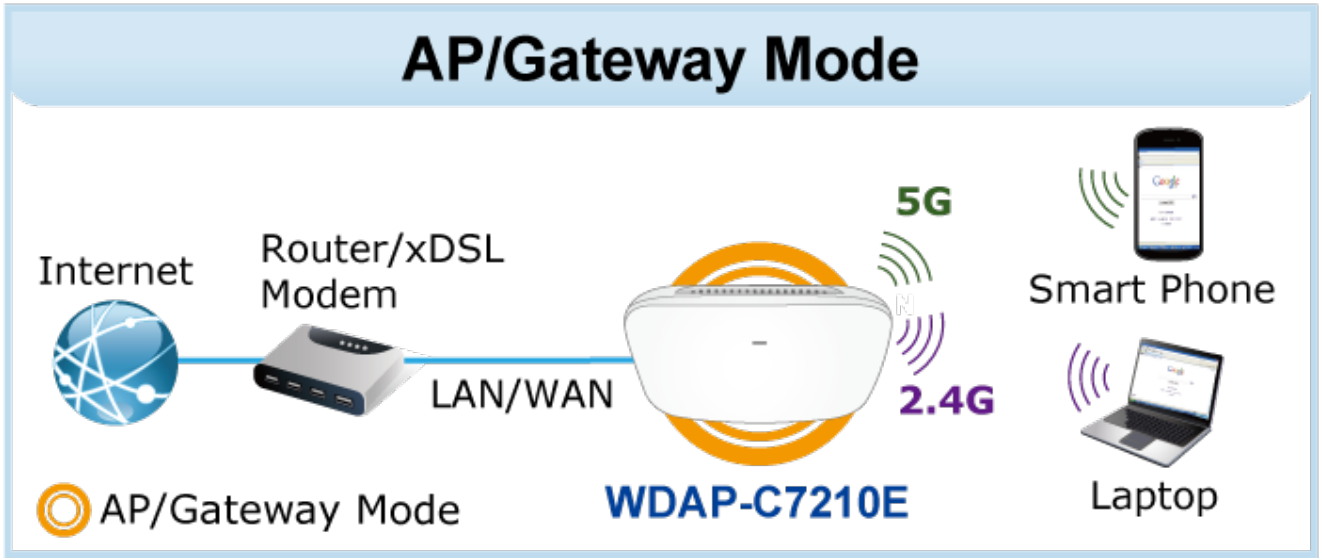
Object	Description
IP Mode	Select “**Static IP**” or “**DHCP Client**” for setting up device IP.
LAN IP	Enter the AP static IP address.
Subnet	Enter the network mask.
Gateway	Enter the default gateway IP address.
Primary DNS	Enter the primary DNS IP address, or not.
Secondary DNS	Enter the secondary DNS IP address, or not.

Enter the LAN IP address.

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.

4.6



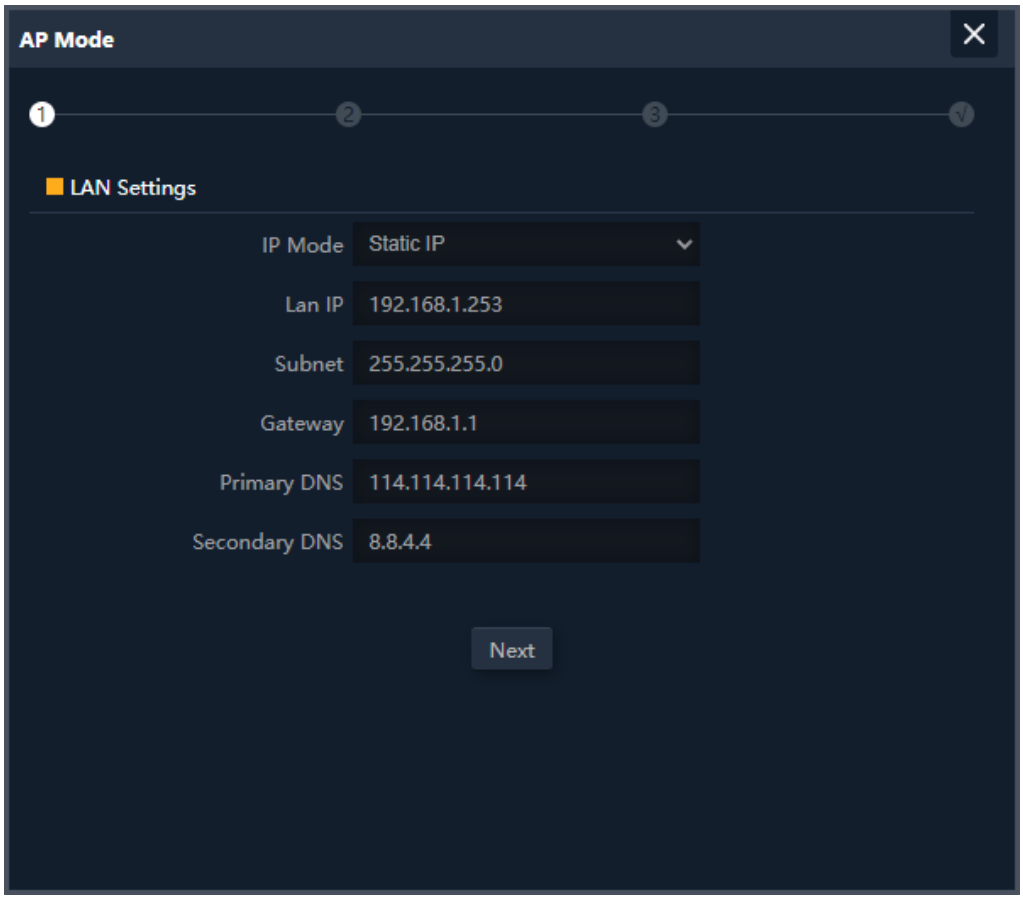
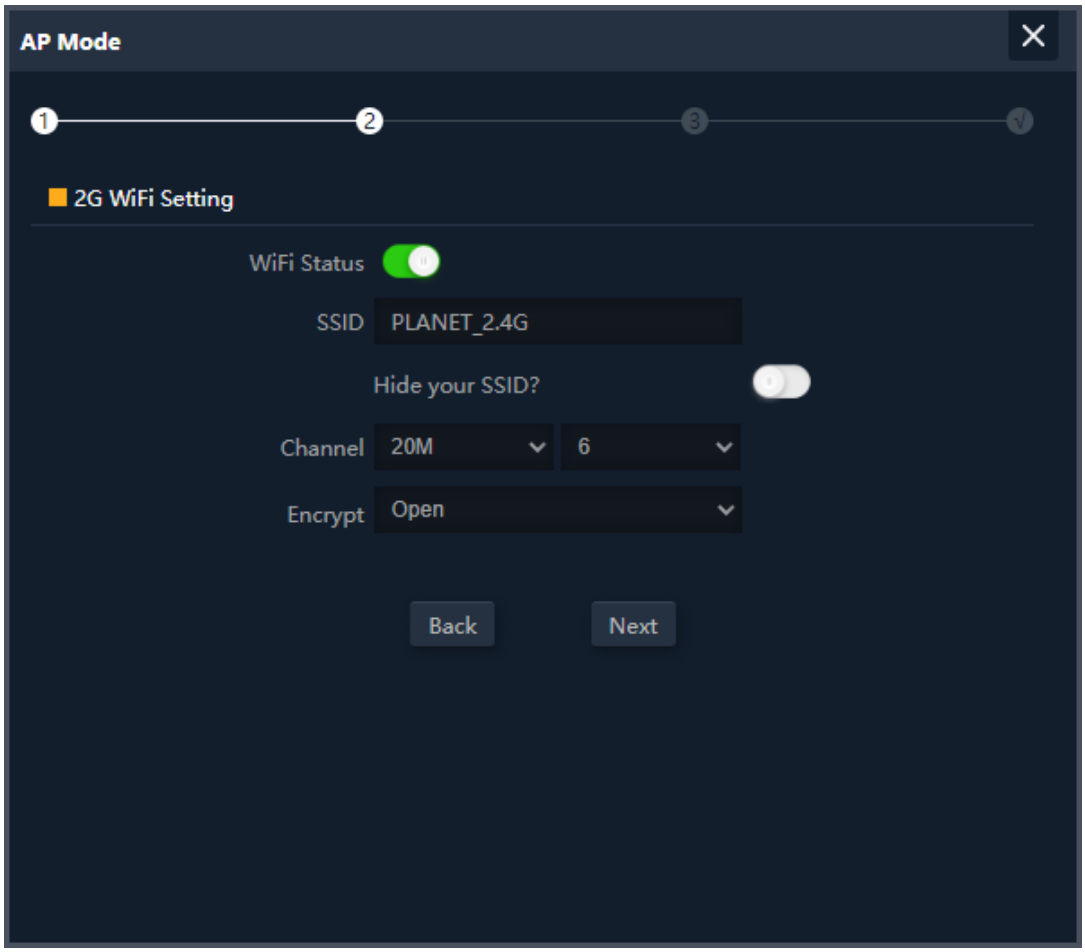


Figure 5-27AP Mode

The page includes the following fields:

Object	Description
IP Mode	Select “**Static IP**” or “**DHCP Client**” for setting up device IP.
LAN IP	Enter the AP static IP address.
Subnet	Enter the network mask.
Gateway	Enter the default gateway IP address.
Primary DNS	Enter the primary DNS IP address, or not.
Secondary DNS	Enter the secondary DNS IP address, or not.

Enter the LAN IP address.



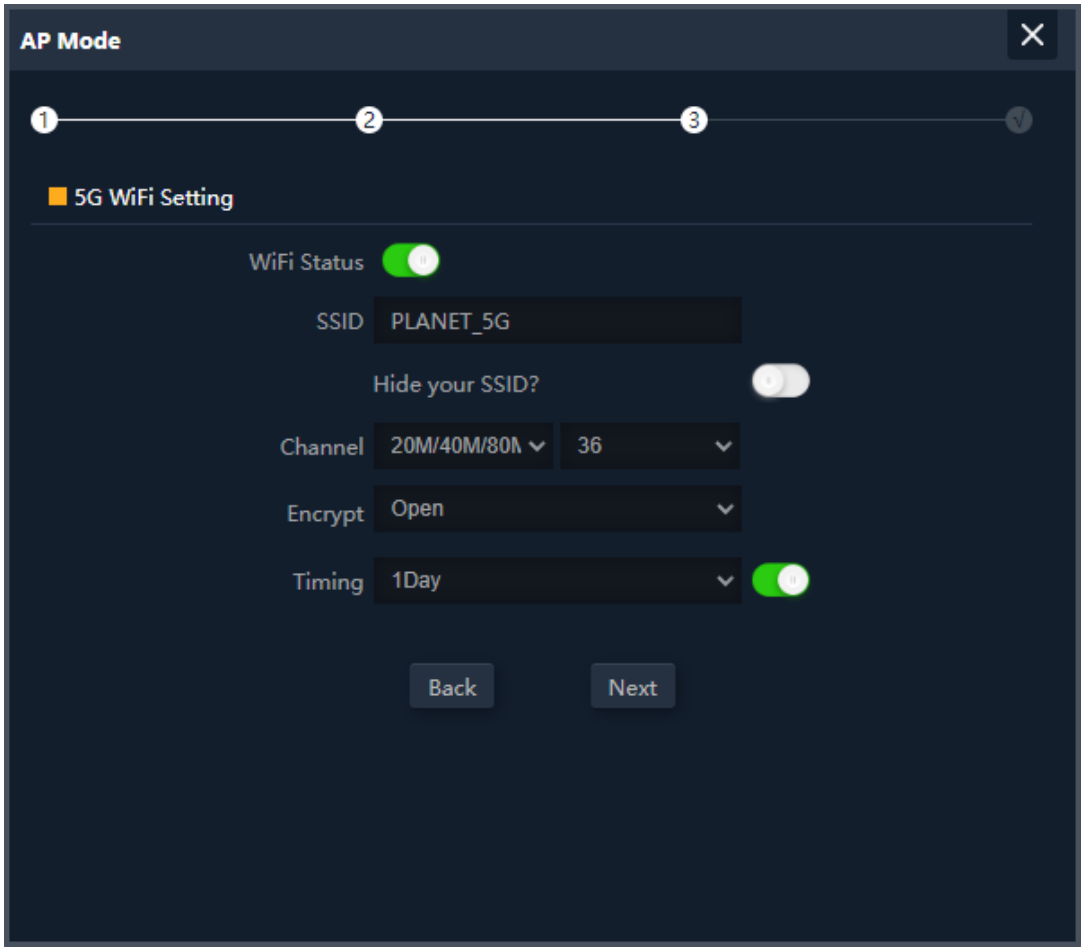


Figure 5-28 AP Mode – Set up Wi-Fi

The page includes the following fields:

Object	Description
Wi-Fi Status	Select **ON (Green)** or **OFF (Gray)** to enable or disable wireless LAN.
SSID	It is the wireless network name. The default SSID is "**PLANET_5G**".
Hide your SSID ?	Select **ON** (**Green**) or **OFF** (**Gray**) to hide wireless LAN or not.
Bandwidth	Select the operating channel width, "**20MHz**" or "**40MHz**" or "**80MHz**".
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**".
Timing	Set time to restart.

Wi-Fi

4.7.1 2.4G/5G Wi-Fi

4.7 4.7.1.1. Basic

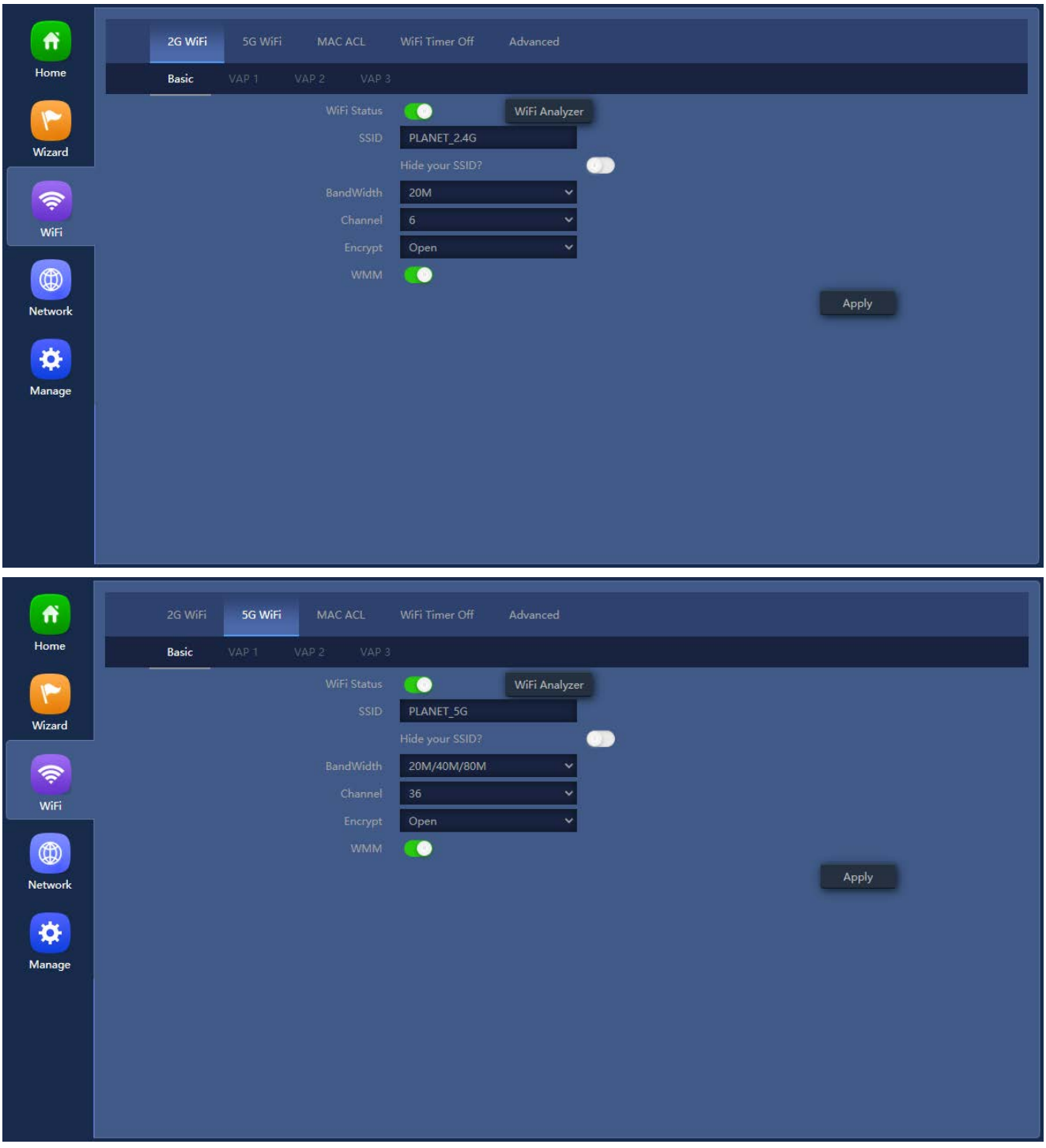


Figure 5-29 Basic

The page includes the following fields:

Object	Description
Wi-Fi Status	Select **ON (Green)** or **OFF (Gray)** to enable or disable wireless LAN.
SSID	It is the wireless network name. The default SSID is "**PLANET_2.4G**" or "**PLANET_5G**".
Hide your SSID ?	Select **ON** (**Green**) or **OFF** (**Gray**) to hide wireless LAN or not.
Channel	It shows the channel of the CPE. Default 2.4GHz is channel 6.and 5GHz is channel 36.
Encryption	Select the wireless encryption. The default is "**None**".
WMM	Enable/Disable WMM (Wi-Fi Multimedia) function.
Wi-Fi Analyzer	Press this button to analyze local area wireless signal.

4.7.1.2. VAP

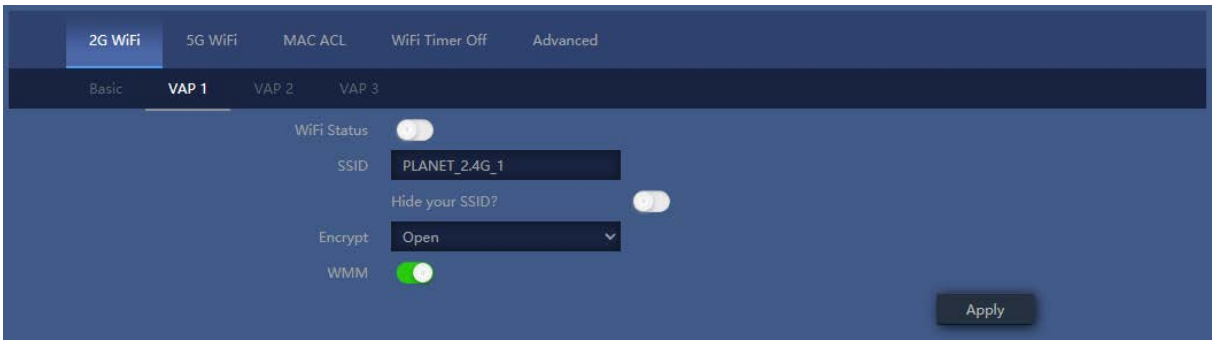


Figure 5-30 VAP

Select VAP1~VAP3 to enable virtual AP.

The page includes the following fields:

Object	Description
Wi-Fi Status	Select **ON (Green)** or **OFF (Gray)** to enable or disable virtual wireless LAN.
SSID	It is the wireless network name. The default 2.4G SSID is "**PLANET_2.4G_1**" to " **PLANET_2.4G_3**" and 5G SSID is "**PLANET_5G_1**" to "**PLANET_5G_3**".
Hide your SSID	Select **ON** (**Green**) or **OFF** (**Gray**) to hide wireless LAN or not.
Channel	It shows the channel of the CPE. Default 2.4GHz is channel 6.and 5GHz is channel 36.
Encryption	Select the wireless encryption. The default is "**None**".
WMM	Enable/Disable WMM (Wi-Fi Multimedia) function.

4.7.2 MAC ACL

4.7.2.1. MAC ACL

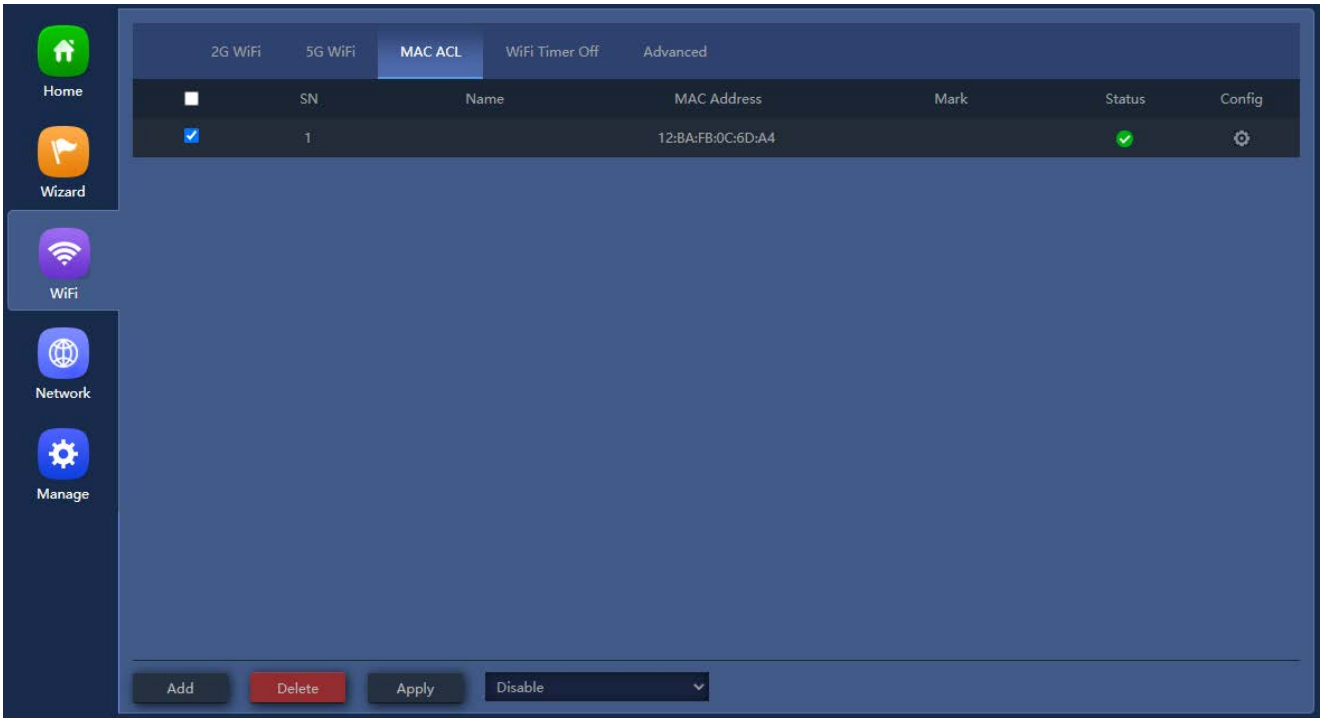


Figure 5-11 MAC ACL

The page includes the following fields:

Object	Description
Add	Press the "**Add**" button to add end-device that is scanned from wireless network and mark them.
Delete	Press the "**Delete**" button to delete device from list.
Apply	Press the "**Apply**" button to enable/disable the rule.
ACL Status	Select the rule of ACL, default is **Disable**. Whitelist: **Allows the devices to pass in the rule** Blacklist: **Prohibited rules within the device through**

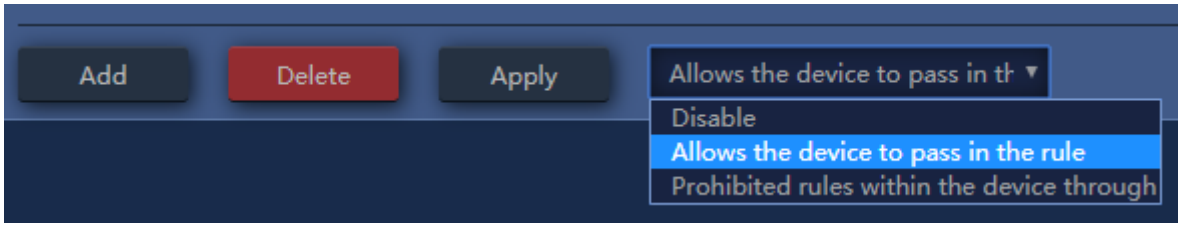


Figure 5-32 ACL status

4.7.3 Wi-Fi Timer Off

4.7.3.1. Wi-Fi Timer Off

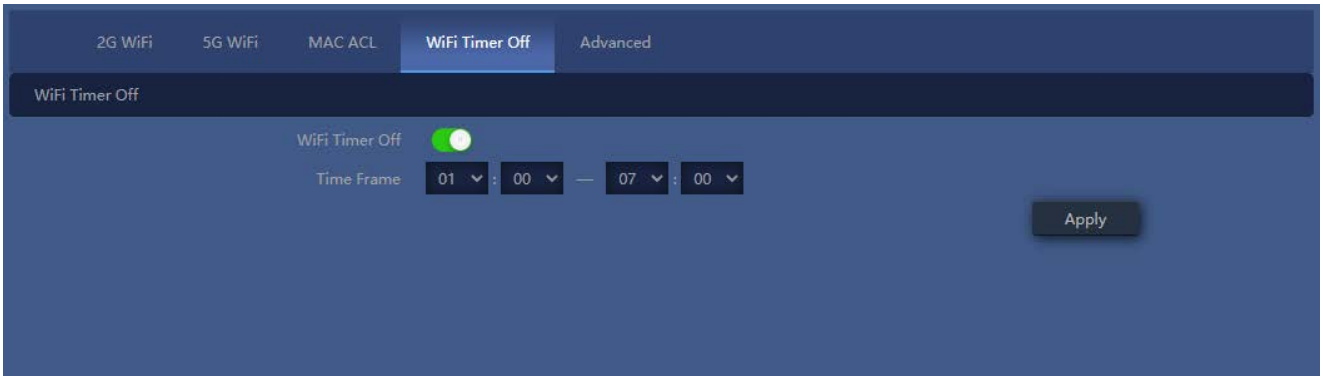


Figure 5-33 Wi-Fi Timer Off

The page includes the following fields:

Object	Description
Wi-Fi Timer Off	Select ON (**Green**) or OFF (**Gray**) to enable or disable timer.
Time Frame	Choose the time frame of Wi-Fi.

4.7.4 Advanced

4.7.4.1. Advanced

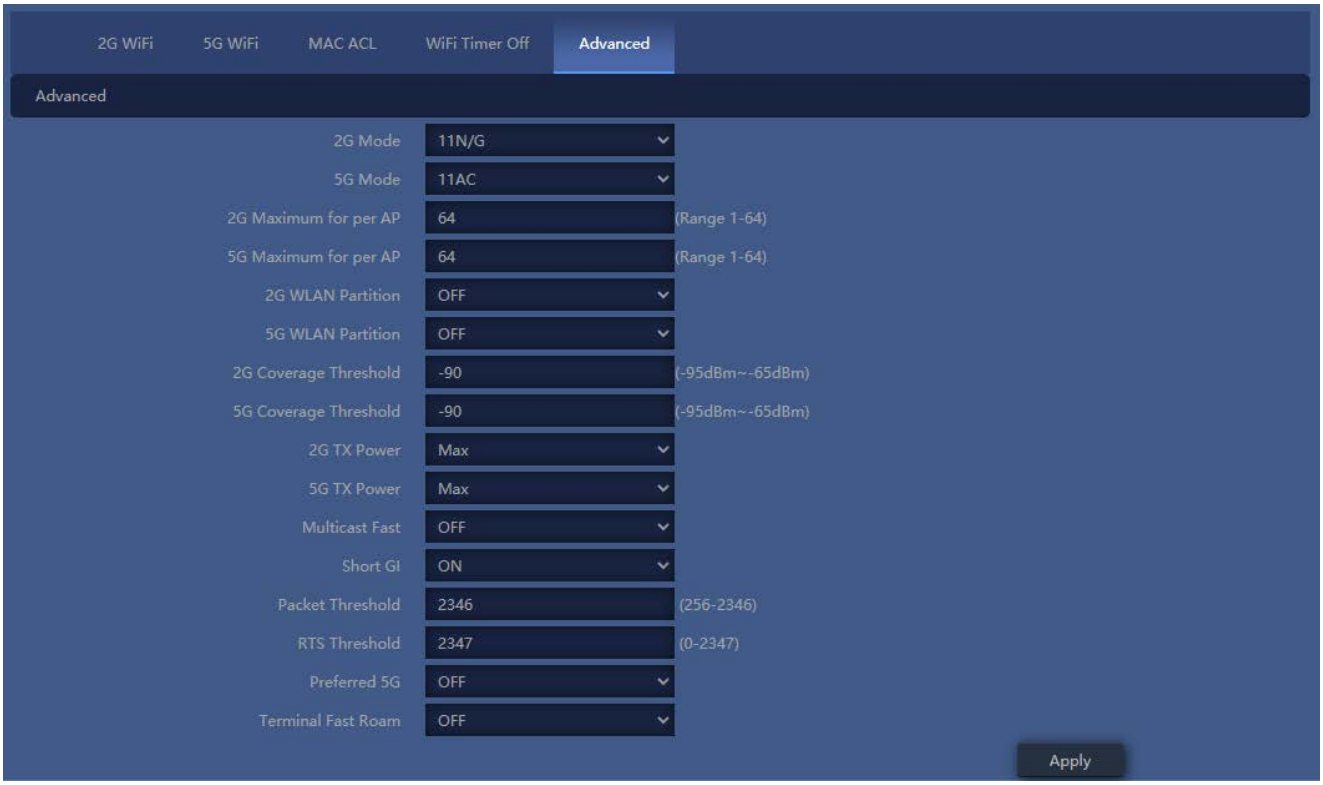


Figure 5-34 Advanced

The page includes the following fields:

Object	Description
2.4G Mode	Select **802.11B/G** or **802.11N/G** in CPE.
5G Mode	Select **802.11A** or **802.11AN** or **802.11AC** in CPE.
Maximum 2.4G per AP	The maximum users are **64.**
Maximum 5G per AP	The maximum users are **64.**
2.4G WLAN Partition	Enable it to isolate each connected wireless client so that they cannot access mutually.
5G WLAN Partition	Enable it to isolate each connected wireless client so that they cannot access mutually.
2.4G Coverage Threshold	The coverage threshold is to limit the weak signal of clients occupying session. The default is -90dBm.
5G Coverage Threshold	The coverage threshold is to limit the weak signal of clients occupying session. The default is -90dBm.
2.4G TX Power	The range of transmit power is **Max (100%)**, **Efficient (75%)**, **Enhanced (50%), Standard (25%)** or **Min (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.

5G TX Power	The range of transmit power is **Max (100%)**, **Efficient (75%)**, **Enhanced (50%), Standard (25%)** or **Min (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.
Multicast Fast	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.
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.**
RTS Threshold	Enable or Disable RTS/CTS protocol. It can be used in the following scenarios and used by Stations or Wireless AP. 1) When medium is too noisy or lots of interferences are present. If the AP/Station cannot get a chance to send a packet, the RTS/CTS mechanism can be initiated to get the packet sent. 2) In mixed mode, the hidden node problem can be avoided. The default value is **2347.**
Preferred 5G	Enable or Disable to let client connect with 5G first.
Terminal Fast Roam	Enable or Disable 802.11k, 802.11v and 802.11r.

4.7.5 Network

4.7.5.1. LAN Settings

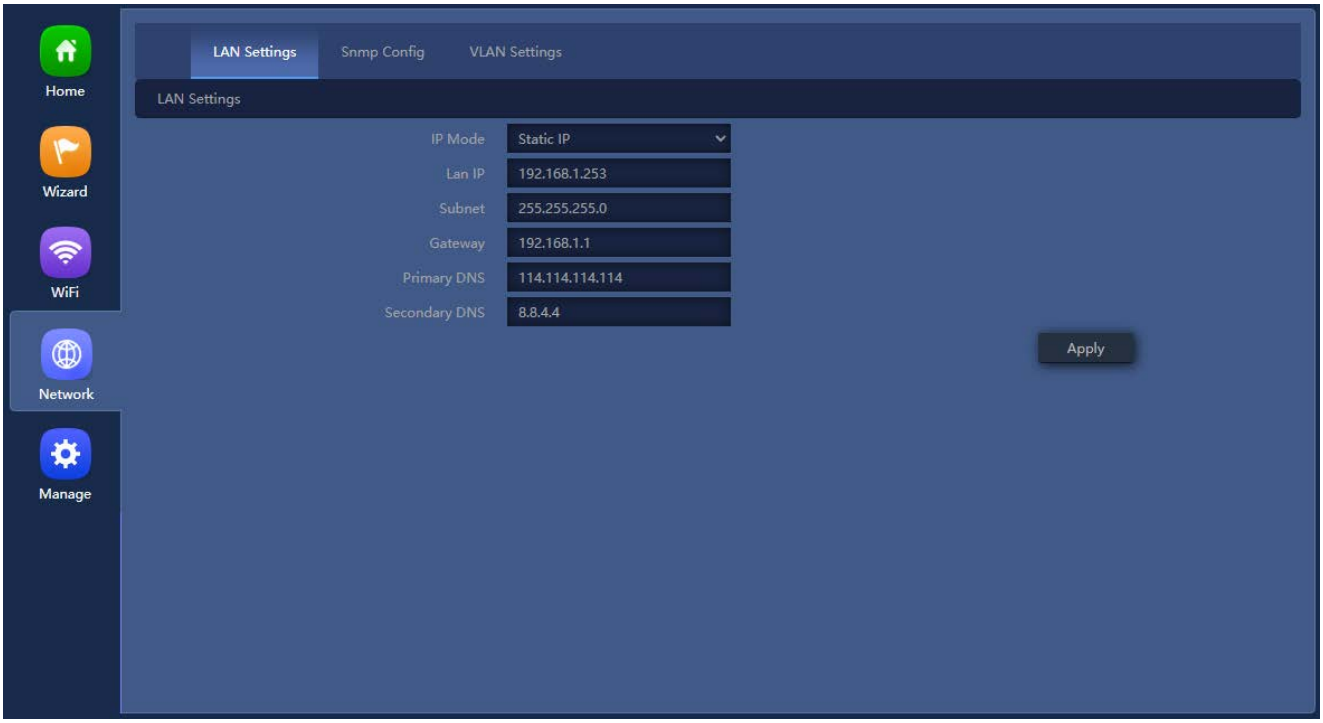


Figure 5-35 LAN Settings

The page includes the following fields:

Object	Description
IP Mode	Select "**Static IP**" or "**DHCP Client**" for setting up device IP.
LAN IP	Enter the AP static IP address.
Subnet	Enter the network mask.
Gateway	Enter the default gateway IP address.
Primary DNS	Enter the primary DNS IP address, or not.
Secondary DNS	Enter the secondary DNS IP address, or not.

4.7.5.2. SNMP Config

Figure 5-12 SNMP Config

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 **192.168.1.100.**

4.7.5.3. VLAN Settings

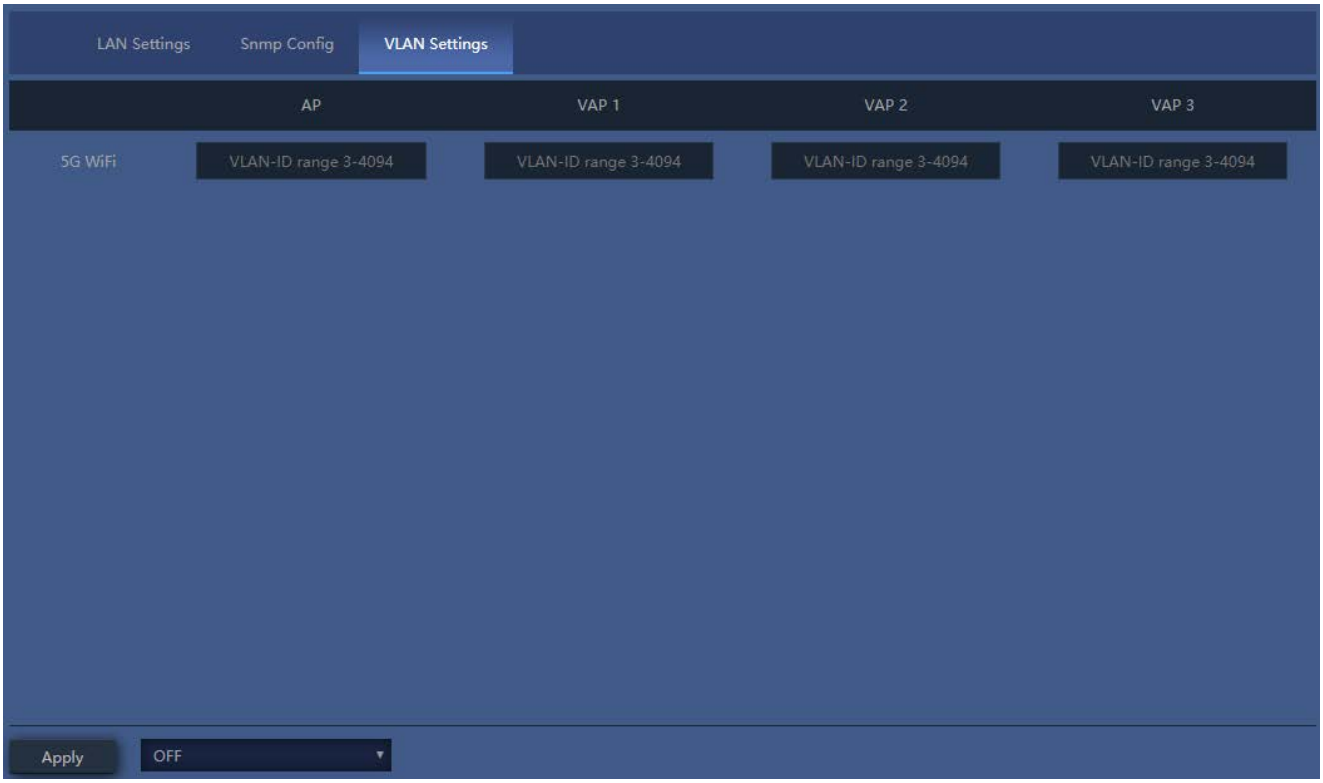


Figure 5-37 VLAN Settings

The page includes the following fields:

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

4.7.5.4. 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.

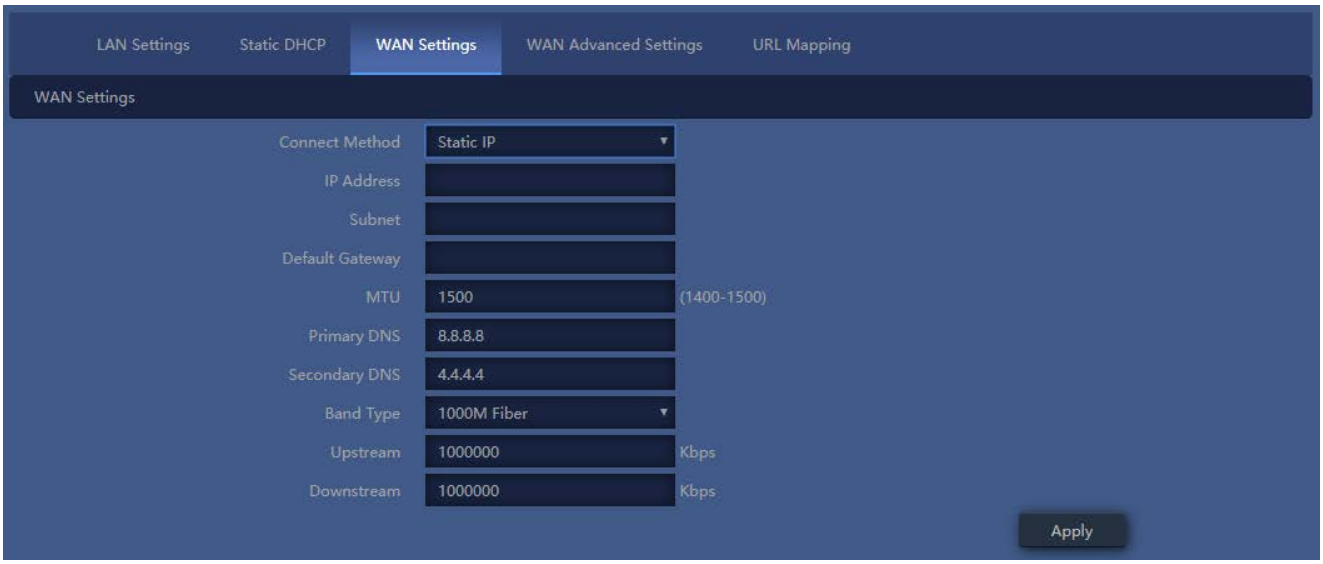


Figure 5-38 Static IP

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	Enter WAN Subnet Mask provided by your ISP.
Default Gateway	Enter the WAN Gateway address provided by your ISP.
MTU	Maximum Transmission Unit. Default is 1500.
Primary DNS	Enter the necessary DNS address provided by your ISP.
Secondary DNS	Enter the secondary DNS address provided by your ISP.
Upstream	Enter limited upstream throughput, default is **1000000** Kbps.
Downstream	Enter limited downstream throughput, default is **1000000** Kbps.

PPPoE (ADSL)

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

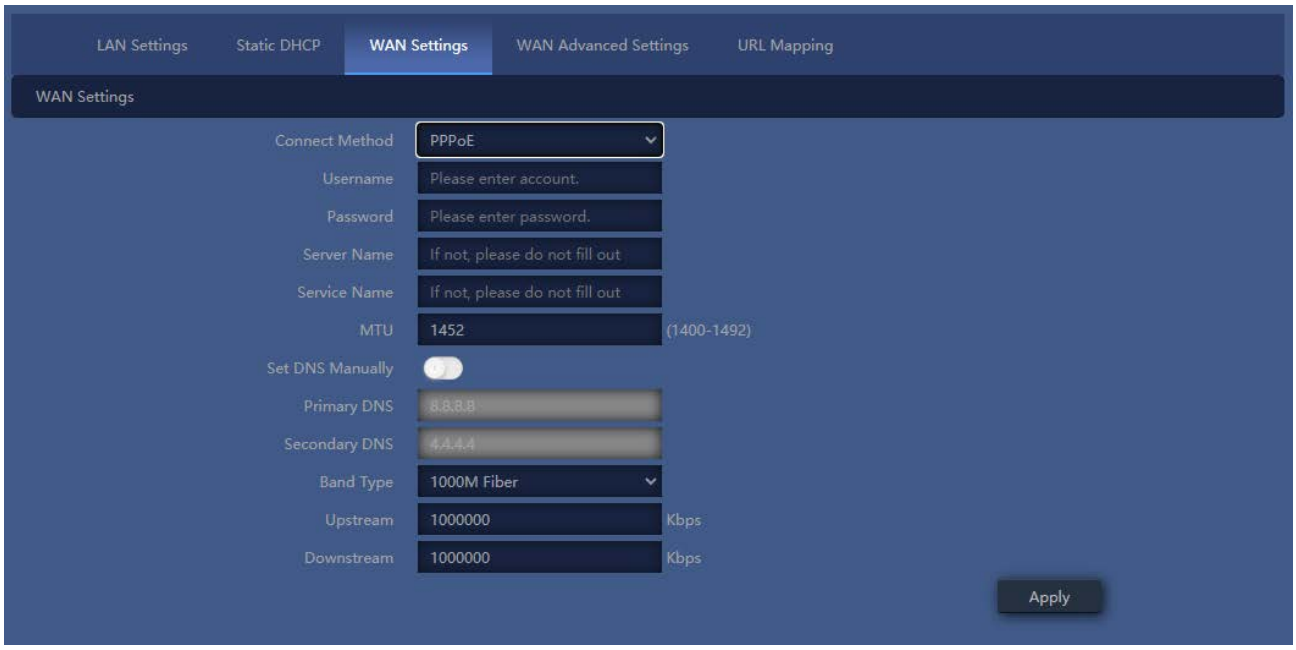


Figure 5-39 PPPoE (ADSL)

The page includes the following fields:

Object	Description
Username	Enter the PPPoE User Name provided by your ISP.
Password	Enter the PPPoE password provided by your ISP.
Server Name	Enter the server description or not.
Service Name	Enter the service description or not.
MTU	Maximum Transmission Unit. Default is 1452.
Set DNS Manually	Enable/Disable DNS Manually.
Primary DNS	Enter the necessary DNS address provided by your ISP.
Secondary DNS	Enter the secondary DNS address provided by your ISP.
Band Type	Select the band type provided by your ISP.
Upstream	Enter limited upstream throughput, default is **1000000** Kbps.
Downstream	Enter limited downstream throughput, default is **1000000** Kbps.

DHCP

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

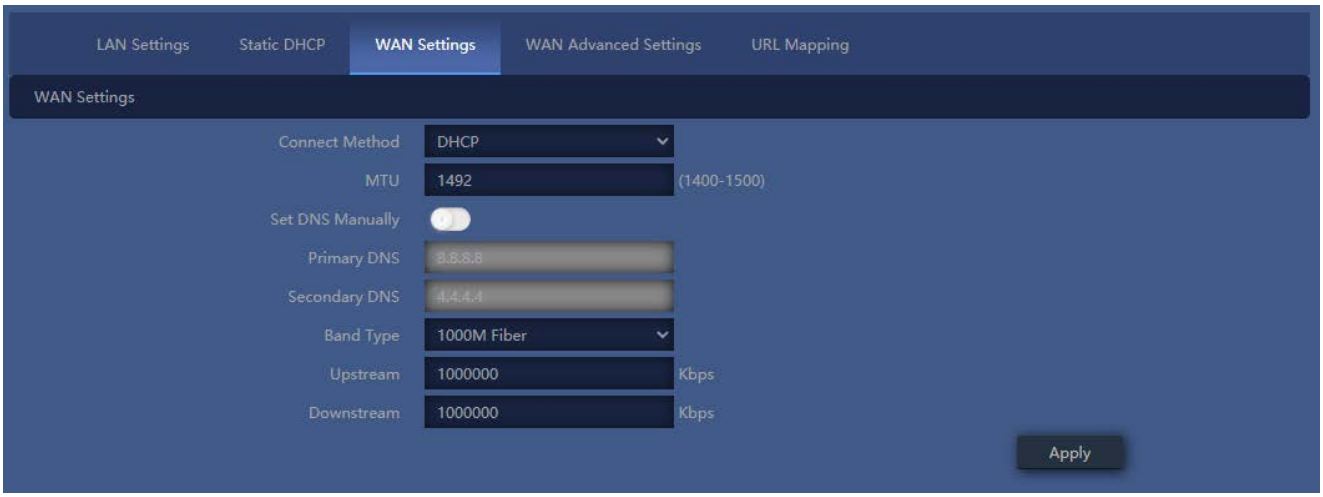


Figure 5-40 DHCP

The page includes the following fields:

Object	Description
MTU	Maximum Transmission Unit. Default is 1452.
Set DNS Manually	Enable/Disable DNS Manually.
Primary DNS	Enter the necessary DNS address provided by your ISP.
Secondary DNS	Enter the secondary DNS address provided by your ISP.
Band Type	Select the band type provided by your ISP.
Upstream	Enter limited upstream throughput, default is **1000000** Kbps.
Downstream	Enter limited downstream throughput, default is **1000000** Kbps.

4.7.5.5. WAN advanced settings

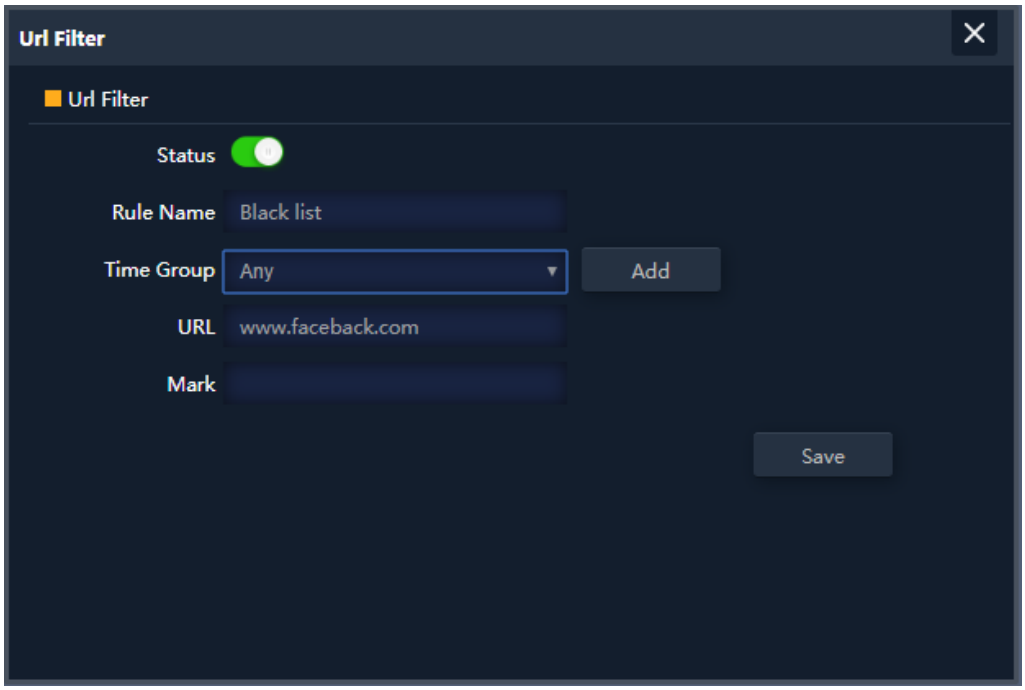
Figure 5-13 WAN advanced settings

The page includes the following fields:

Object	Description
Enable web server access on WAN port	Enable to access from WAN, default port is 8080
MAC clone	Enable and scan to clone the MAC address
Enable Ping Access on WAN	Enable or Disable this function
Enable IPsec passthrough on VPN connection	Enable or disable IPSec to pass through IPSec communication data.
Enable PPTP passthrough on VPN connection	Enable or disable PPTP to pass through PPTP communication data.
Enable L2TP passthrough on VPN connection	Enable or disable L2TP to pass through L2TP communication data.
Line Detection	Enable to ping Host 1 and Host 2 IP. If ping fails, the WAN will be disconnected.

4.7.6 Security

4.7.6.1. URL Filtering



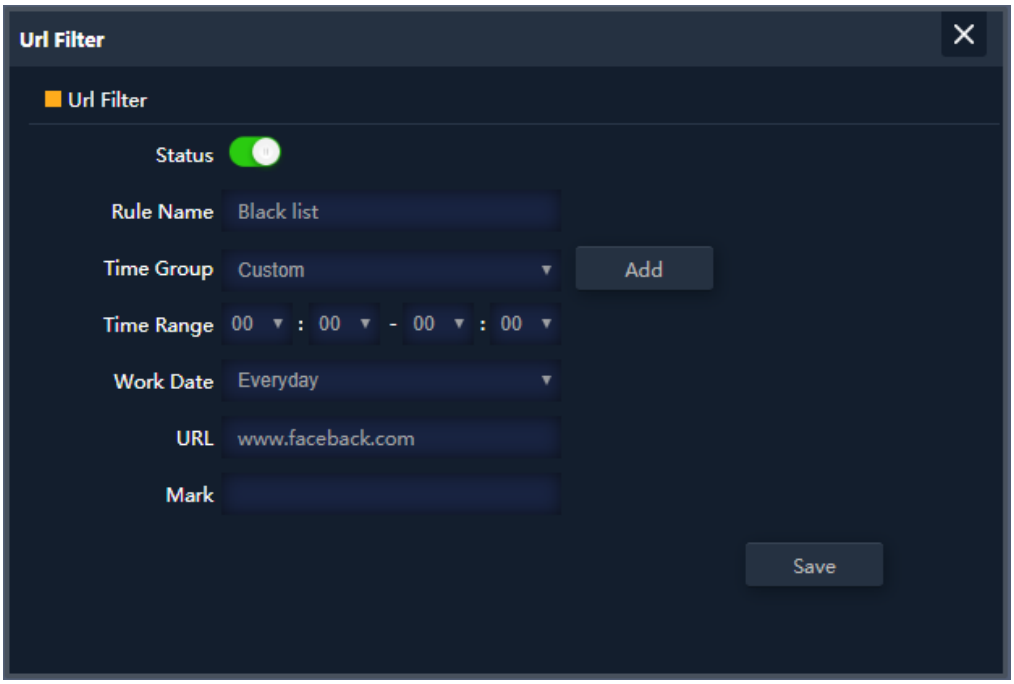


Figure 5-24 URL Filtering

The page includes the following fields:

Object	Description
Add	Press the "**Add**" button to add the rule
Delete	Press the "**Delete**" button to delete the rule
Apply	Press the "**Apply**" button to enable/disable the rule
Status	Select **ON (Green)** or **OFF (Gray)** to enable or disable
Rule Name	Enter the rule name, e.g. Black list
Time Group	Select **Any** or **Customer** to set up time range and work data.
URL	Enter the URL that you need to put in black list
Mark	Enter the mark string, or not

Enable/disable URL filter function

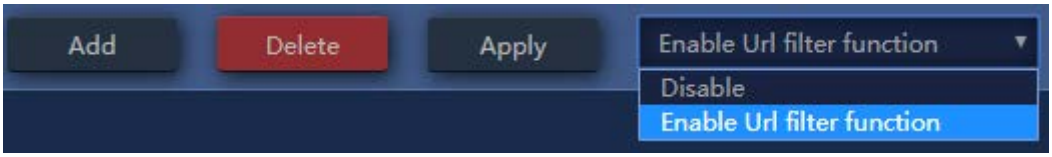


Figure 5-43 URL Filtering

4.7.6.2. IP/Port Filtering

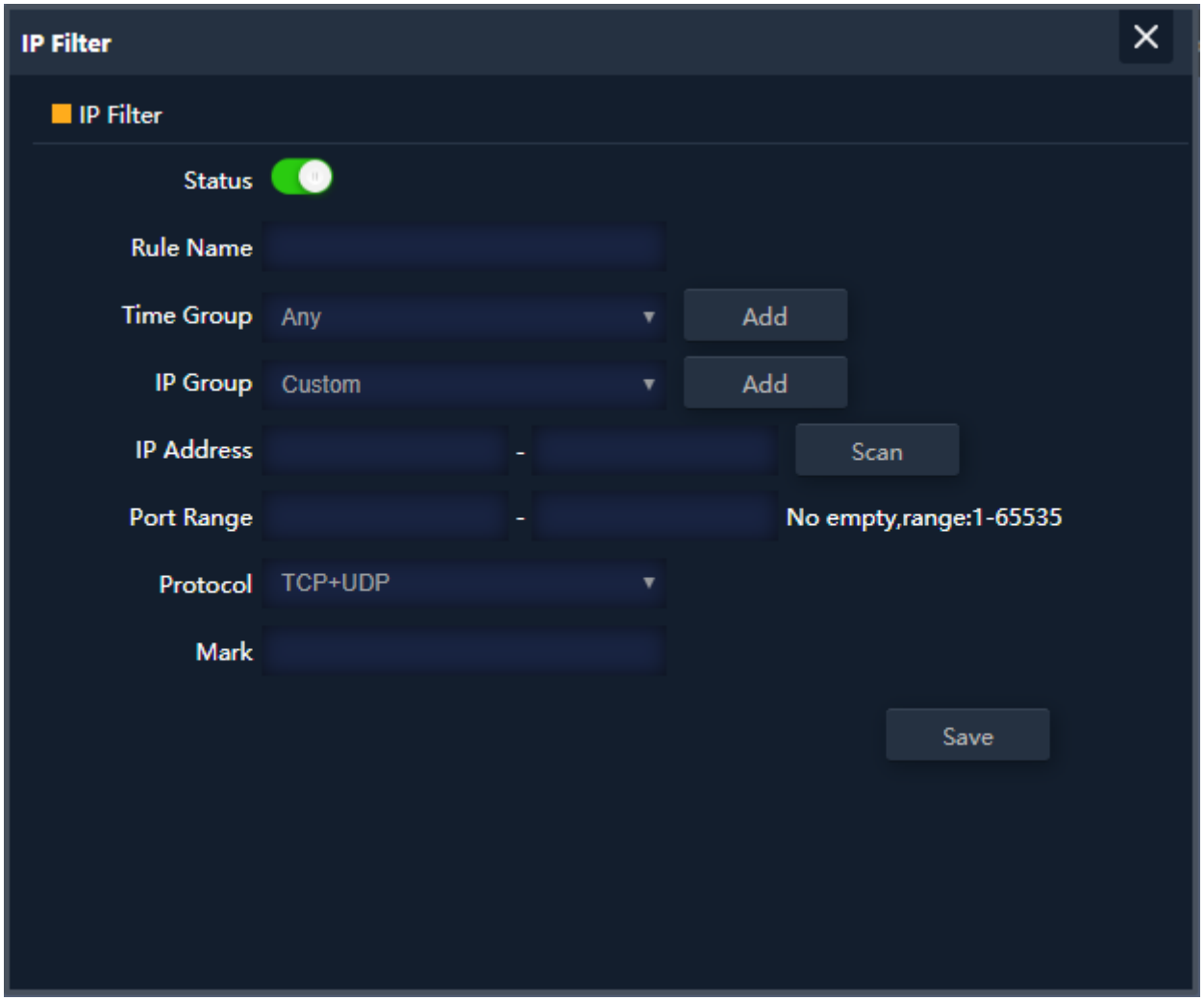


Figure 5-44 IP/Port Filtering

The page includes the following fields:

Object	Description
Add	Press the "**Add**" button to add the rule in the black or white list
Delete	Press the "**Delete**" button to delete the rule
Apply	Press the "**Apply**" button to enable/disable the rule
Status	Select **ON (Green)** or **OFF (Gray)** to enable or disable
Rule Name	Enter the rule name, e.g. Black list
Time Group	Select **Any** or **Customer** to set up time range and work data.
IP Group	Select IP Group for adding IP by entering IP range or by scanning devices
IP Address	Enter the IP that you need to put in black or white list

Port Range	Enter the web port to access
Protocol	Select **TCP**, **UDP** or **TCP+UDP**
Mark	Enter the mark string, or not
IP/Port Filtering Status	Select the rule of IP/Port Filtering, default is **Disable**. Whitelist: **Allow the devices to pass in the rule** Blacklist: **Prohibited rules within the device through**

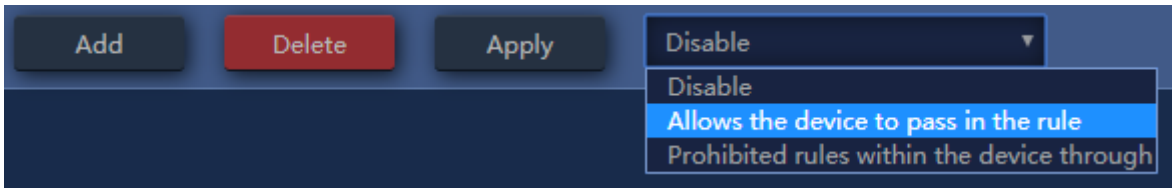
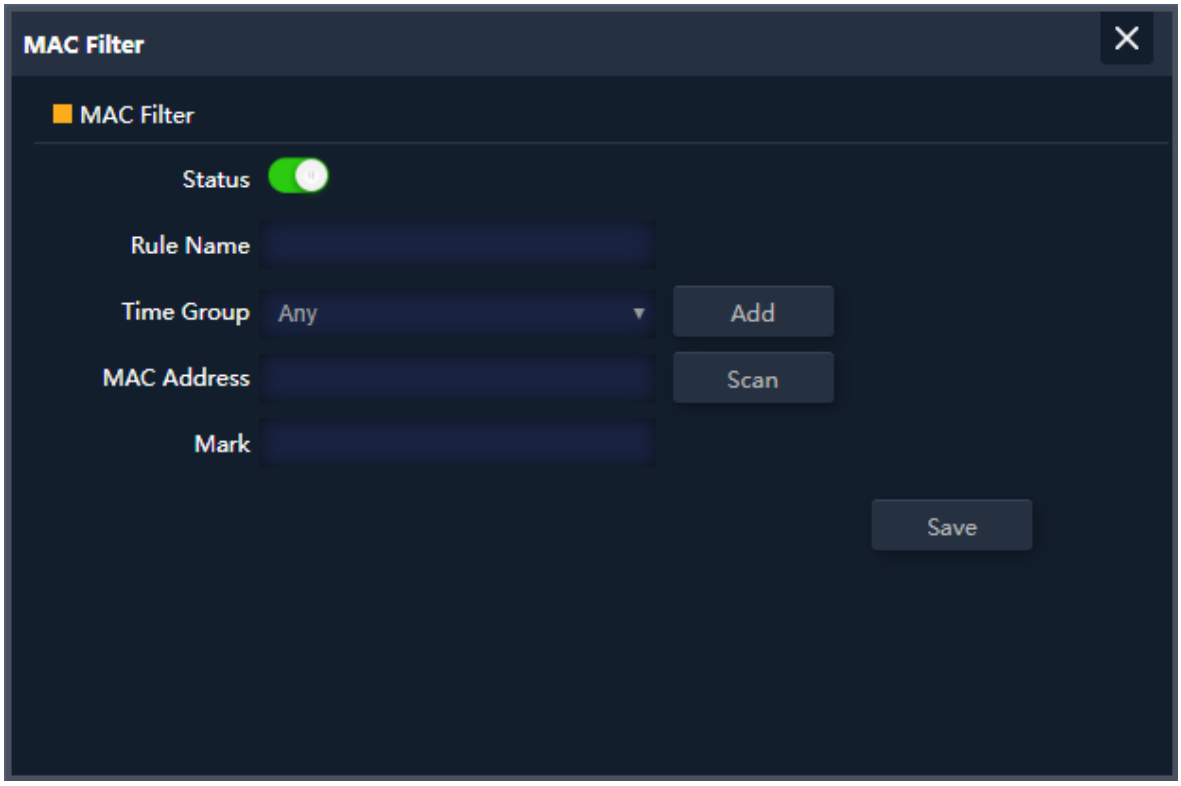


Figure 5-45 IP/Port Filtering

4.7.6.3. MAC Filtering



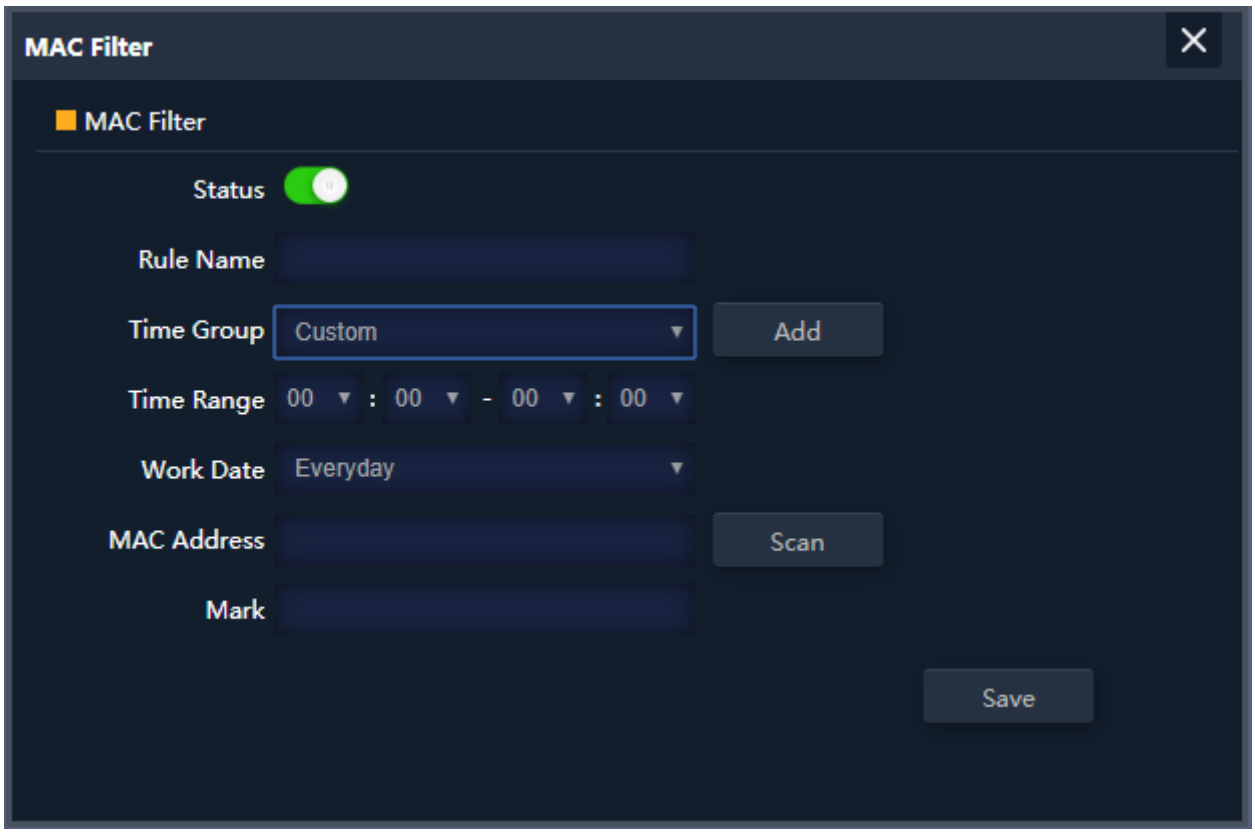


Figure 5-46 MAC Filtering

The page includes the following fields:

Object	Description
Add	Press the "**Add**" button to add the rule in the black or white list
Delete	Press the "**Delete**" button to delete the rule
Apply	Press the "**Apply**" button to enable/disable the rule
Status	Select **ON (Green)** or **OFF (Gray)** to enable or disable
Rule Name	Enter the rule name, e.g. Black list
Time Group	Select **Any** or **Customer** to set up time range and work data.
MAC Address	Enter the MAC address that you need to put in black or white list
Mark	Enter the mark string, or not
MAC Filtering Status	Select the rule of MAC Filtering, default is **Disable**. Whitelist: **Allow the devices to pass in the rule** Blacklist: **Prohibited rules within the device through**

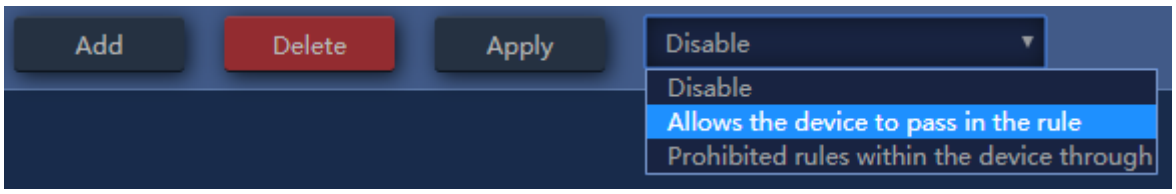


Figure 5-47 IP/Port Filtering

4.7.6.4. Security (Port Mapping/Port Forwarding)

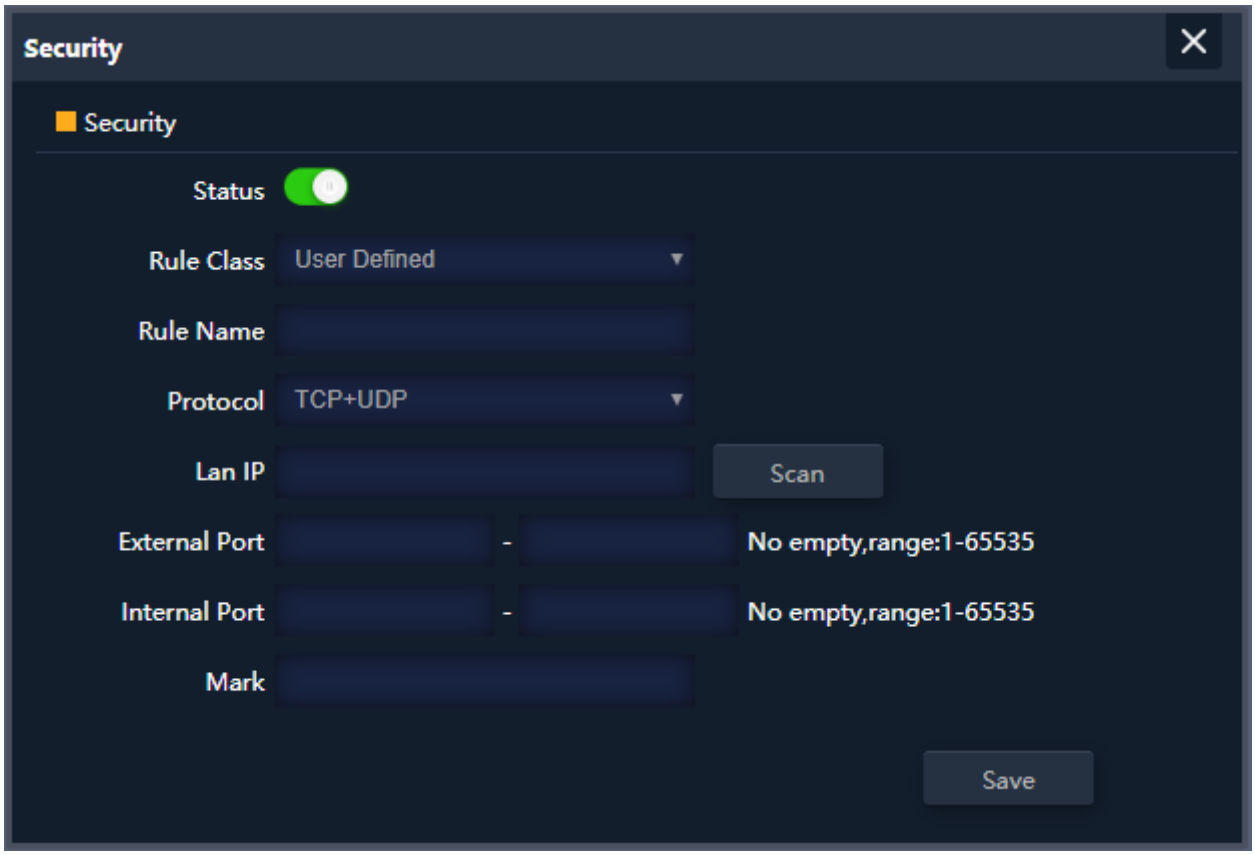


Figure 5-48 Port Mapping

The page includes the following fields:

Object	Description
Add	Press the "**Add**" button to add the rule in the black or white list
Delete	Press the "**Delete**" button to delete the rule
Apply	Press the "**Apply**" button to enable/disable the rule
Status	Select **ON (Green)** or **OFF (Gray)** to enable or disable
Rule Name	Enter the rule name, e.g. Black list
Protocol	Select **TCP**, **UDP** or **TCP+UDP**

LAN IP	Enter the IP address that you need for port forwarding
External Port	Enter the external port range
Internal Port	Enter the internal port range
Mark	Enter the mark string, or not

Enable/disable Port Mapping function

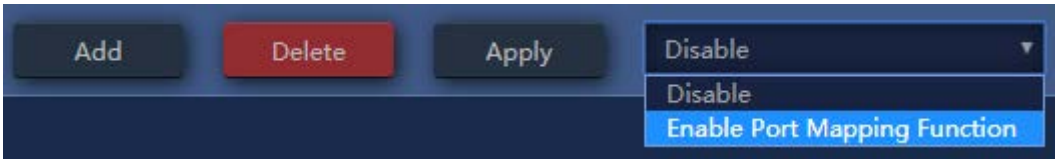


Figure 5-49 Port Mapping

4.7.6.5. DMZ

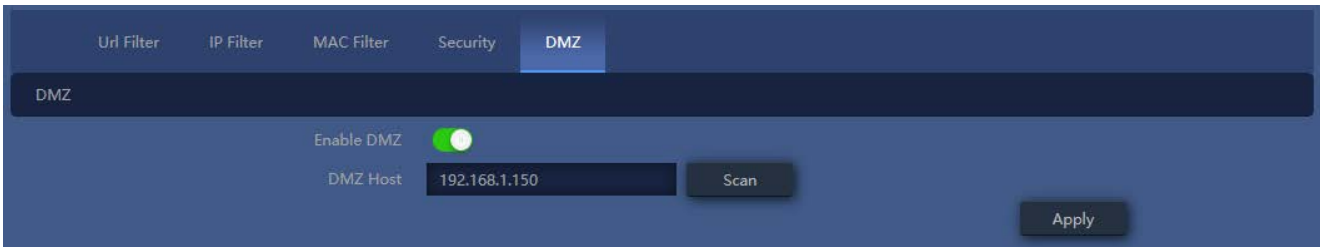


Figure 5-50 DMZ

The page includes the following fields:

Object	Description
Enable DMZ	Select **Enable DMZ Host** or **Disable**
DMZ Host IP	Enter the DMZ LAN IP

4.7.7 Management

4.7.7.1. Configure

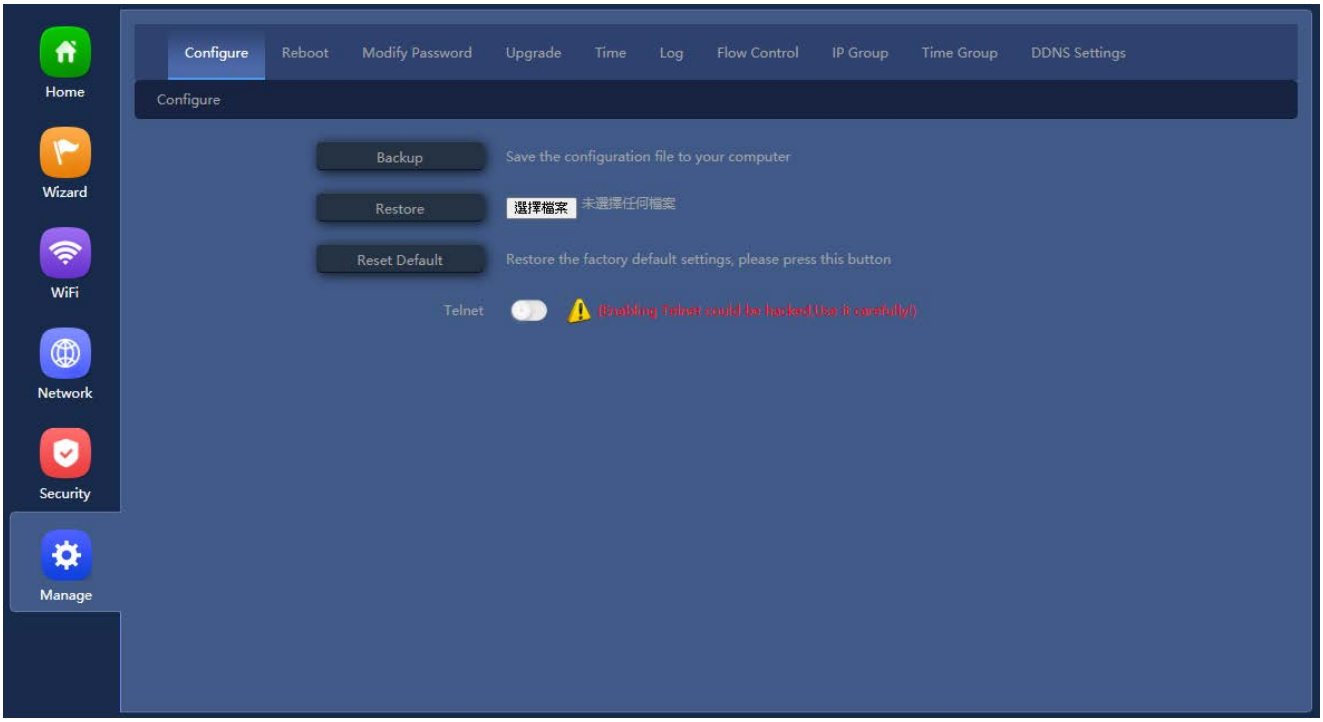


Figure 5-14 Configure

The page includes the following fields:

Object	Description
Backup	Save the configuration file to your computer
Restore	Reload the configuration from your computer
Reset Default	Restore the factory default settings, please press this button
Telnet	Enabling Telnet could be hacked, Use it carefully! (Only for support using, default is disable)

4.7.7.2. Reboot

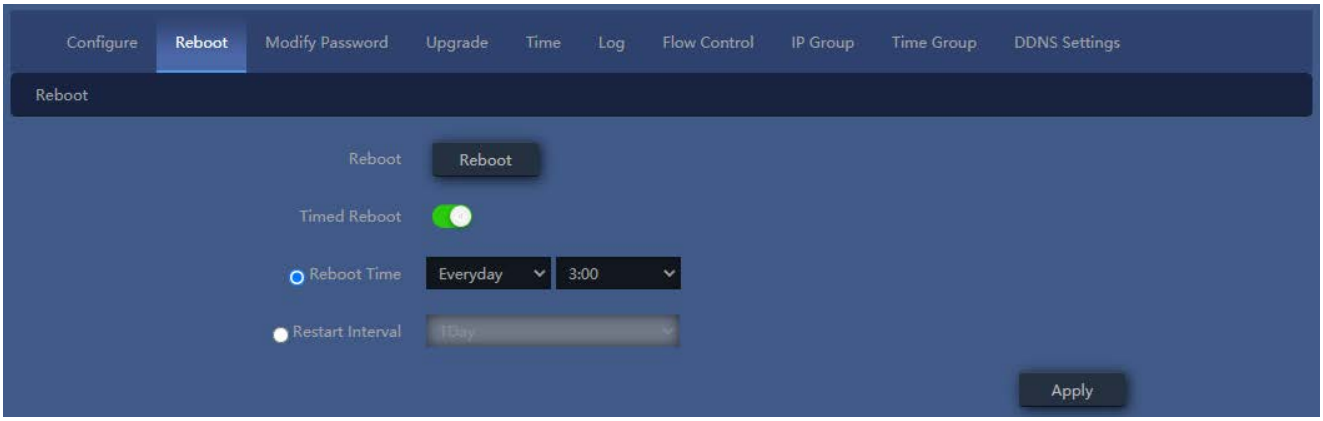


Figure 5-15 Reboot

The page includes the following fields:

Object	Description
Reboot	Reboot device immediately
Timed Reboot	Select Enable or Disable to start schedule reboot
Reboot Time	Select reboot time for clock
Restart Interval	Select reboot duty by day

4.7.7.3. Modify Password

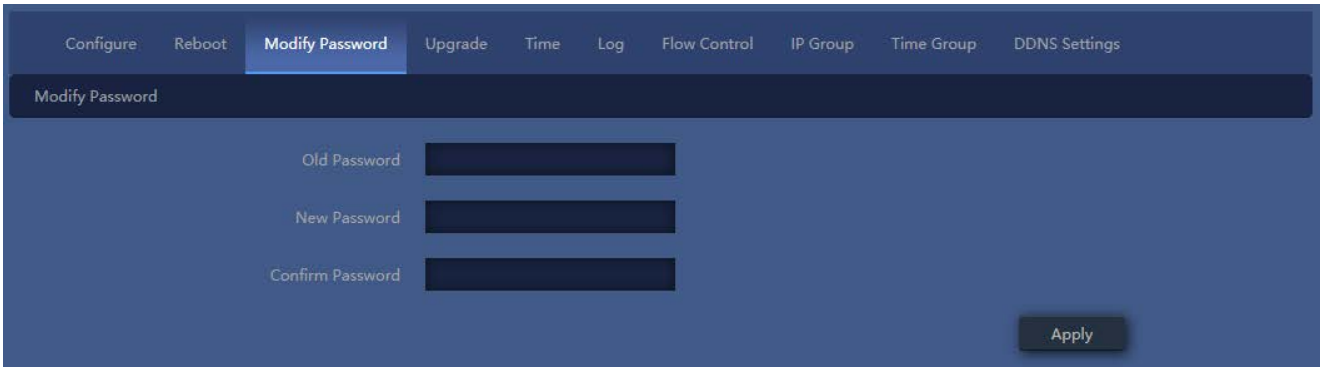


Figure 5-16 Modify password

The page includes the following fields:

Object	Description
Old Password	Enter old password for change the password
New Password	Enter new password

Confirm Password	Enter new password again

4.7.7.4. Upgrade

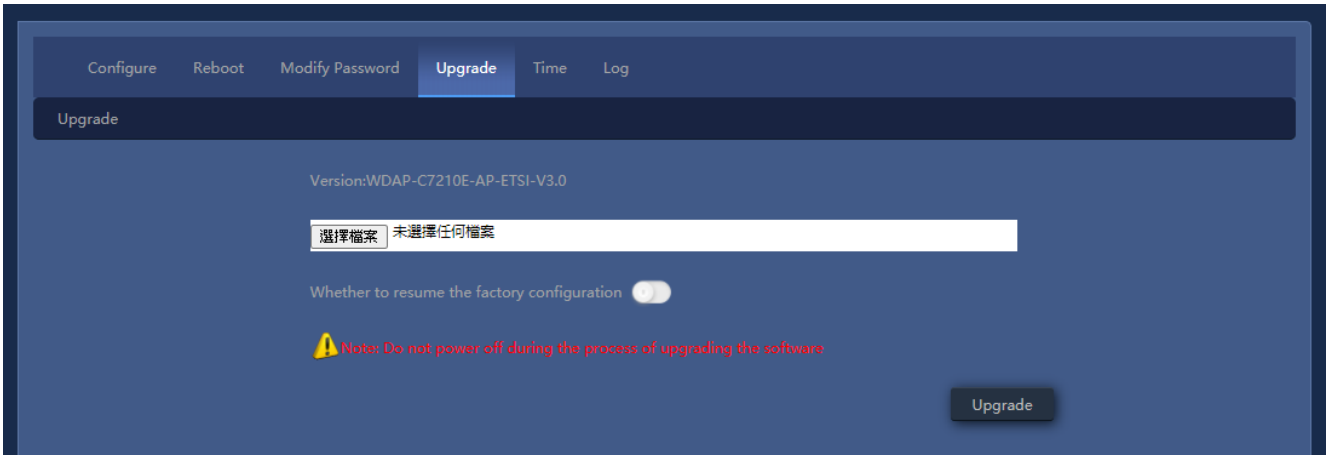


Figure 5-54 Upgrade Firmware

The page includes the following fields:

Object	Description
Choose File	Press to select the firmware file
Whether to resume the factory configuration	Select to reset the device to default when upgrading firmware
Upgrade	Press to upgrade the firmware

Note: Do not power off during the process of upgrading the software

4.7.7.5. Time

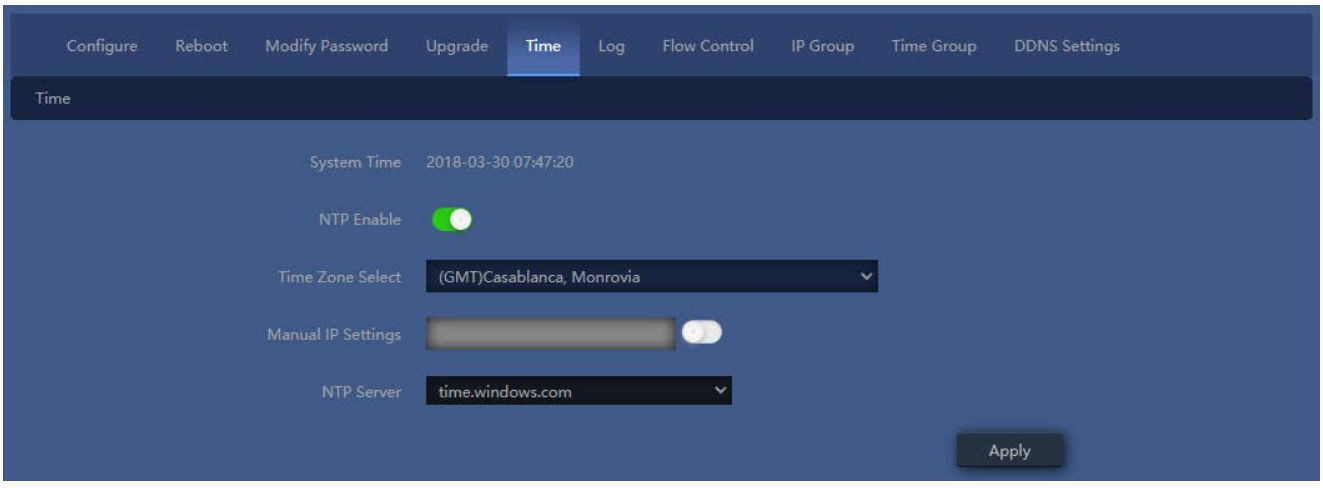


Figure 5-55 Setting System Time

The page includes the following fields:

Object	Description
System Time	Show system time of device
NTP Enable	Select Enable or Disable NTP function
Time Zone Select	Select time zone
Manual IP Settings	Enable to manual IP setting
NTP Server	Select NTP server
Sync with Host	Press to sync system time with host server

Note: If you want to use any function that needs scheduling, must enable NTP function.

4.7.7.6. Log

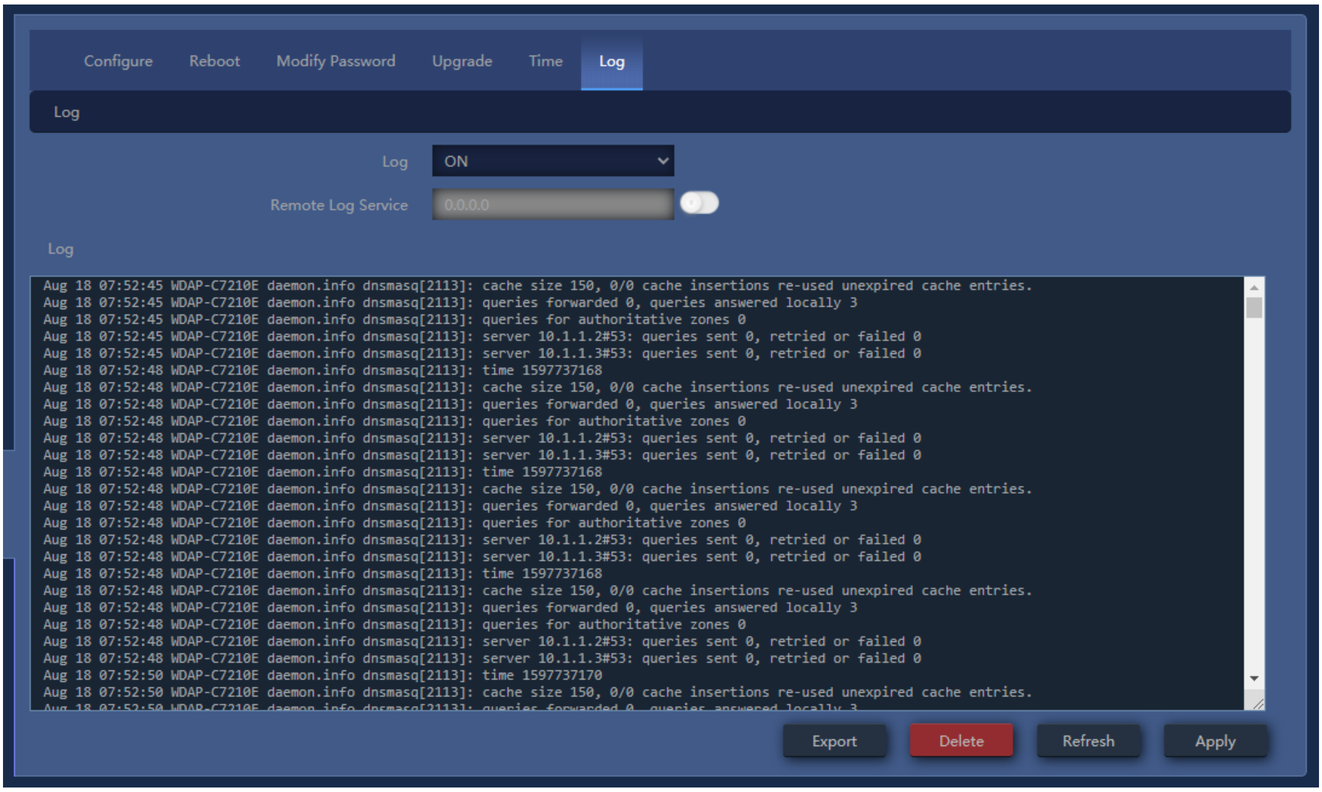


Figure 5-56 Setup System Time

The page includes the following fields:

Object	Description
Log	Select ON/OFF to record log or not
Remote Log Service	Enable remote log server and enter the server IP address

Export	Export a log.bin file to you PC
Delete	Press to delete all of the system log
Refresh	Press to refresh the system log

4.7.7.7. Flow Control

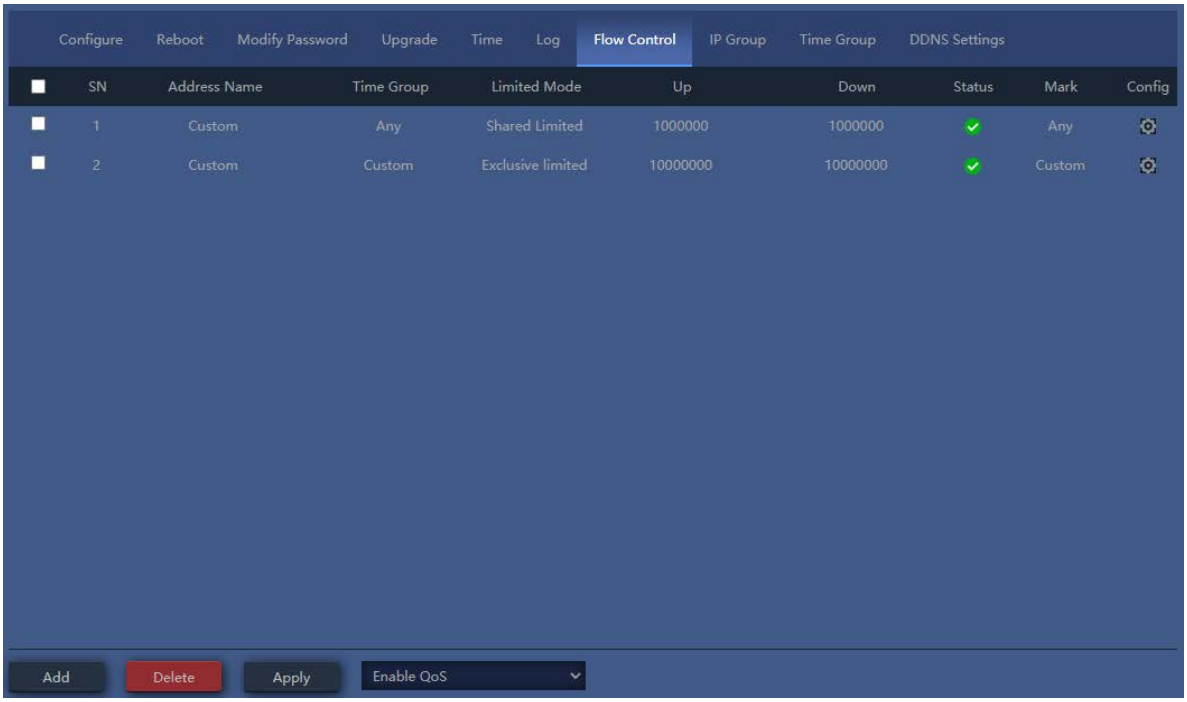


Figure 5-57 Setup Flow Control

The page includes the following fields:

Object	Description
Add	Press the "**Add**" button to add the rule in the control list
Delete	Press the "**Delete**" button to delete the rule
Apply	Press the "**Apply**" button to enable/disable the rule
Status	Select enable or disable QoS rule

Enable/disable Port Mapping function

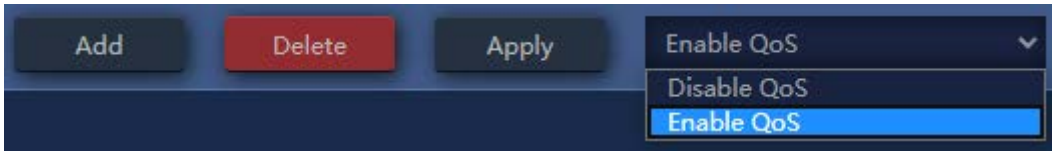


Figure 5-58 Enable or Disable QoS Rule

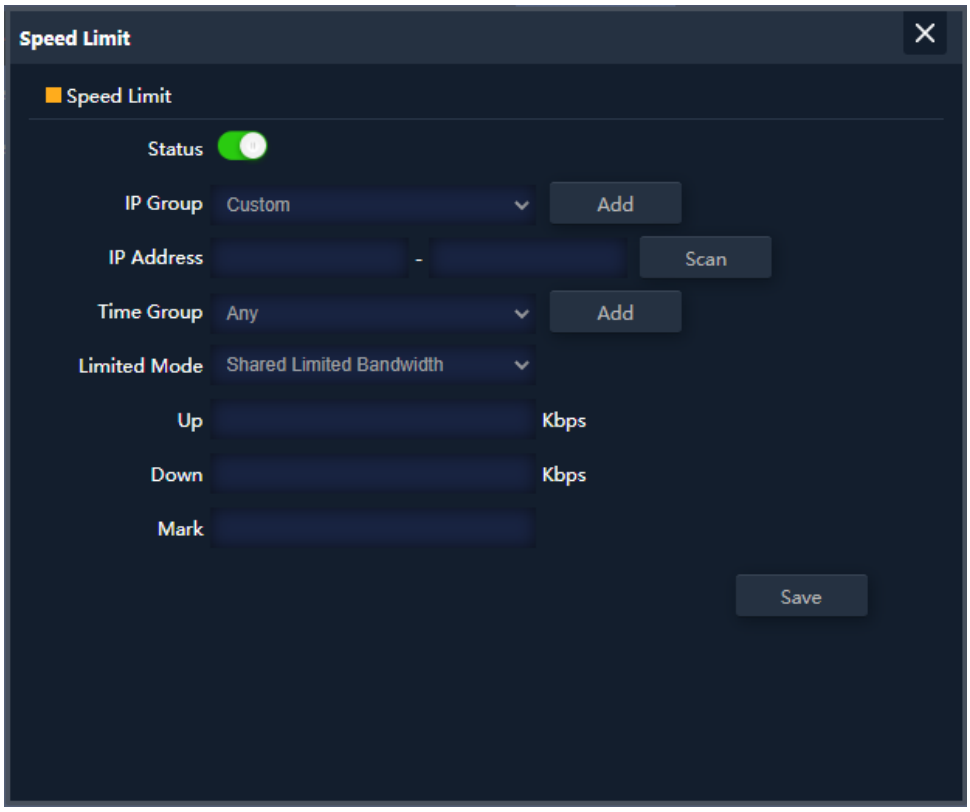


Figure 5-59 Adding rule of flow control(Speed Limit)

The page includes the following fields:

Object	Description
Status	Select enable or disable flow control rule
IP Group	Select custom or Add an IP group
IP Address	Enter an IP address range or use scan to select
Time Group	Select any or custom or Add a Time group
Limited Mode	Select limited mode for shared limited bandwidth or exclusive limited bandwidth
Up	Enter the upstream limited for kbps
Down	Enter the downstream limited for kbps
Mark	Enter the mark string, or not

4.7.7.8. IP Group

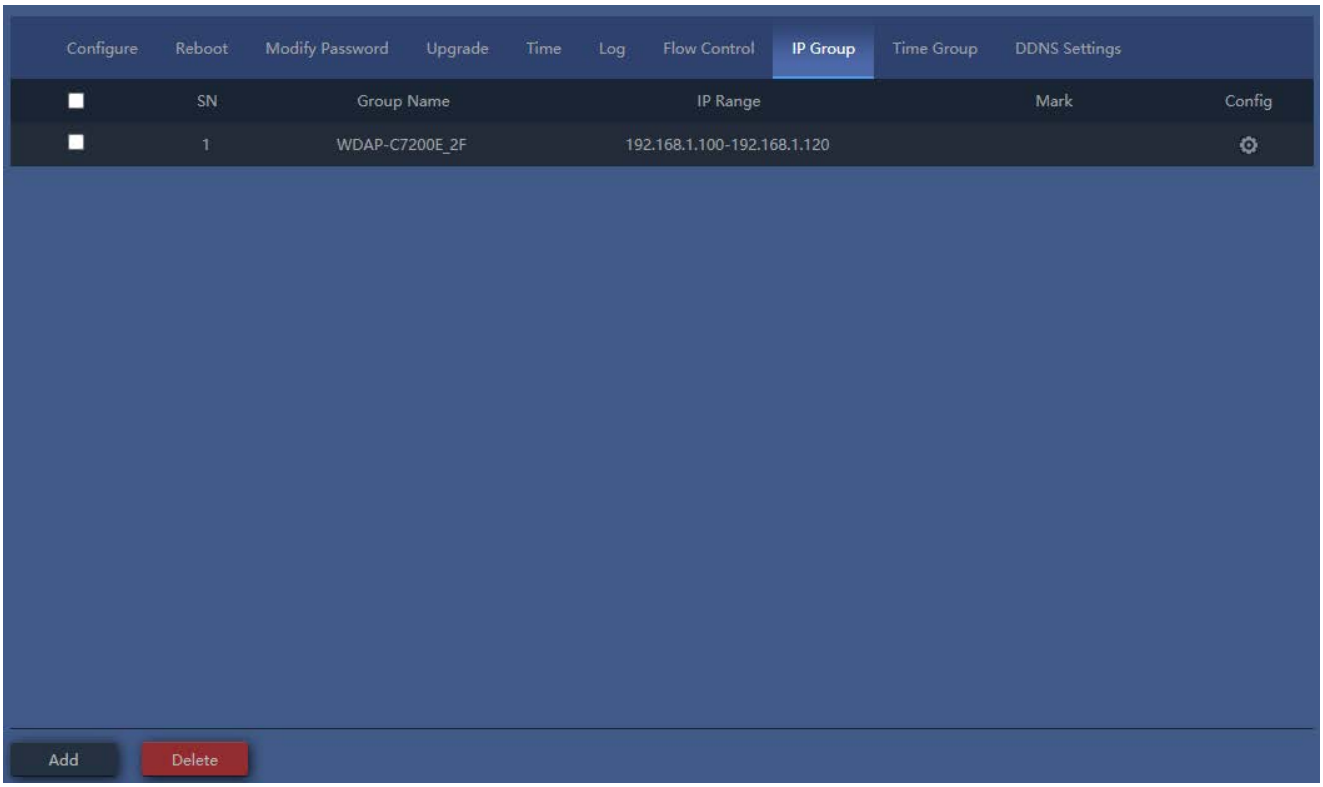


Figure 5-60 IP Group

The page includes the following fields:

Object	Description
Add	Press the "**Add**" button to add IP group in list
Delete	Press the "**Delete**" button to delete the group

Figure 5-17 Add IP Group

The page includes the following fields:

Object	Description
Group Name	Enter an IP group description
IP Address	Enter an IP address range or use scan to select
Mark	Enter the mark string, or not

4.7.7.9. Time Group

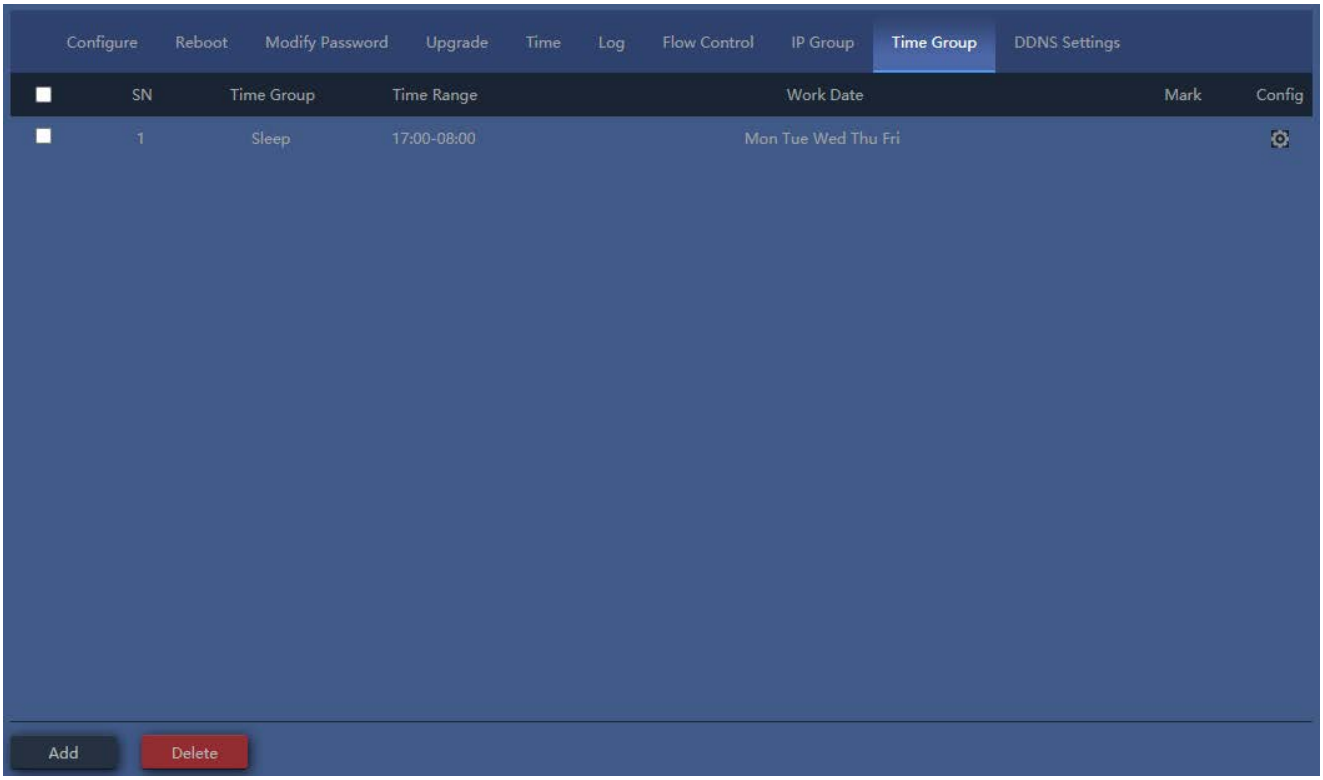


Figure 5-62 Time Group

The page includes the following fields:

Object	Description
Add	Press the "**Add**" button to add time group in list
Delete	Press the "**Delete**" button to delete the group

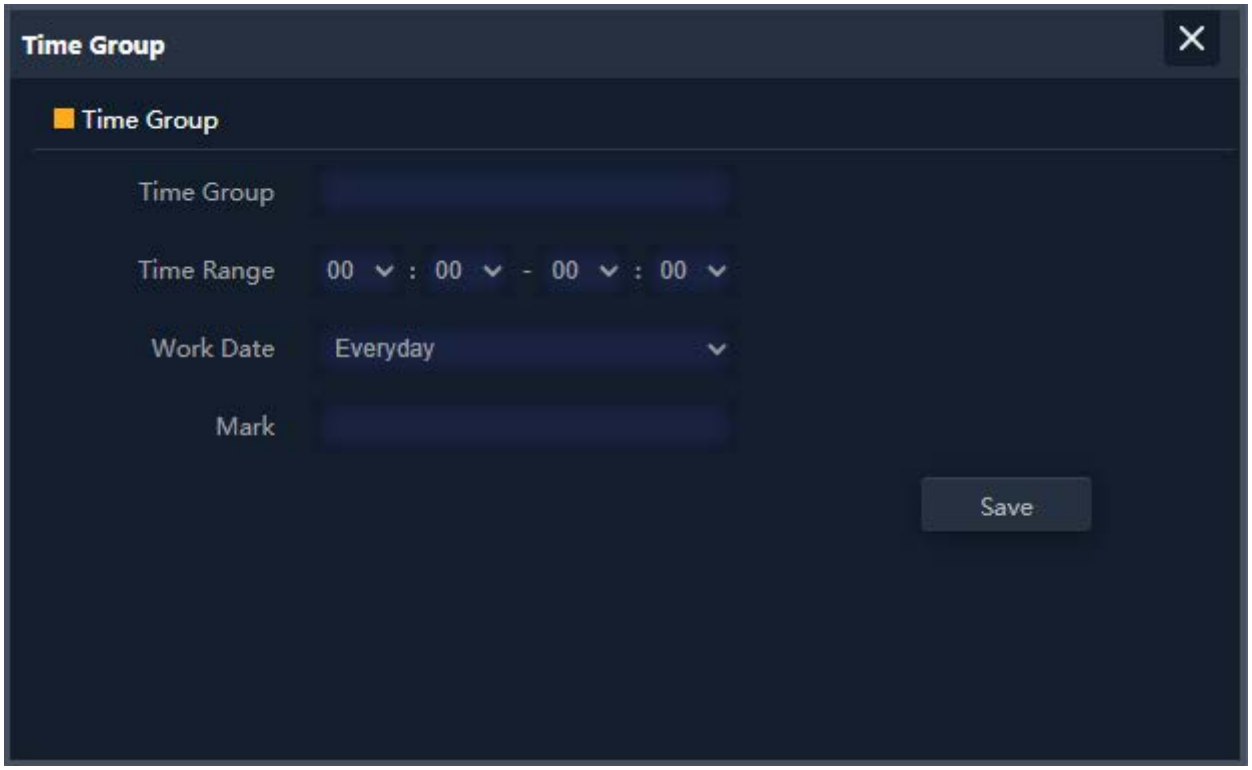


Figure 5-18 Add Time Group

The page includes the following fields:

Object	Description
Time Group	Enter an time group description
Time Range	Select start time and end time for time range
Work Date	Select work day by option table
Mark	Enter the mark string, or not

4.7.7.10. DDNS Setting

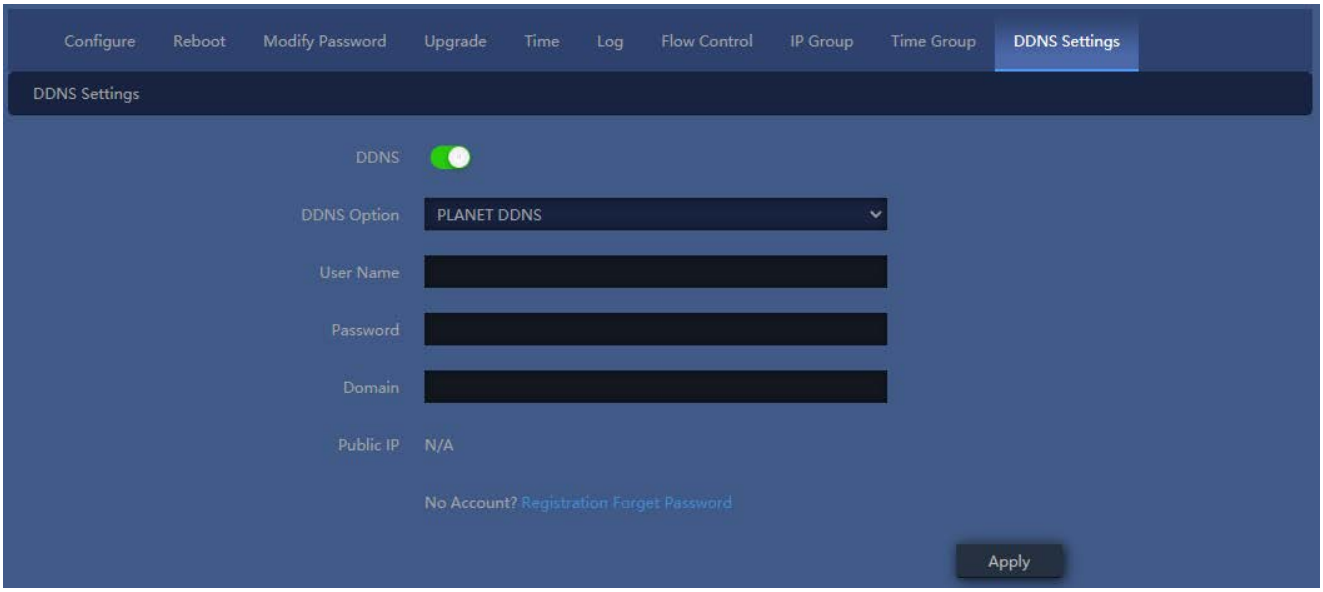


Figure 5-64 DDNS Setting

The page includes the following fields:

Object	Description
DDNS	Select **ON (Green)** or **OFF (Gray)** to enable or disable PLANET DDNS
DDNS Option	Select PLANET DDNS or Easy DDNS function
User Name	Enter user account for PLANET DDNS. If you use Easy DDNS it was not necessary.
Password	Enter password for PLANET DDNS. If you use Easy DDNS it was not necessary.
Domain	Enter unique domain name for device. If you use Easy DDNS it will be automatically generated
Public IP	Public IP address is necessary for WAN IP
No Account Registration Forget Password	Hyperlink to http://www.planetddns.com/?view=registration

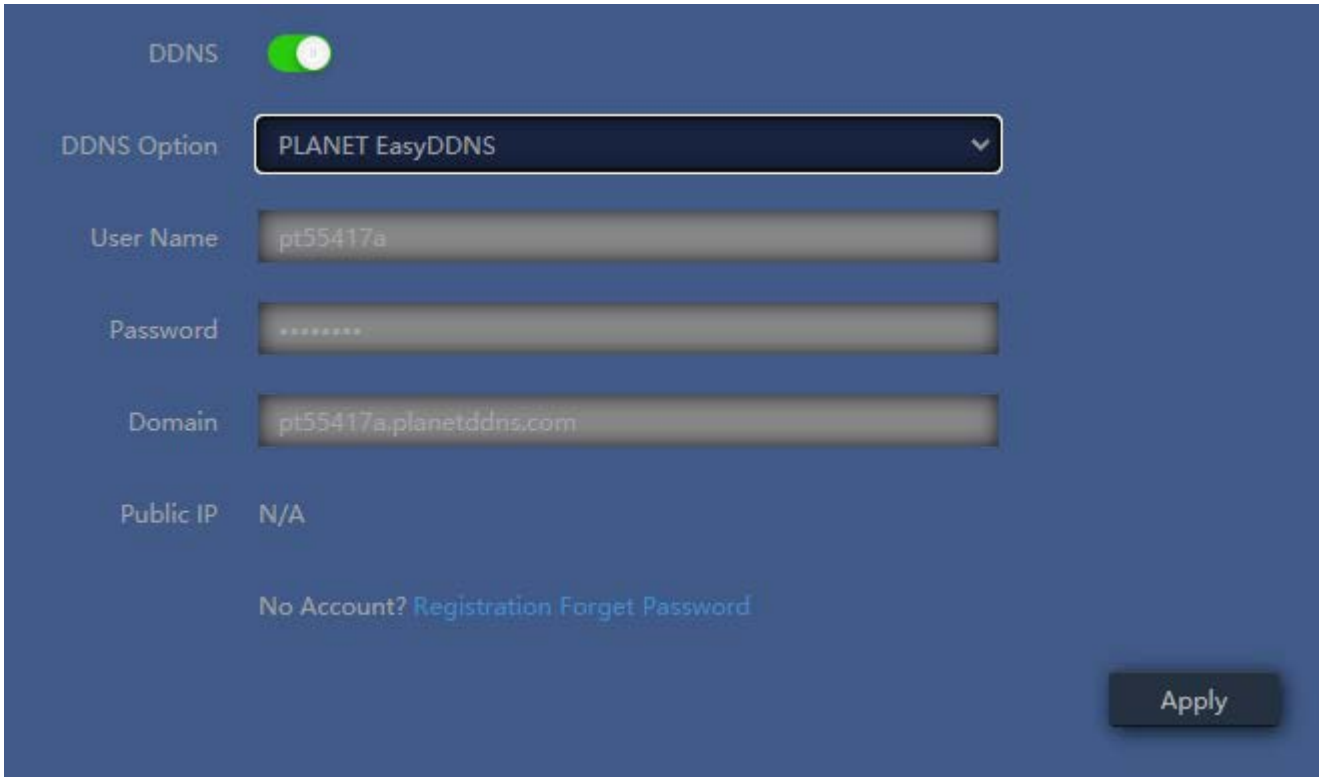


Figure 5-65 PLANET EasyDDNS

Chapter 5. Quick Connection to a Wireless Network

In the following sections, the **default SSID** of the WDAP series is configured to "**default**".

Windows XP (Wireless Zero Configuration)

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

5.1

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

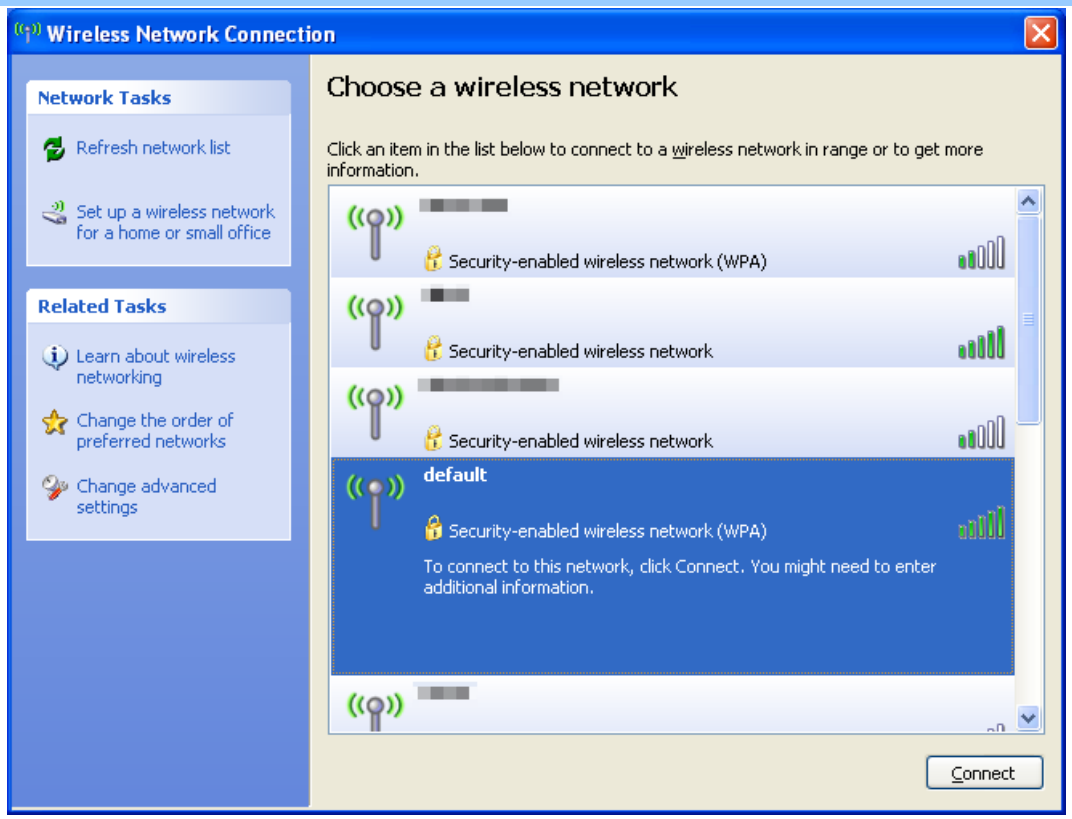


Figure 6-2 Choosing a Wireless Network

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

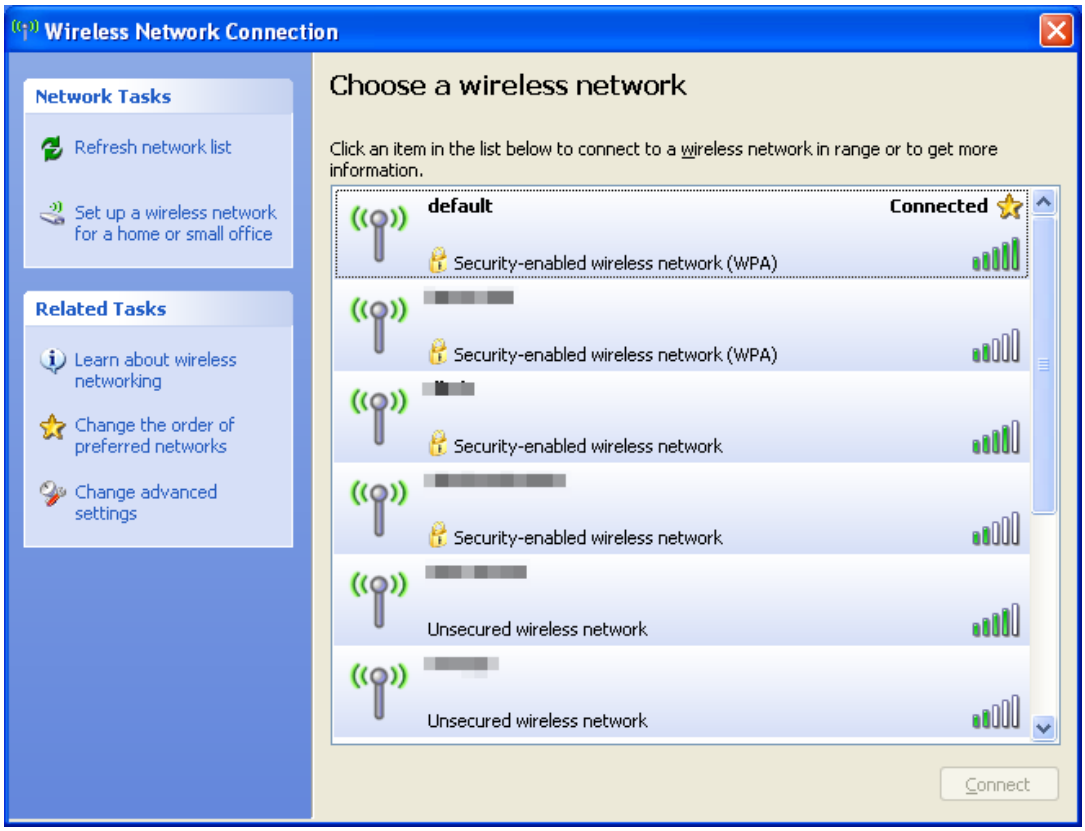


Figure 6-4 Choosing a Wireless Network -- Connected

Note

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.

Windows 7/8/10 (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.

5.2

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

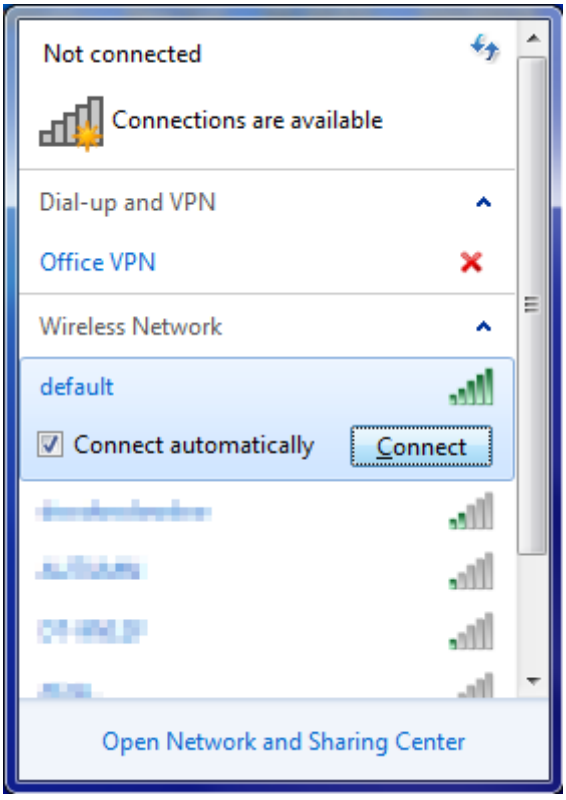


Figure 6-6 WLAN AutoConfig

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 5.7.2.1

(3) Click the [OK] button.

Figure 6-7 Typing the Network Key

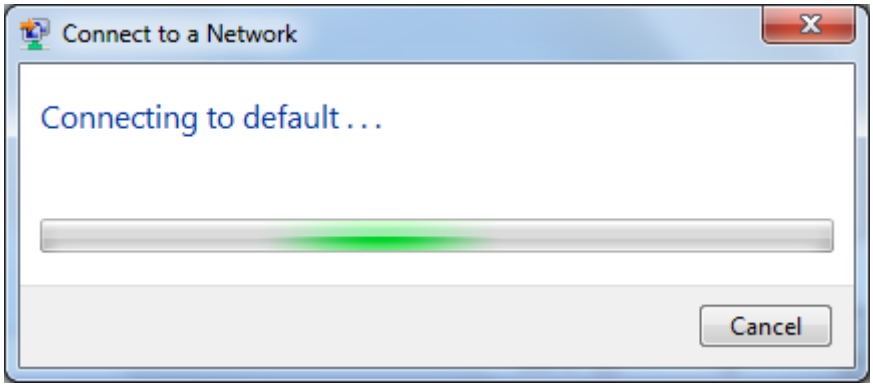


Figure 6-8 Connecting to a Network

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

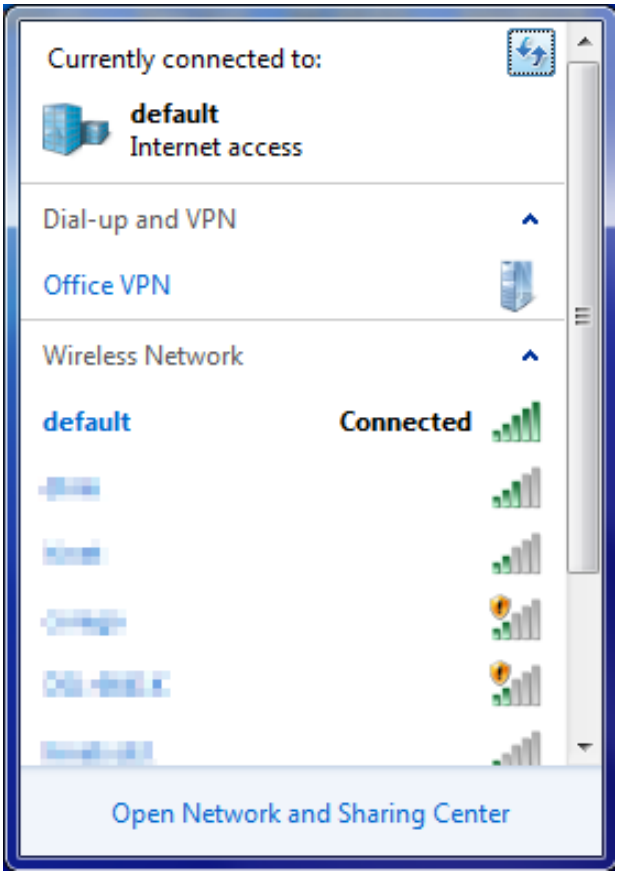


Figure 6-9 Connected to a Network

Mac OS X 10.x

In the following sections, the default SSID of the WDAP series is configured to “default”.

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

5.3 The AirPort Network Connection menu will appear.

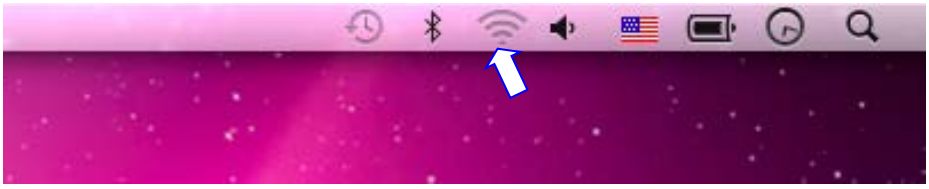


Figure 6-10 Mac OS – Network Icon

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.

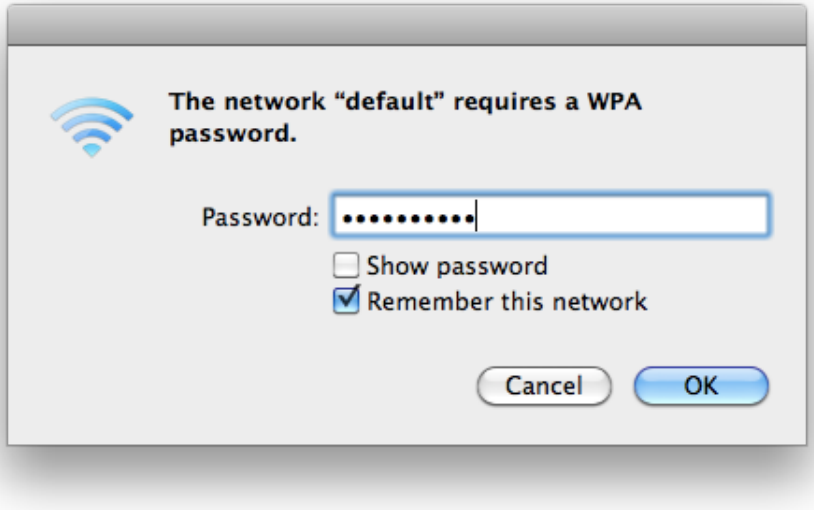


Figure 6-12 Enter the Password

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.

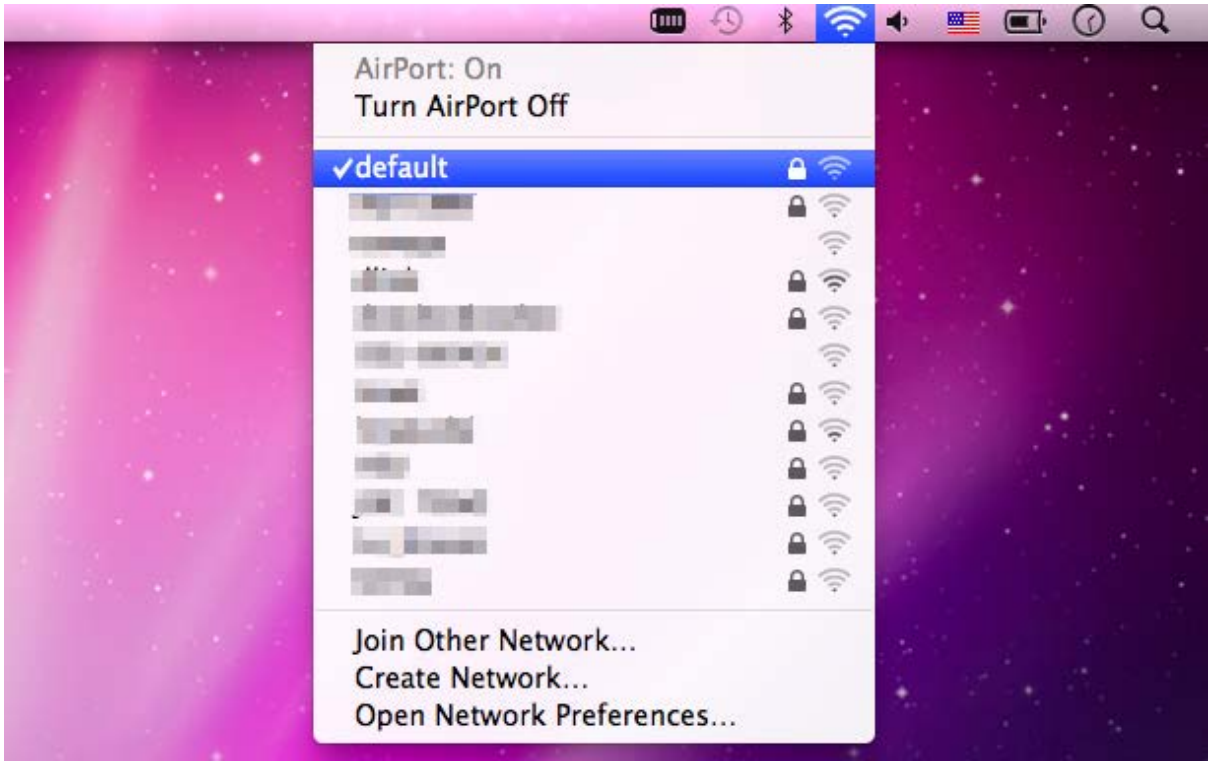


Figure 6-13 Connected to the Network

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**

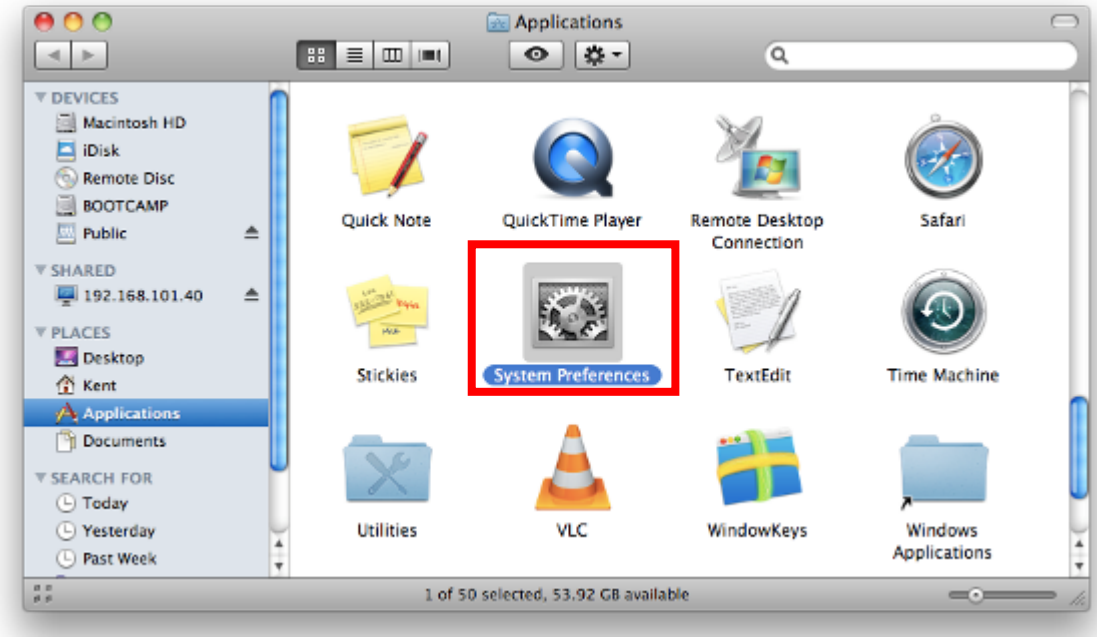


Figure 6-14 System Preferences

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

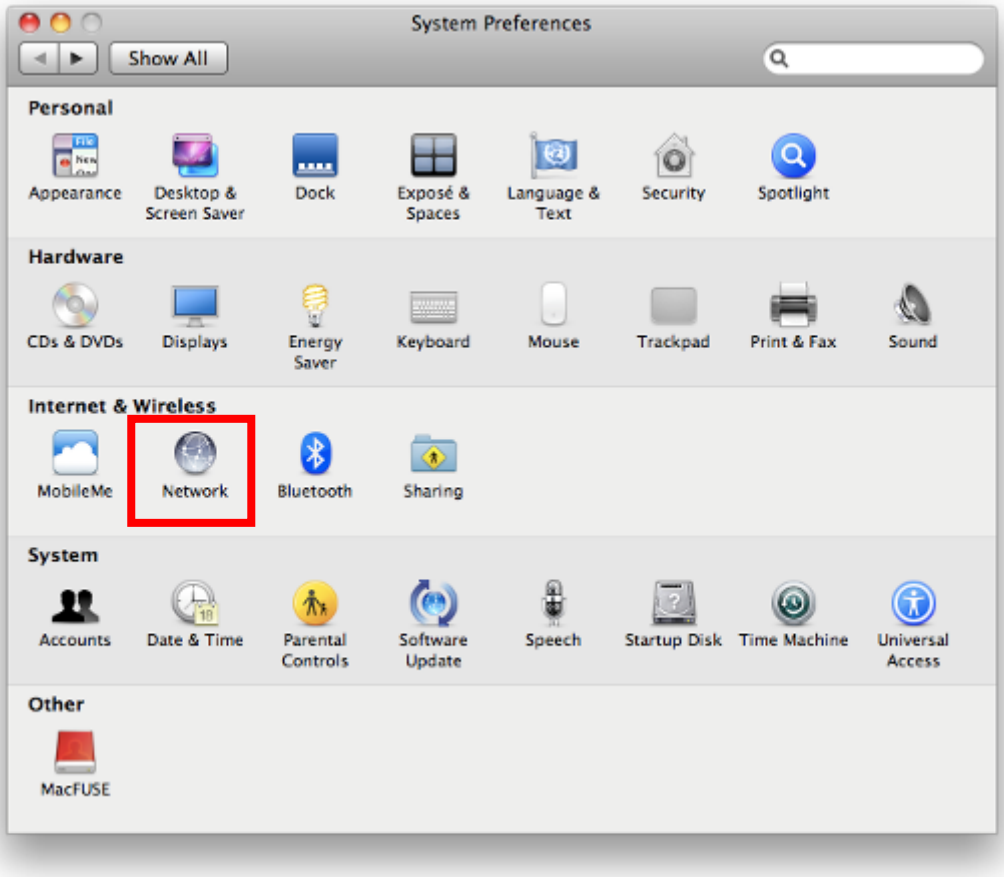


Figure 6-15 System Preferences -- Network

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 “No network selected”.

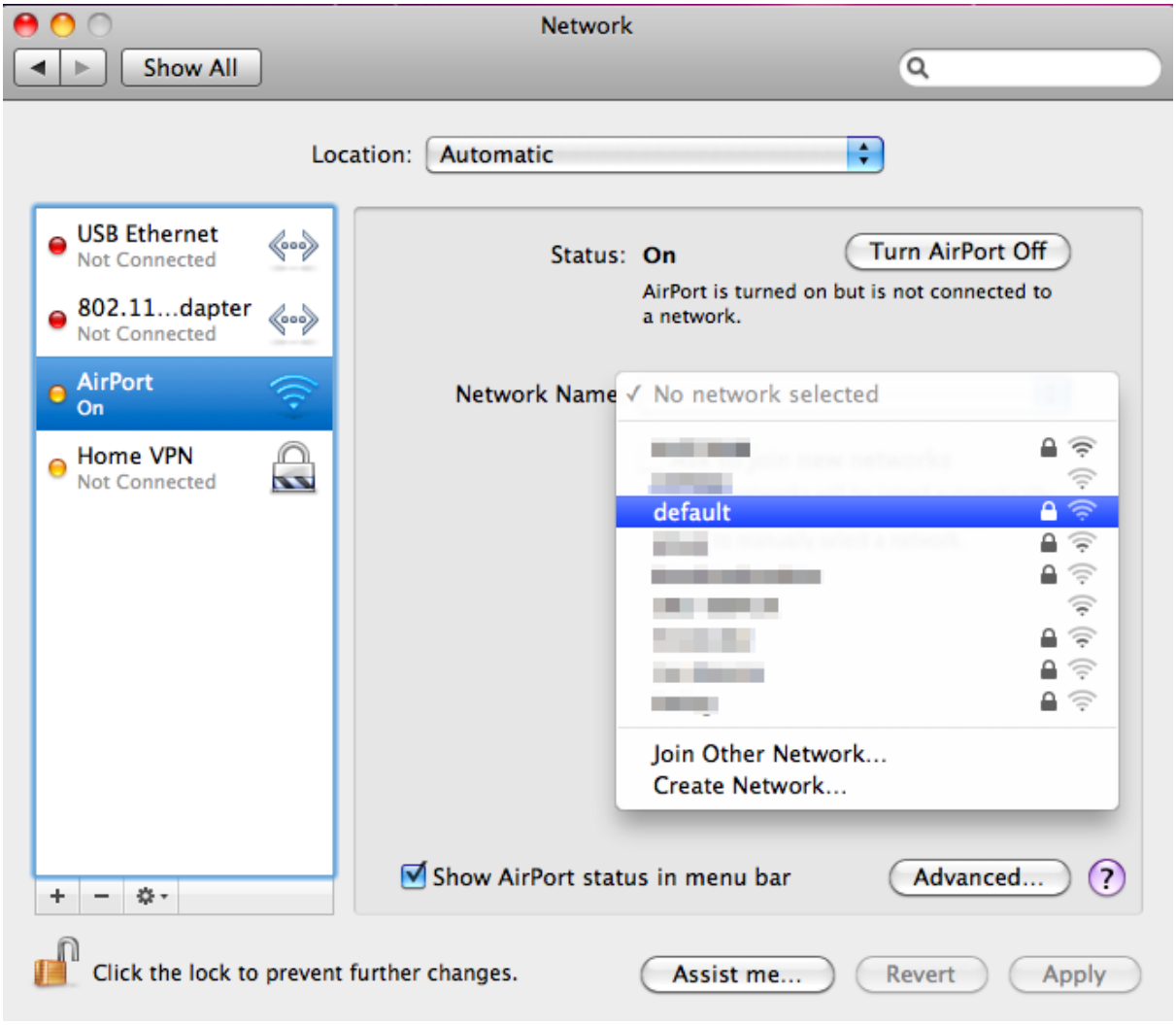


Figure 6-16 Selecting the Wireless Network

5.4 iPhone/iPod Touch/iPad

In the following sections, the **default SSID** of the WDAP series is configured to "**default**".

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

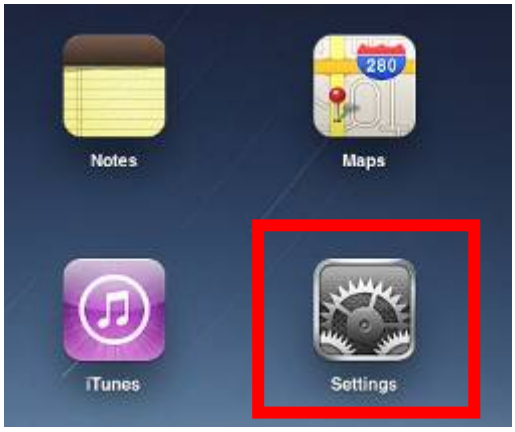


Figure 6-17 iPhone – Settings icon

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

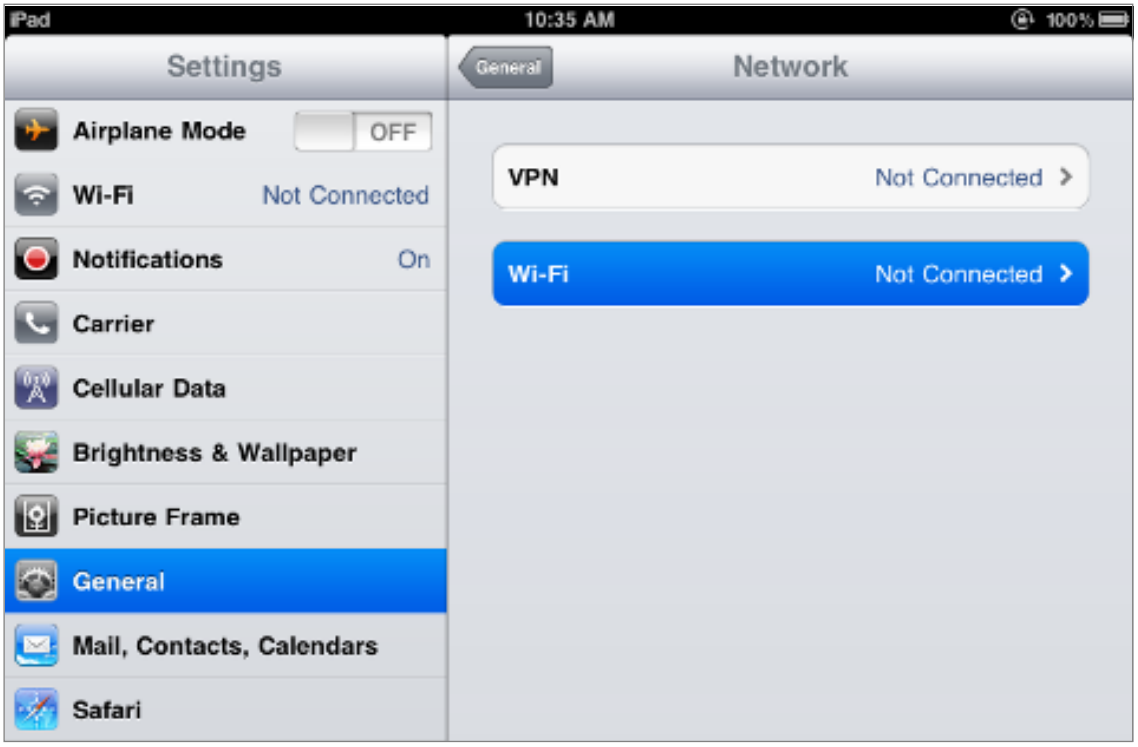


Figure 6-19 Wi-Fi Setting – Not Connected

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

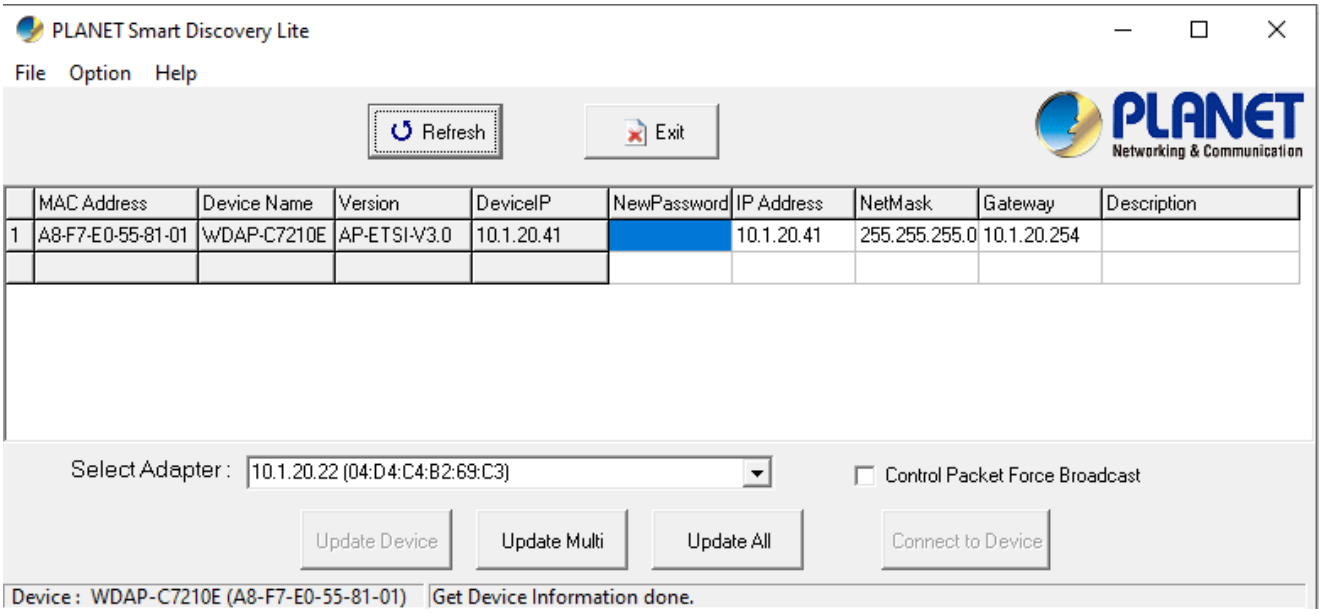
To easily list the WDAP series in your Ethernet environment, the Planet Smart Discovery Utility is an ideal solution.

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

Step 1: Deposit 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.

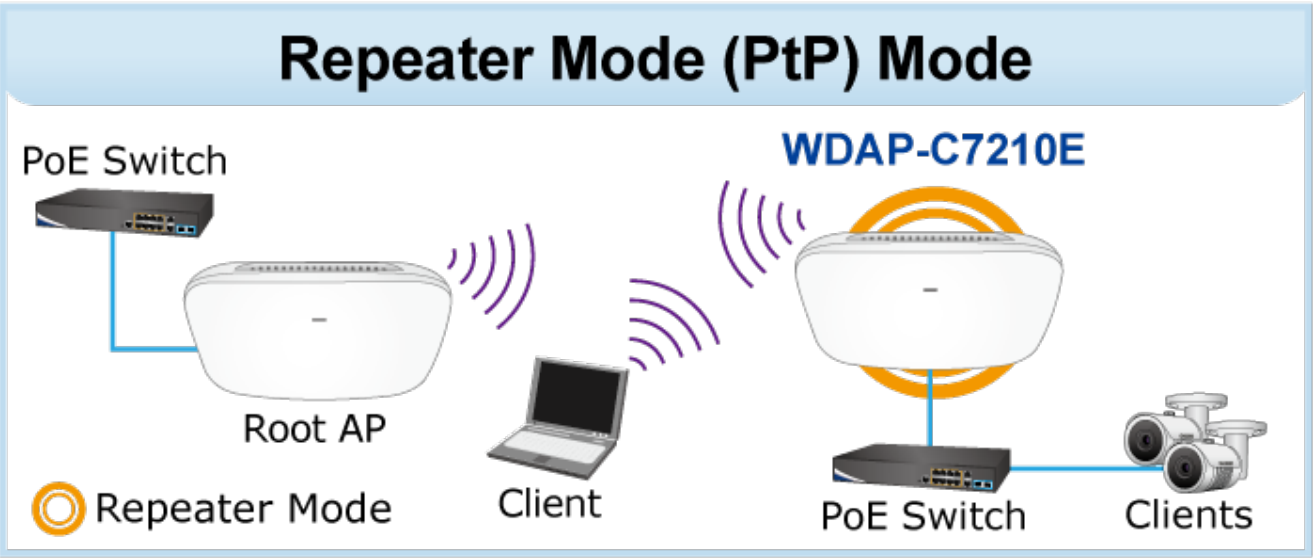
Note

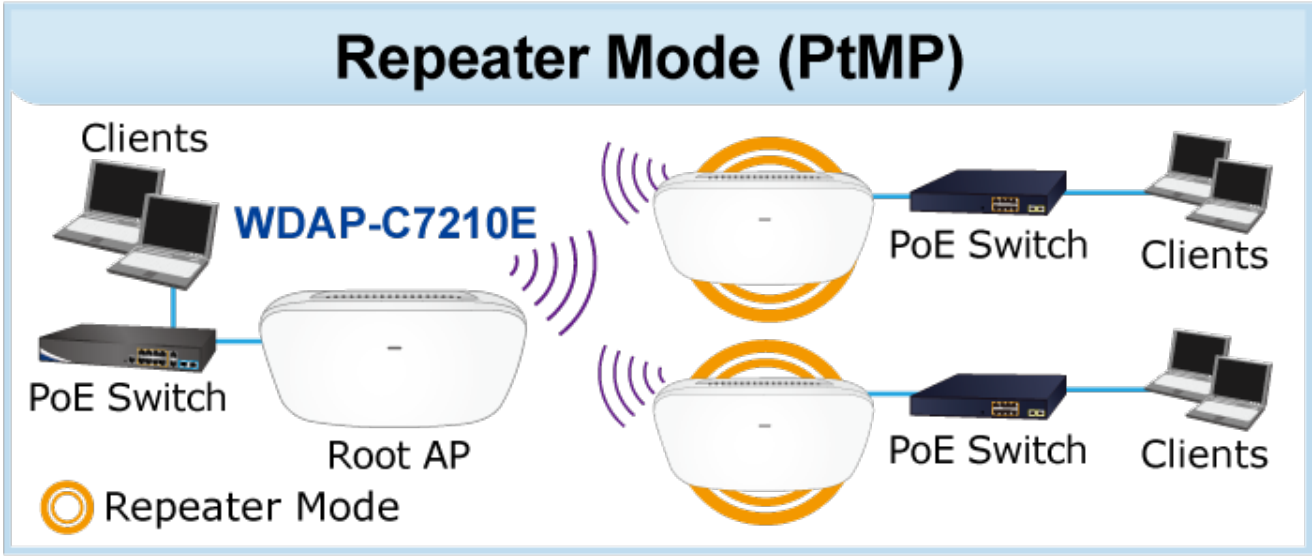
The fields in white background can be modified directly and then you can apply the new setting by clicking "**Update Device**".

Appendix B: FAQs

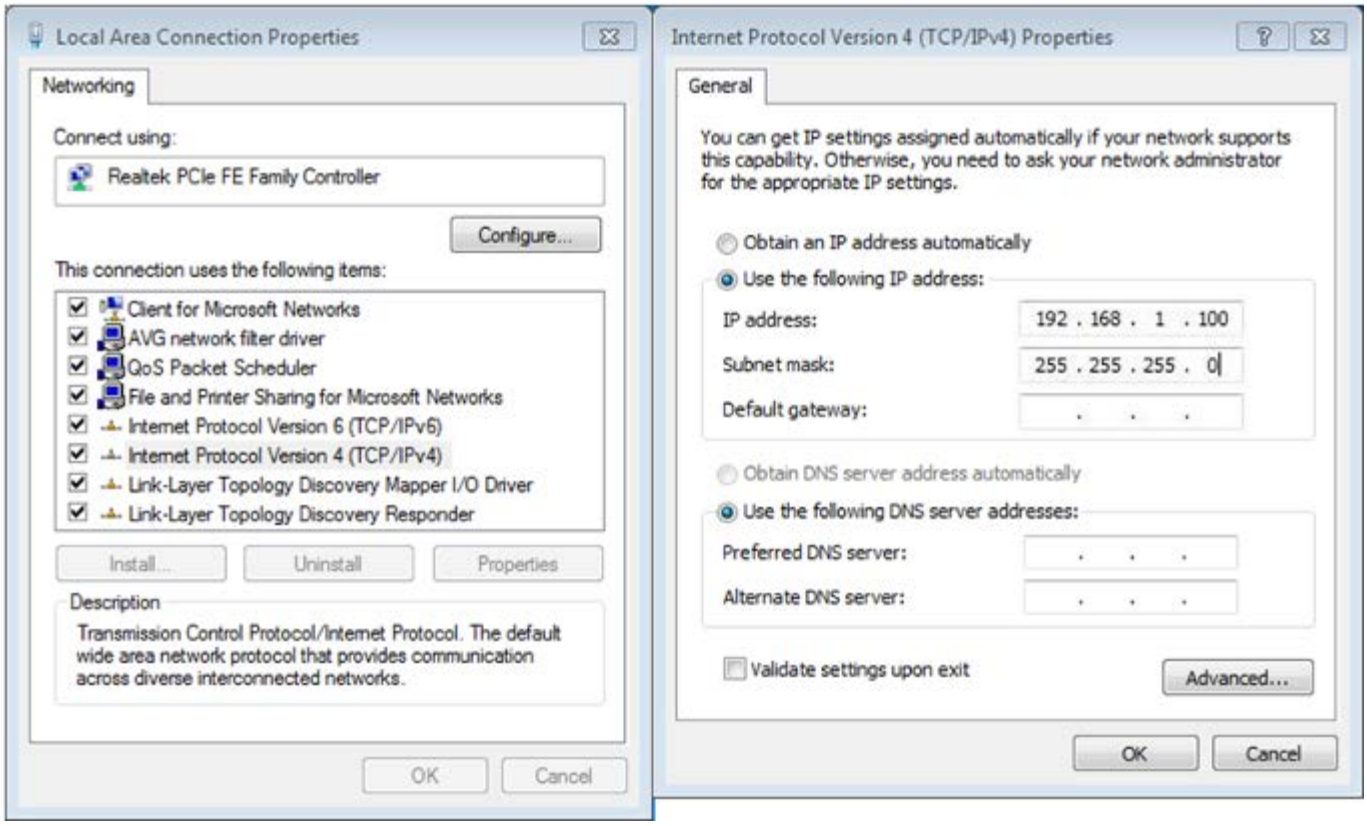
Q1: How to Set Up the AP Client Connection

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**".

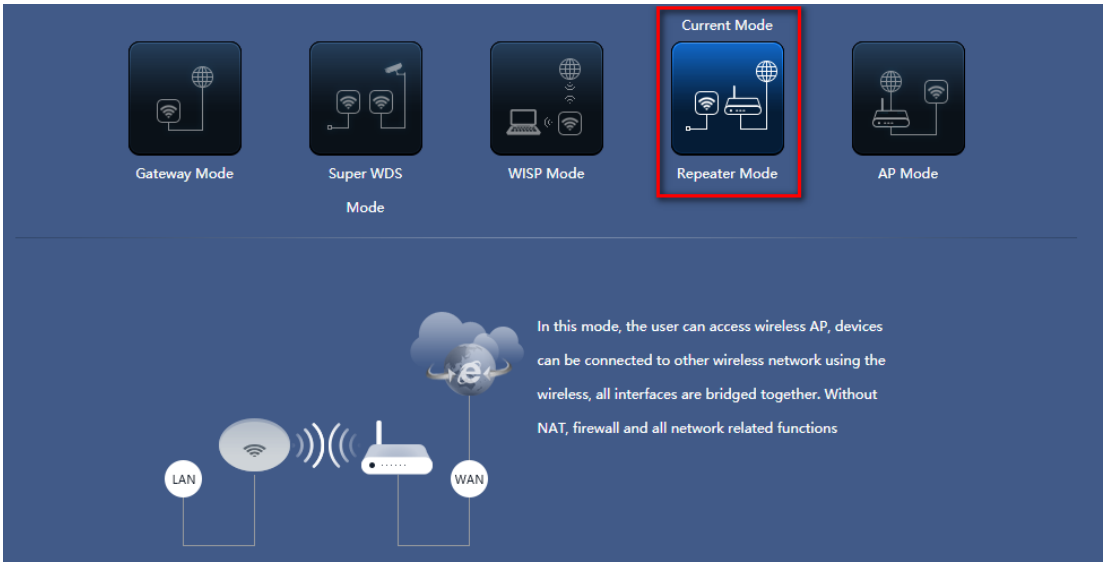


Step 2. In AP-2, change the default IP to the same IP range but different from AP-1. In this case, the IP is changed to **192.168.1.252**.

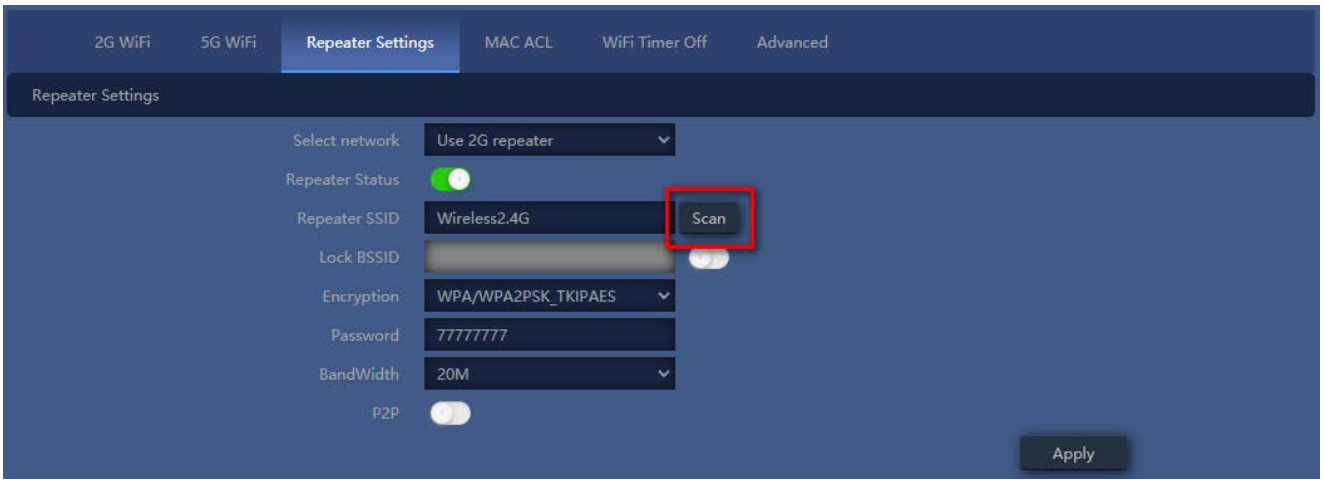
Step 3. In AP-1, go to "**Wizard**" to configure it to **AP Mode**. In AP-2, configure it to **Repeater Mode**.

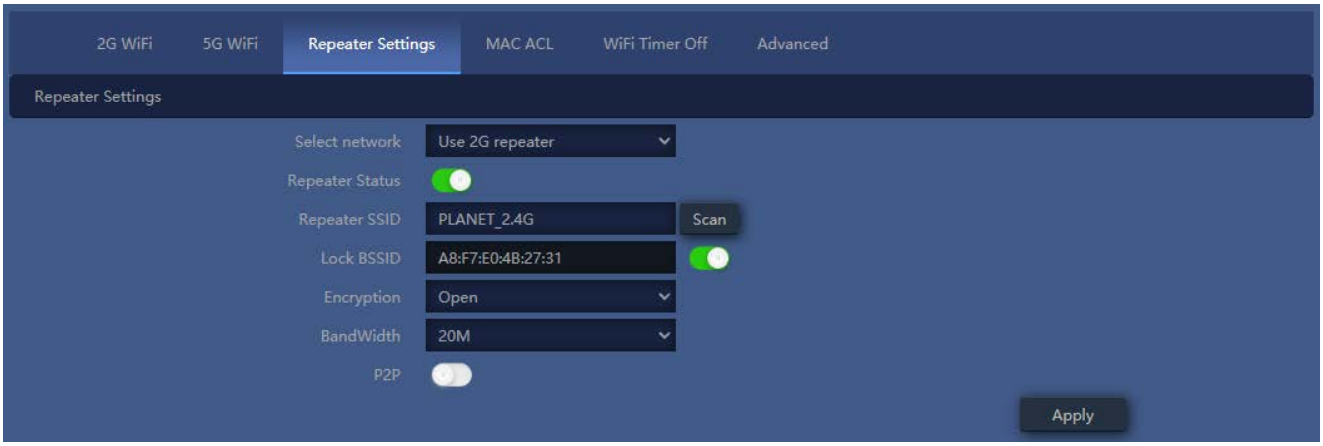
AP-1

AP-2



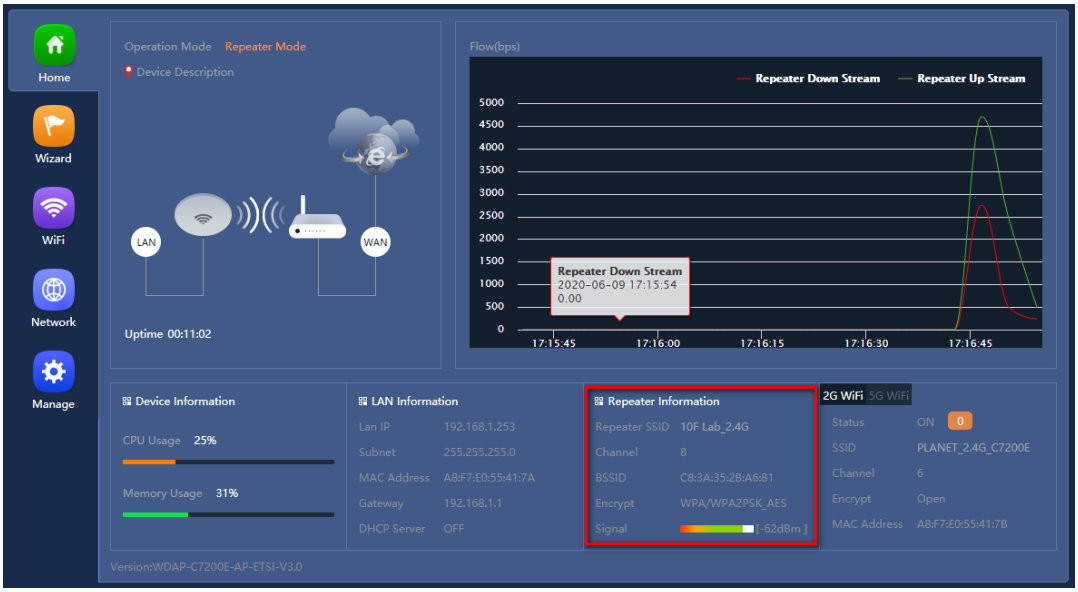
Step 4. In AP-2, press **Scan AP** to search the AP-1. You can also enter the MAC address, SSID, encryption and bandwidth if you know what they are.





Step 5. Click "**Next**" to finish the setting.

Step 6. Click "**Repeater Information**" to check connection status.

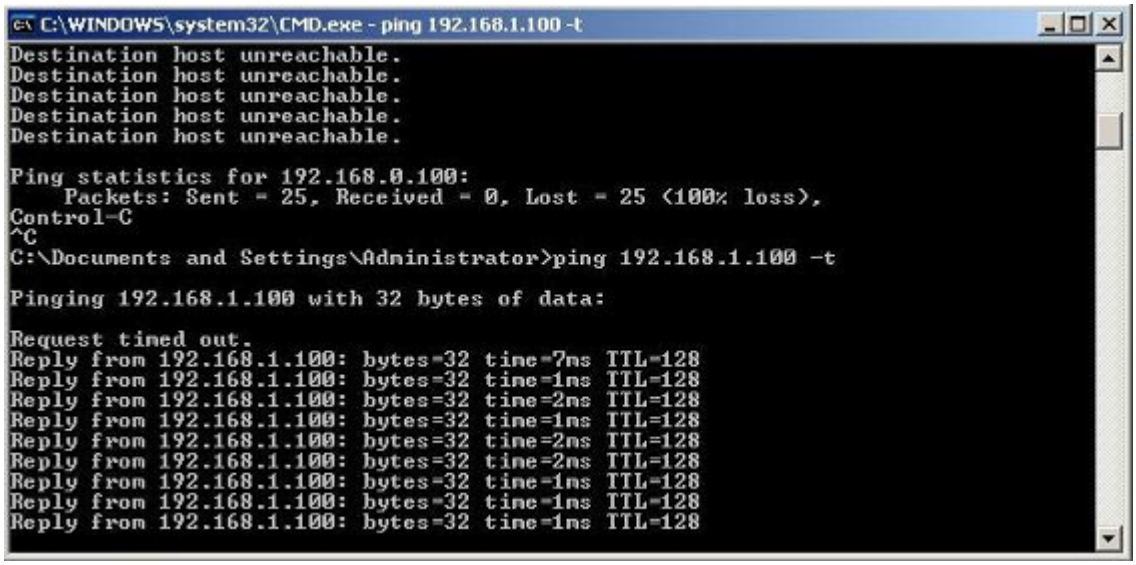


【Remark】If the signal was too high or too low that will effects the connection quality, please adjust the Tx power from web GUI or antenna to get best value about -60~-65 dBm.

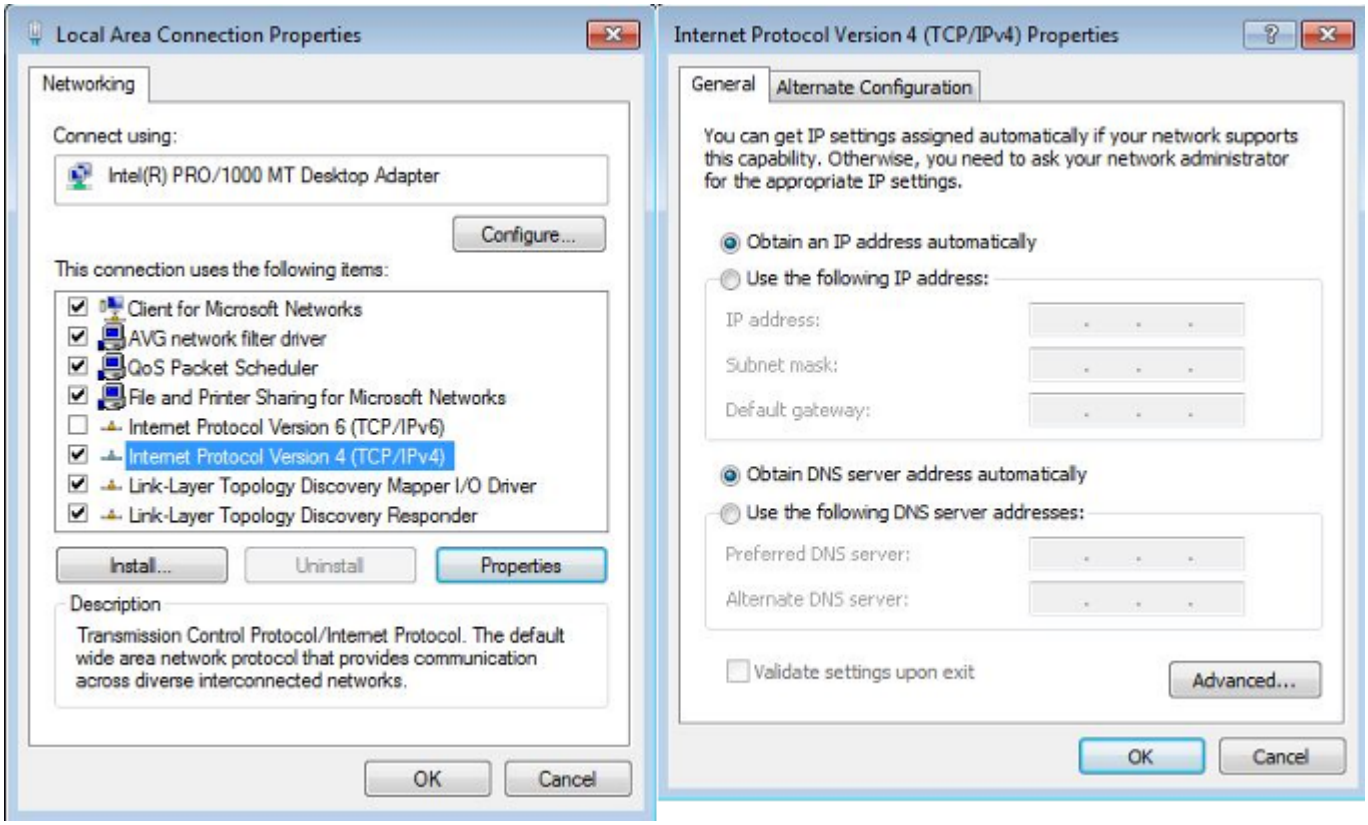
Wireless Signal Status	Signal (dBm)
Too Strong	>-60dBm
Strong	-61dBm~-70 dBm
Good	-71dBm~-80 dBm
Bad	-81dBm~-90 dBm
Very Bad	<-90dBm

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

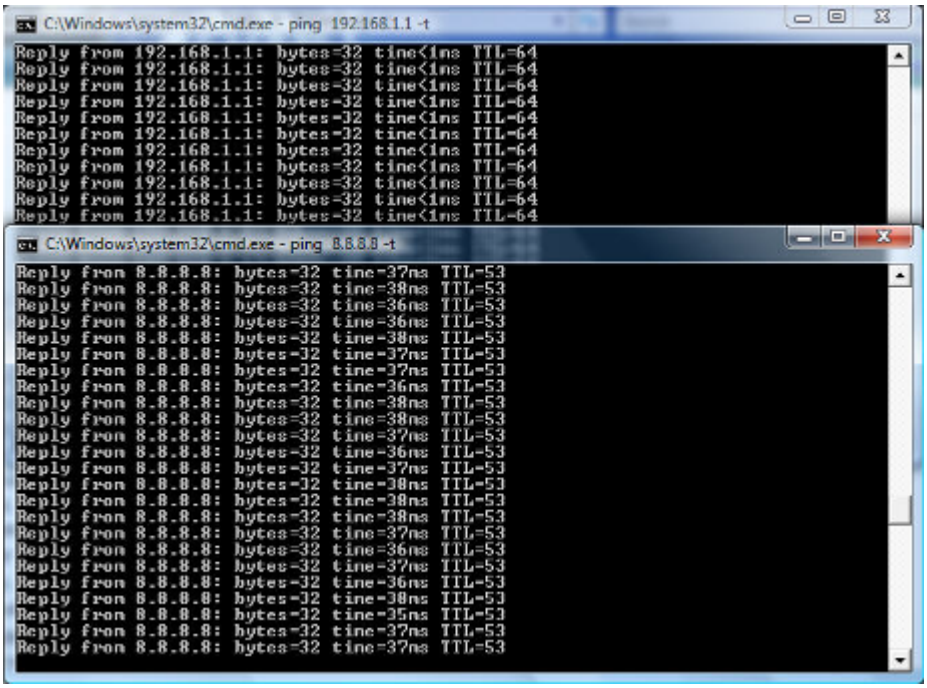
From Site-1, ping 192.168.1.200; and in Site-2, ping 192.168.1.100.



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.



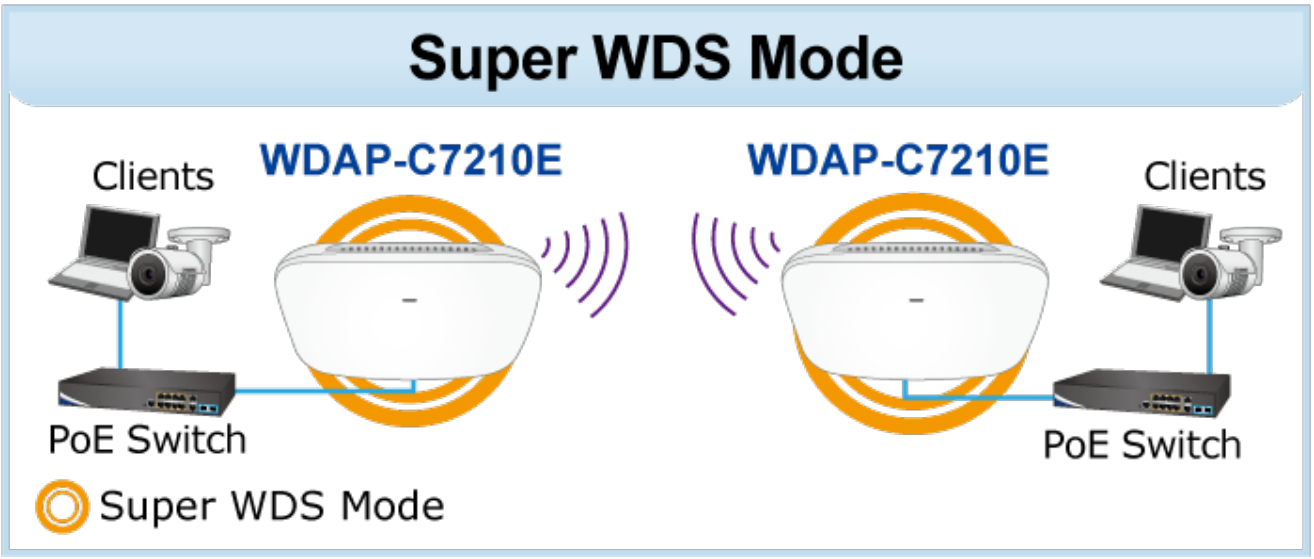
Note

The following hints should be noted:

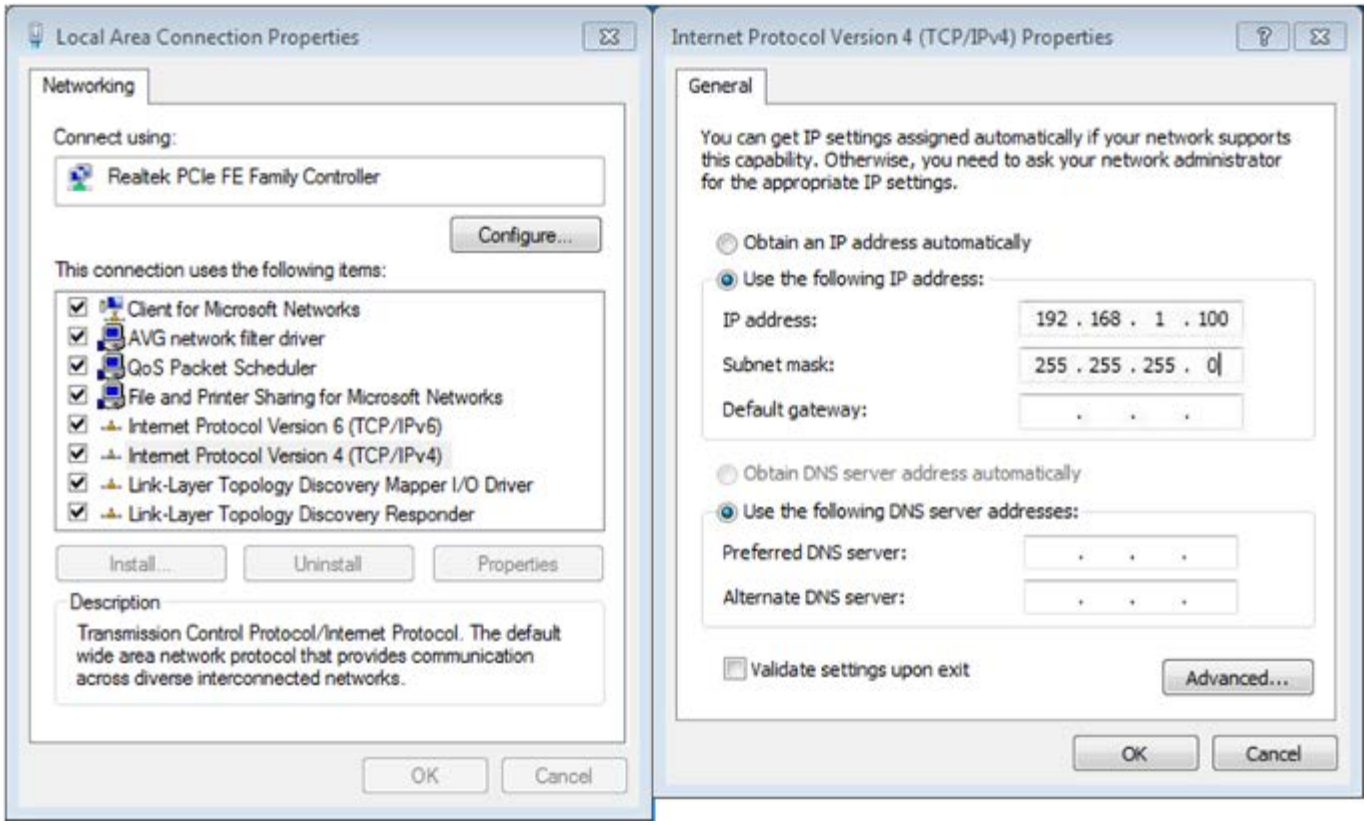
1) The encryption method must be the same as that of both sites if configured.
2) Both sites should be Line-of-Sight.
3) For the short distance connection less than 1km, please reduce the "RF Output Power" of both sites.
4) For the long distance connection over 1km, please adjust the "Distance" to the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

Q2: How to set up the WDS Connection

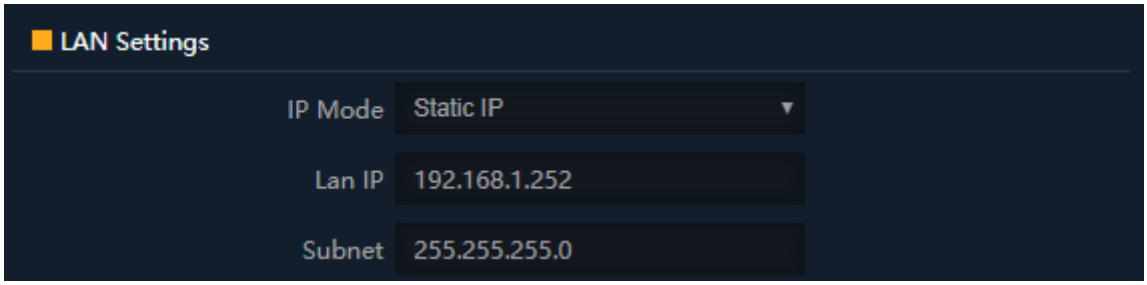
Topology:



Step 1. Use static IP in the PCs that are connected with WDAP-C7210E-1 (Site-1) and WDAP-C7210E-2 (Site-2). In this case, Site-1 is "**192.168.1.100**", and Site-2 is "**192.168.1.200**".

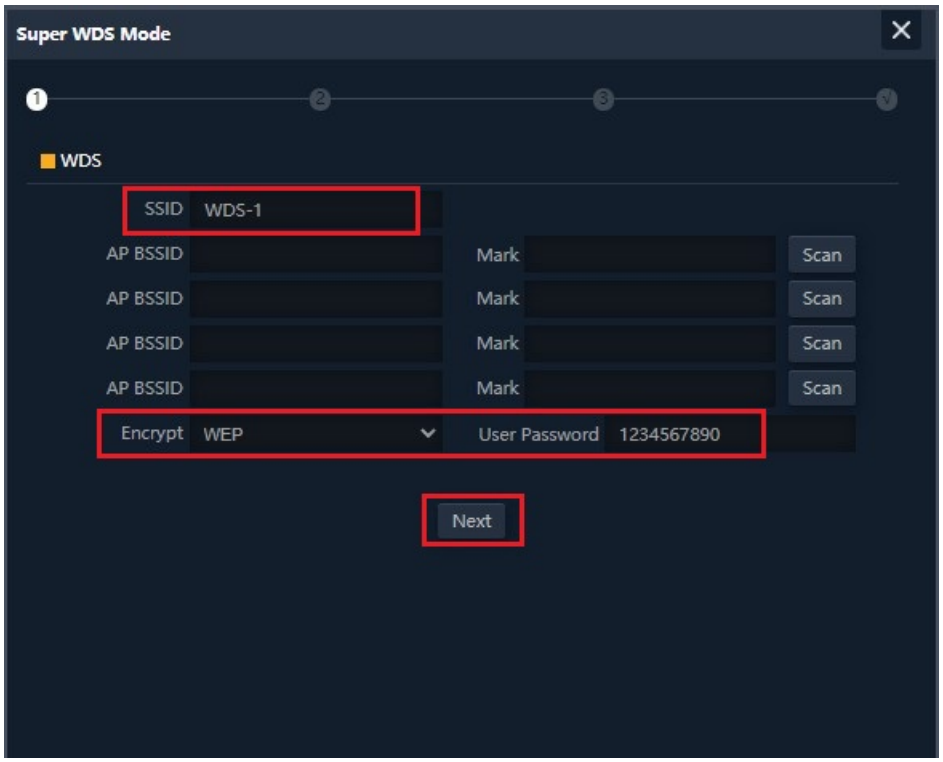


Step 2. In AP-2, change the default IP to the same IP range but different from AP-1. In this case, the IP is changed to **192.168.1.252**.



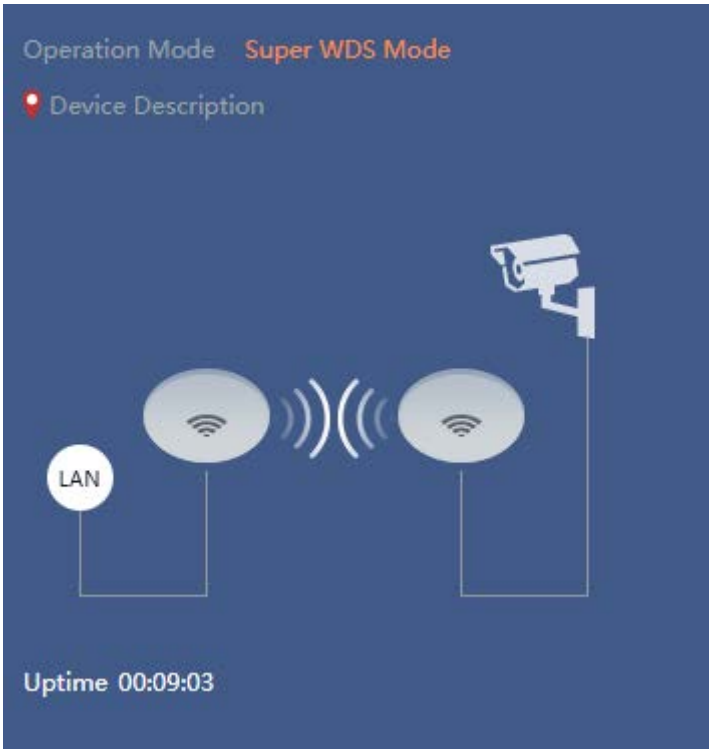
Step 3. In both APs, go to "**Wizard**" to configure it in **Super WDS** Mode.

Step 4. In AP1 set up WDS SSID, for example WDS-1. Select Encrypt for WEP and enter password.

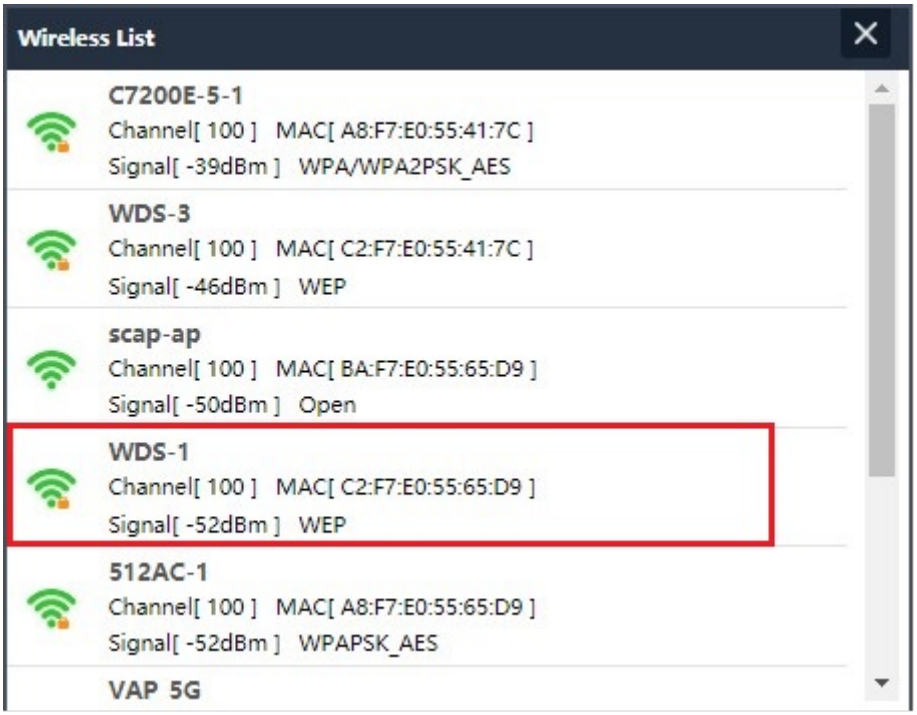


Step 5. Finish the 2.4G/5G Wi-Fi and LAN setting.

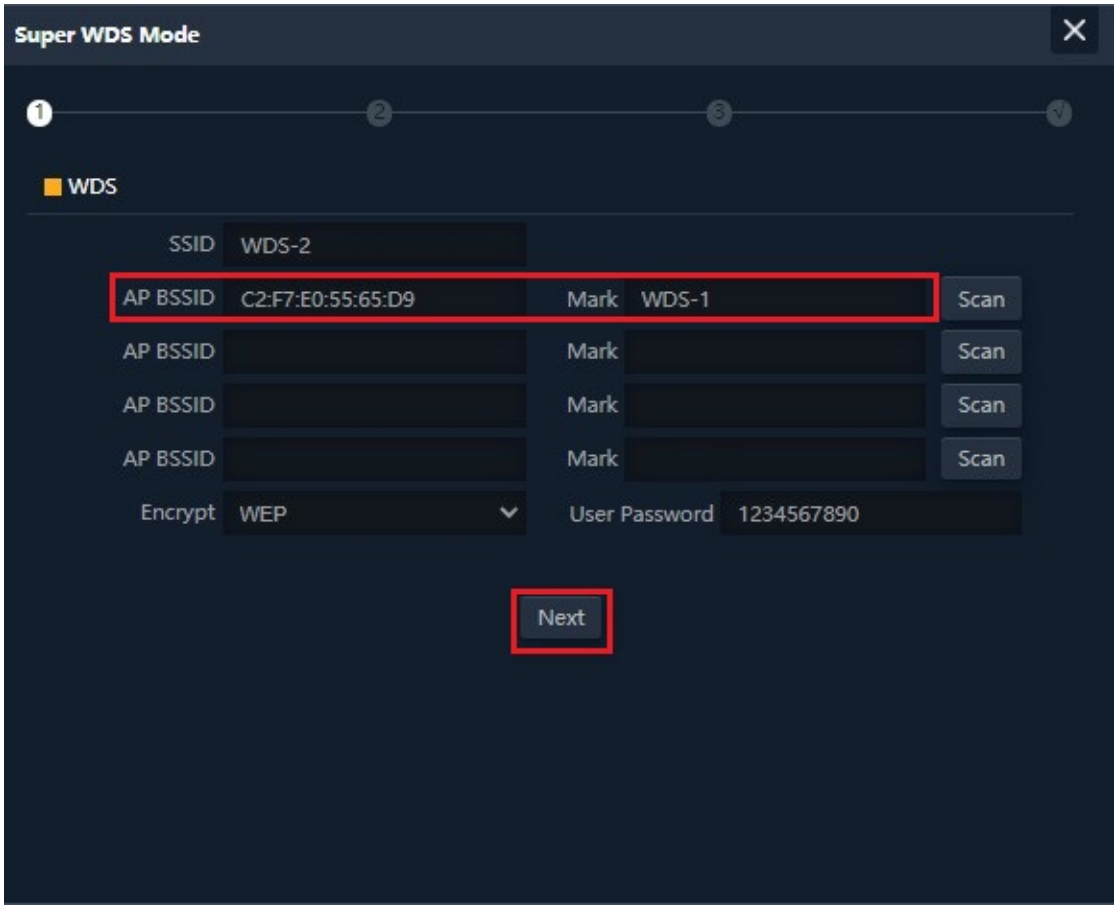
Step 6. Click "**Home**" to check WDS status.



Step 7. In AP2 scan AP1 WDS SSID, for example WDS-1. Select Encrypt for WEP and enter password.


Wireless List
C7200E-5-1
Channel[100] MAC[A8:F7:E0:55:41:7C]
Signal[-39dBm] WPA/WPA2PSK_AES
WDS-3
Channel[100] MAC[C2:F7:E0:55:41:7C]
Signal[-46dBm] WEP
scap-ap
Channel[100] MAC[BA:F7:E0:55:65:D9]
Signal[-50dBm] Open
WDS-1
Channel[100] MAC[C2:F7:E0:55:65:D9]
Signal[-52dBm] WEP
512AC-1
Channel[100] MAC[A8:F7:E0:55:65:D9]
Signal[-52dBm] WPAPSK_AES
VAP 5G

Step 8. Confirm SSID and MAC. Select Encrypt for WEP and enter password.

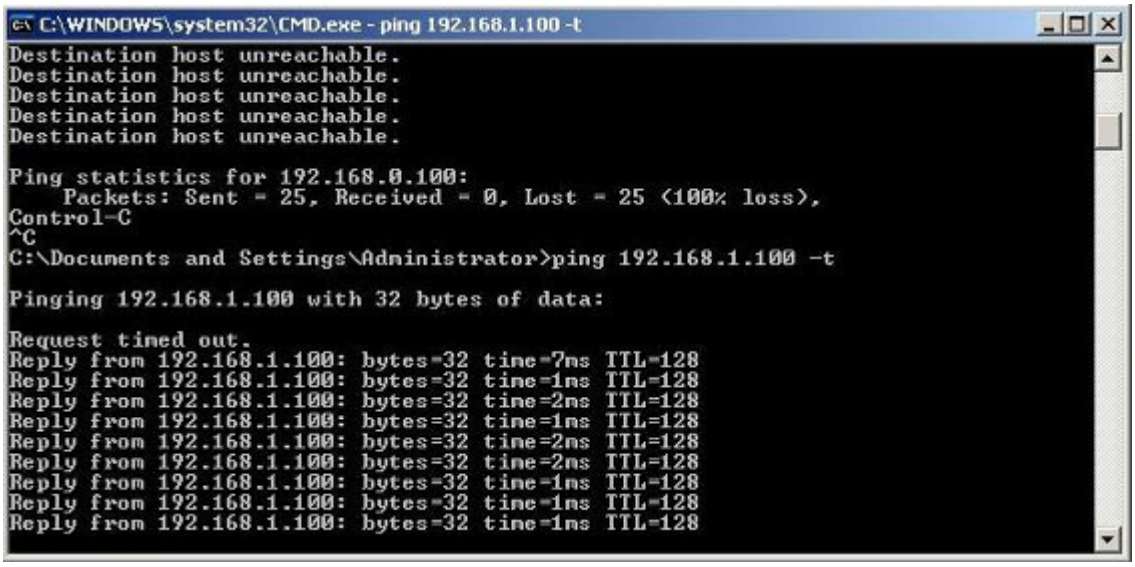


Step 9. Finish the 5G Wi-Fi and LAN setting.

Step 10. Go to "**WDS Information**" to check connection status.

Step 11. 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.



Note

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 1m, please reduce the "RF Output Power" of both sites.
4) For the long distance connection over 1m, 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.	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.

Scenario	Solution
	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. Internet is slow sometimes. Please be patient. b. Try to reset the AP and see if it's better after that. c. Try to know what computers do on your local network. If someone's transferring big files, other people will think Internet is really slow. d. 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.
- **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 **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 provvedimenti oħrajn relevanti 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". (BMWi)	**Nederlands**	Hierbij verklaart , **PLANET Technology orporation,** 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	*ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ* , **PLANET Technology Corporation,** *ΔΗΛΩΝΕΙ ΟΤΙ ΑΥΤΟ* **11ac Wireless AP***ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ* 2014/53/EU	**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,** apliecina, 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**.