

# User Manual

( WAP-8021)



HW: V2  
UM: V1.1

# Default Settings

IP Address	192.168.188.253
Password	admin
WiFi SSID	LevelOne 2.4G / LevelOne 5.8G
Password	66666666

## Attention:

### Check box contents:

1. Power Adapter
2. RJ45 Network Cable
3. Resource CD (User Manual, QIG)
4. Quick Installation Guide
5. Antenna

### 6. Warning:



#### **Attention**

- Do not use the product in high humidity or high temperatures.
- Do not use the same power source for the Product as other equipment. Only use the power adapter that comes with the package. Using a different voltage rating power adapter may damage the device.
- Do not open or repair the case yourself. If the Product is too hot, turn off the power immediately and have it repaired at a qualified service center.
- Place the Product on a stable surface and avoid using this product and all accessories outdoors.

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## Enable the status of Gateway Mode or WISP Mode

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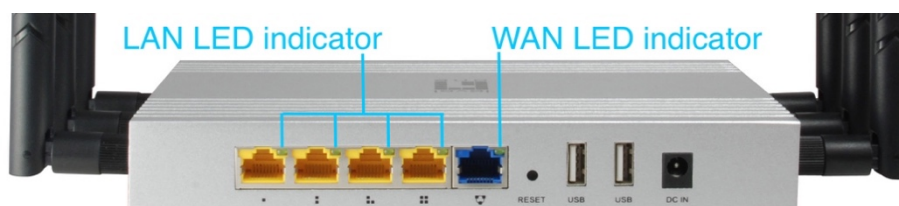
# Chapter 1 Hardware and Operation mode Instruction

## 1.1 LED indicator:



▲ Front View of the WAP-8021

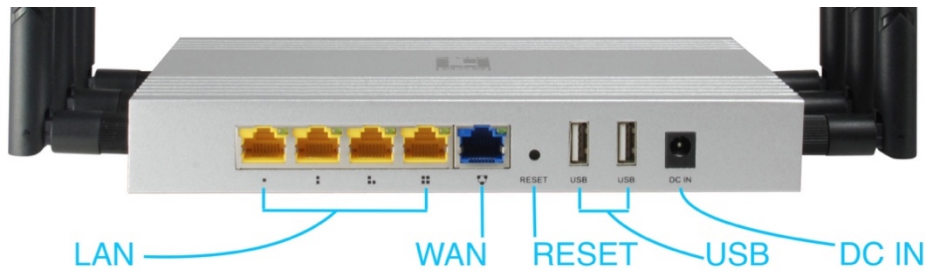
Color	Status	Description
--	Off	The WAP-8021 is not receiving power.
Green	On	Device Startup state
Green	Fast Blinking	Reset to Defaults
Blue	Blinking	WIFI SSID Broadcast ON



▲ Rear View of the WAP-8021

LED	Color	Status	Description
LAN (10/100/1000Mbps RJ45 Ports)	Green	Fast Blinking	The port is transmitting/receiving packets
	Green	Solow Blinking	On LAN is connected
	--	Off	The port has no active network cable connected, or it is not established a link to connected device.
WAN (10/100/1000Mbps RJ45 Ports)	Green	Fast Blinking	The port is transmitting/receiving packets
	Green	Solow Blinking	On WAN is connected
	--	Off	The port has no active network cable connected, or it is not established a link to connected device.

## 1.2 AP Inter face:



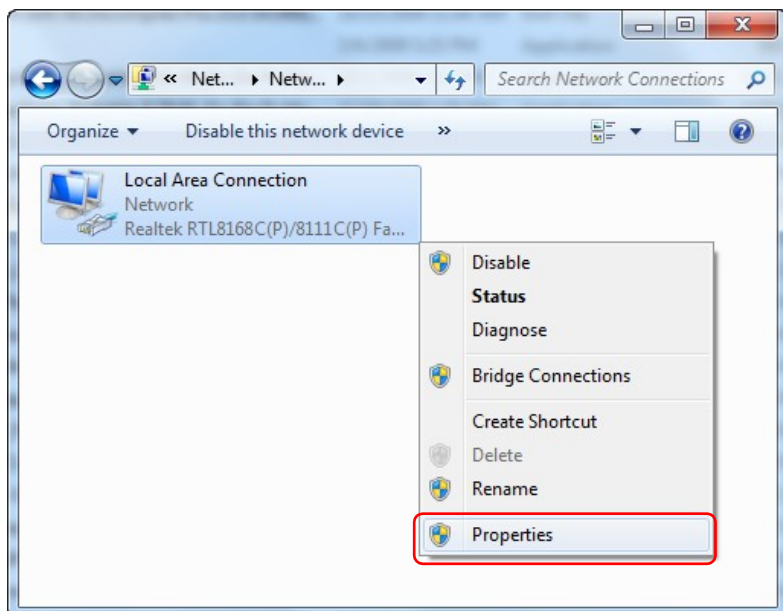
LED/Button/Interface	Description
LAN port (10/100Mbps RJ45 port)	The LAN port is used to connect to network devices, such as a switch or PC / NB
WAN port (10/100Mbps RJ45 port)	The WAN port is used to connect to network devices, such as xDSL Modem Router <b>Note:</b> The factory default is AP mode. WAN port functionality is available only in Gateway mode.
RESET (Reset to Default)	With the AP powered on, press the Reset button for 8~10 seconds until the Signal Strength LED blink faster than ever. The AP will restart itself and reset the device to factory default settings.
USB port	To connect with USB storage device. (Recommended Format to <b>NTFS</b> ) WAP-8021 share the files in USB disk to public users through SAMBA server. <b>Note:</b> Storage/server functionality is available only in Gateway mode.
DC IN	12V/1.5A DC input Power Adapter

## Chapter 2 Login

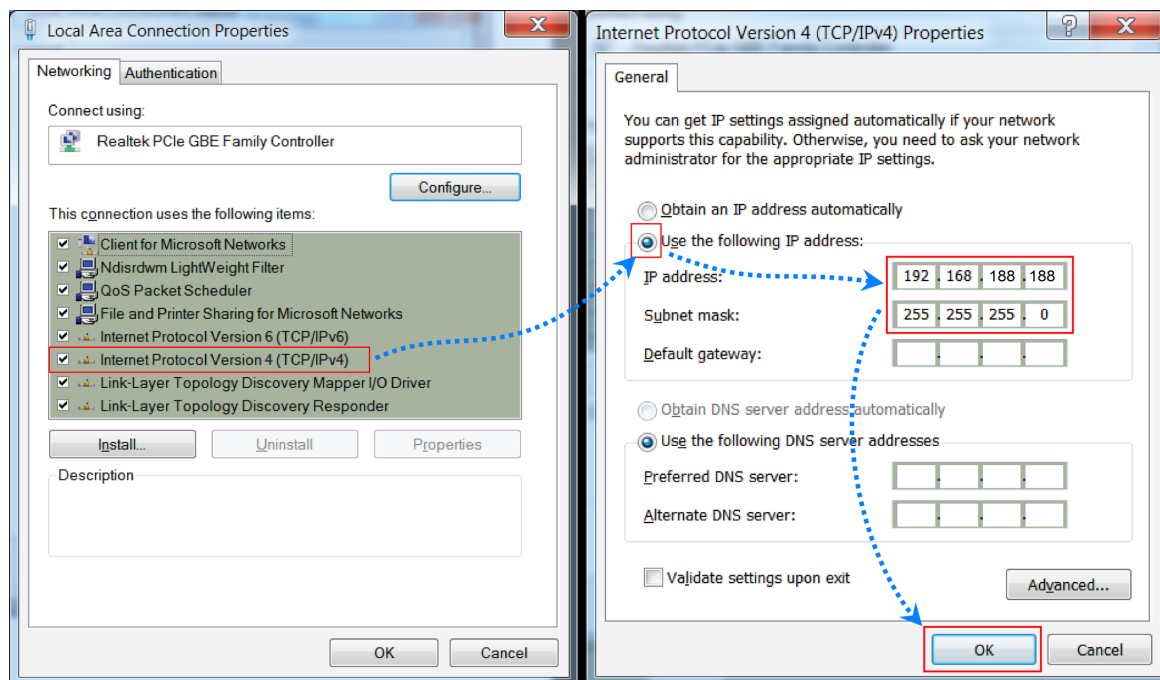
The necessary information about log in is displayed on the sticker of the product, including the URL, User Name and Pass Word

1.Connect the Ceiling AP with computer

2.Configure the PC's local connection IP address as 192.168.188.X (X is number from 2 to 252), subnet mask is 255.255.255.0, follow P1 and P2 to finish.

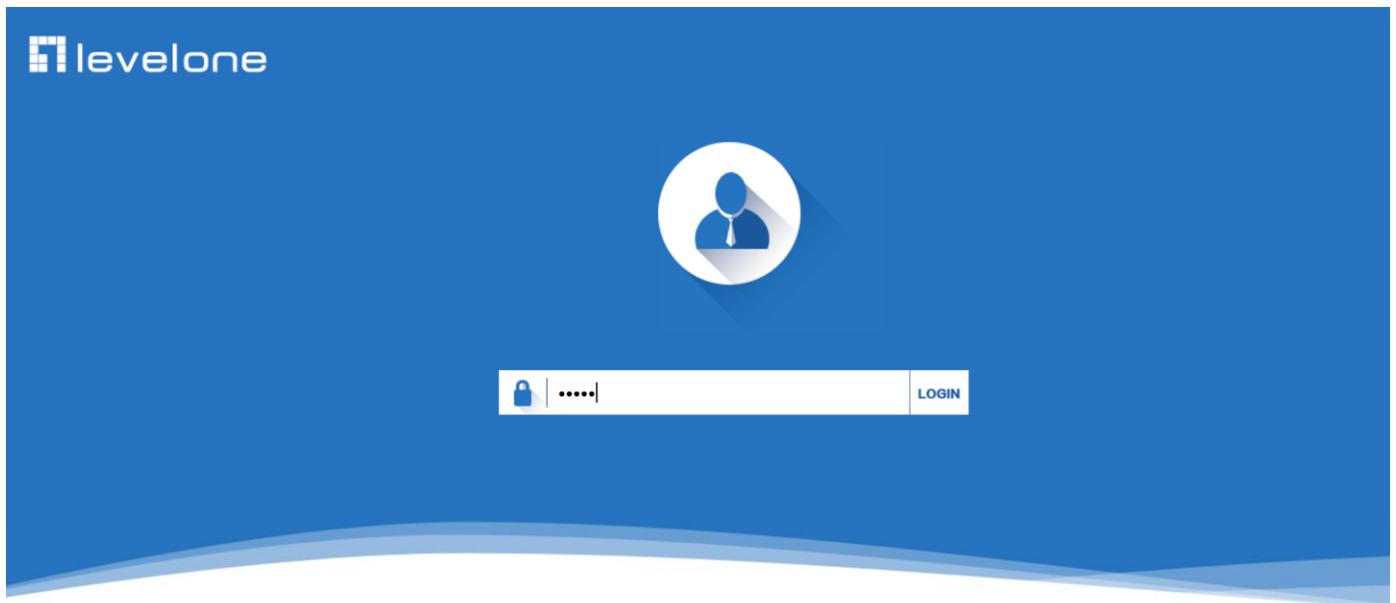


▲ P1 Setting of computer's IP address



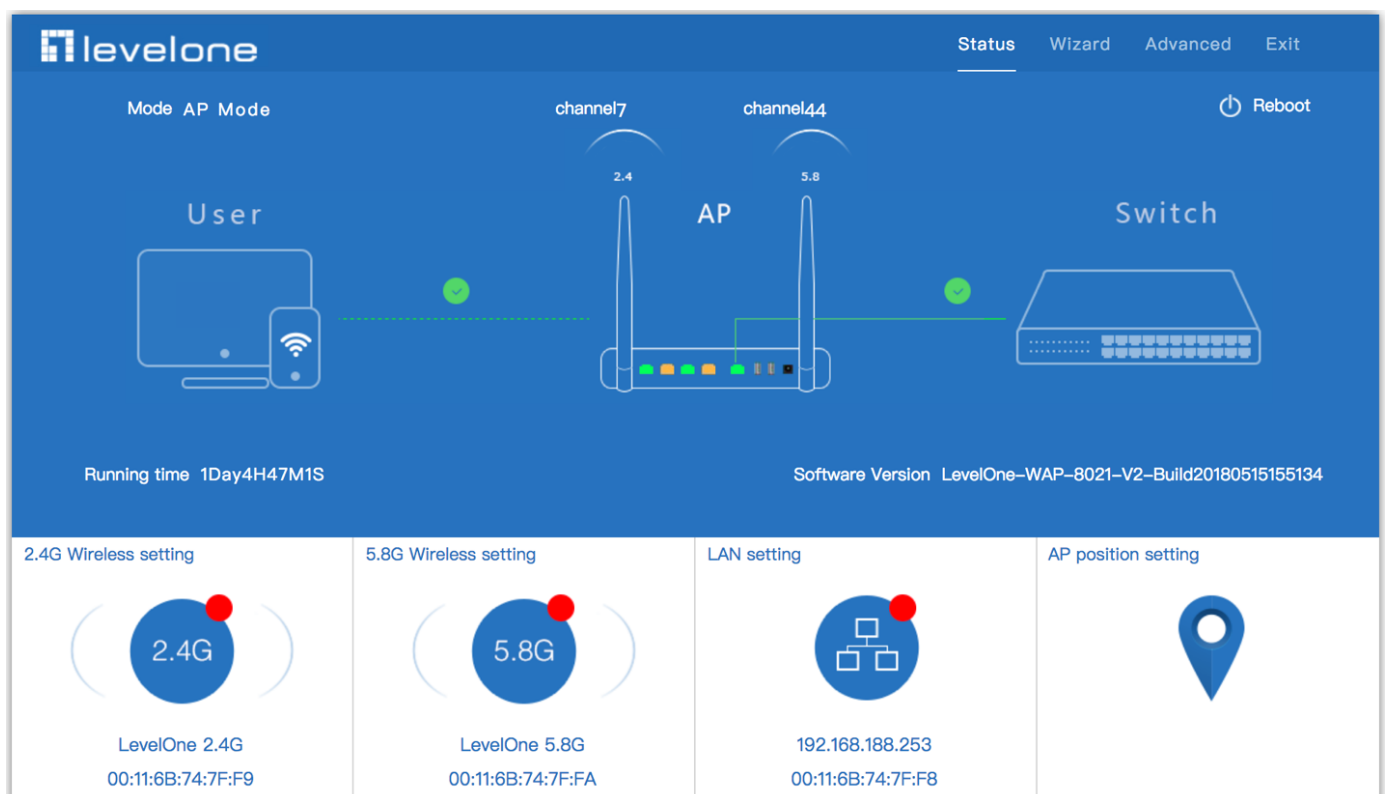
▲ P 2 Setting of computer's IP address

3. Input 192.168.188.253 into browser, then pop up the login page, the default login password: admin, then login,



4. After login, then P4 Device Status will be showed;

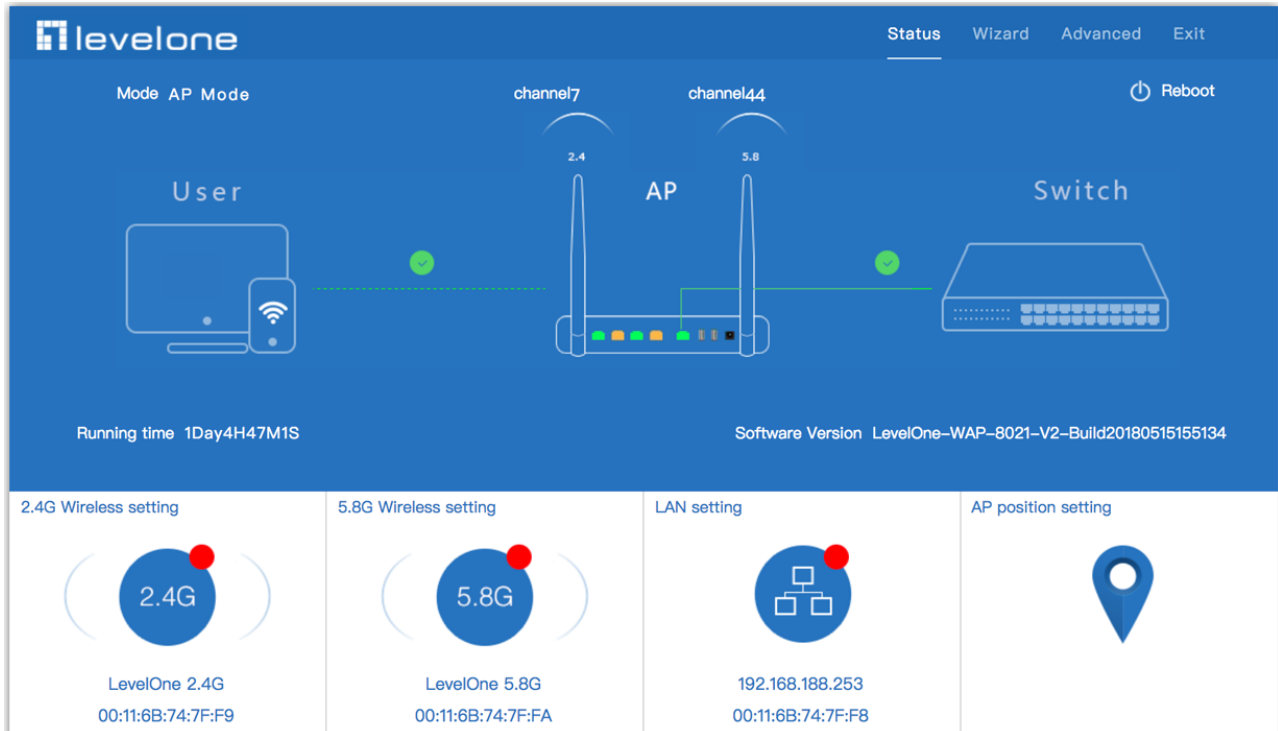
This page will show the Wireless AP's default operation mode, channel, connection status, CPU usage, Wireless settings, LAN Setting, Wireless AP's Location, hardware/firmware version.



## Chapter 3 WEB GUI interface Setting

### Status :

1.Then in Wireless Setting, GUI configuration page showed as below:



2.Then in Wireless Setting, GUI configuration page showed as below:

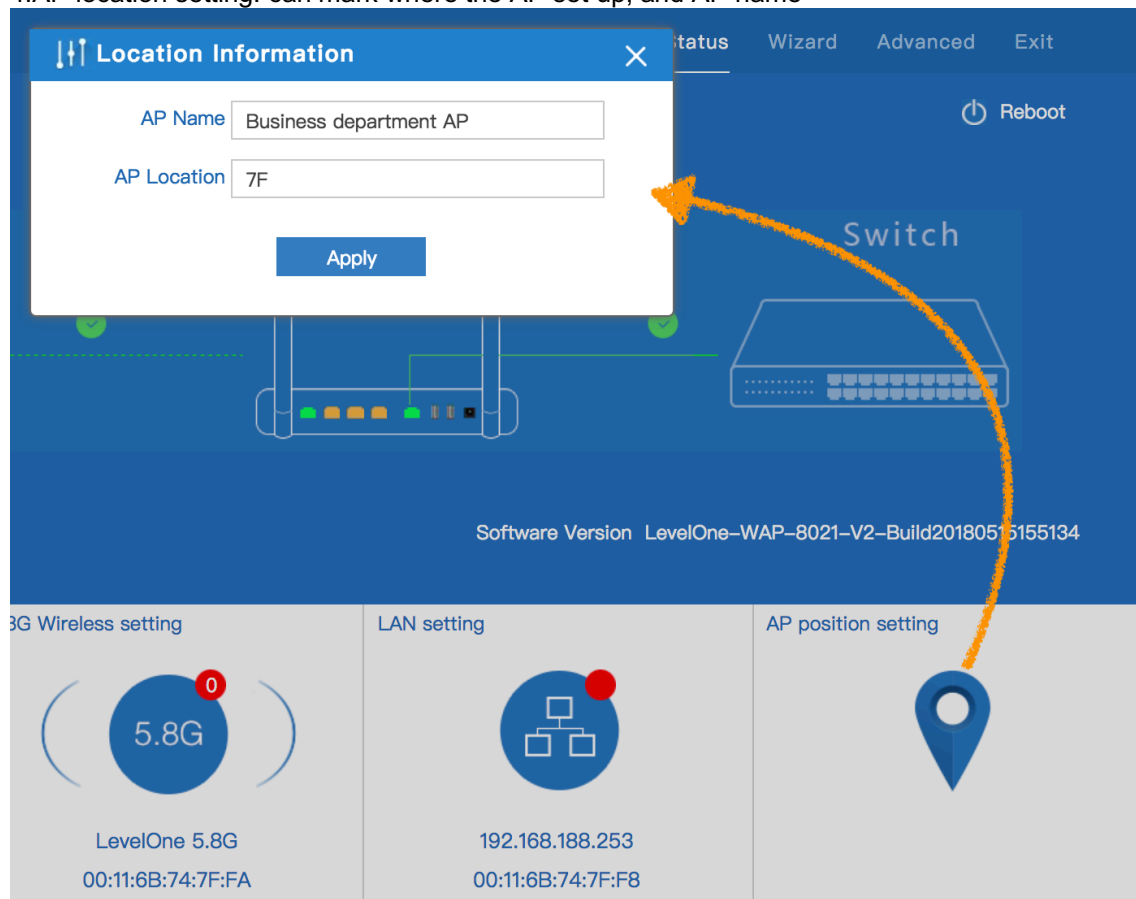
User can configure the SSID, password, band width, channel here, then Apply to finish.



### 3.LAN Setting to configure the Static IP or DHCP from Controller

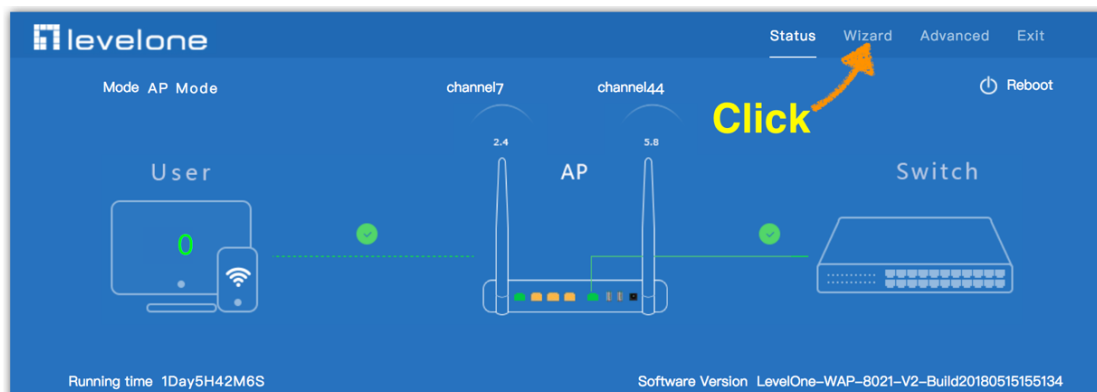


### 4.AP location setting: can mark where the AP set up, and AP name



## 3.1 Wizard :

1.Click Wizard in Status page, will pop up following page to configure the operation mode and there are explanation for each operation mode for better application.

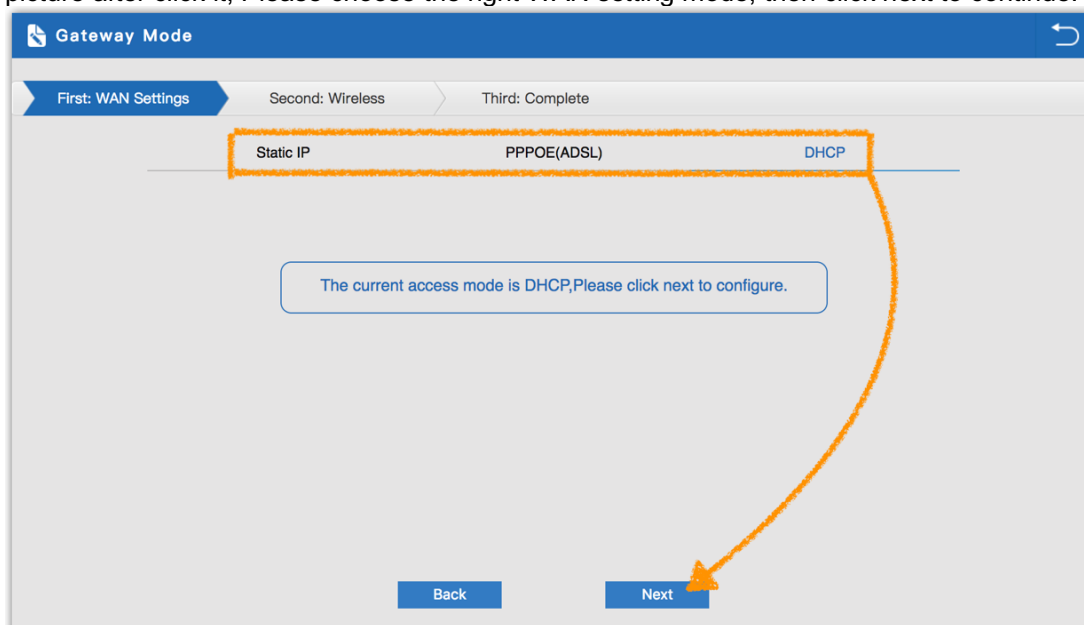


2.Wizard: It instruct users to configure wireless AP's operation mode based on needs: there are four operation mode including gateway, repeater, WISP, Wireless AP. Please confirm the operation mode first before configuration starting.



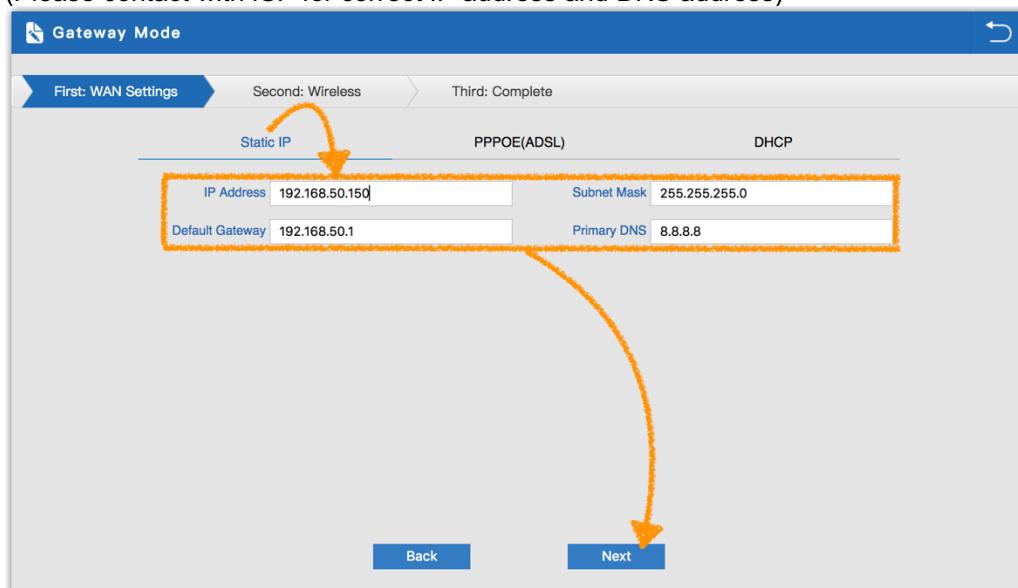
## 3.2 Gateway Mode:

Before Click Gateway mode, confirm your internet will be static IP, PPPoE, or DHCP: Then will pop up following picture after click it, Please choose the right WAN setting mode, then click next to continue.



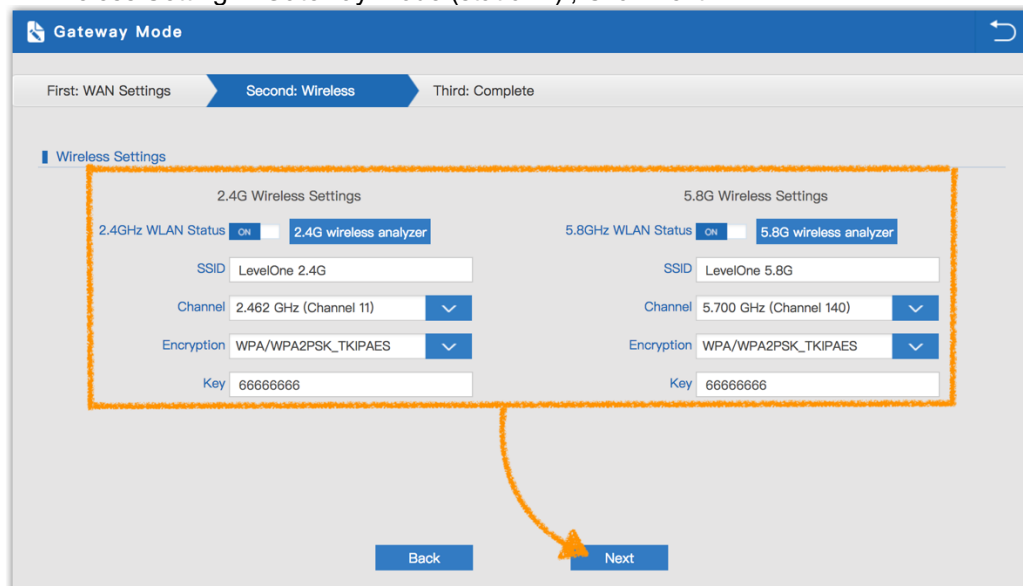
### 3.2.1 Static IP setting in Gateway Mode :

1. Sample Static IP mode setting method, then click next to continue.  
(Please contact with ISP for correct IP address and DNS address)



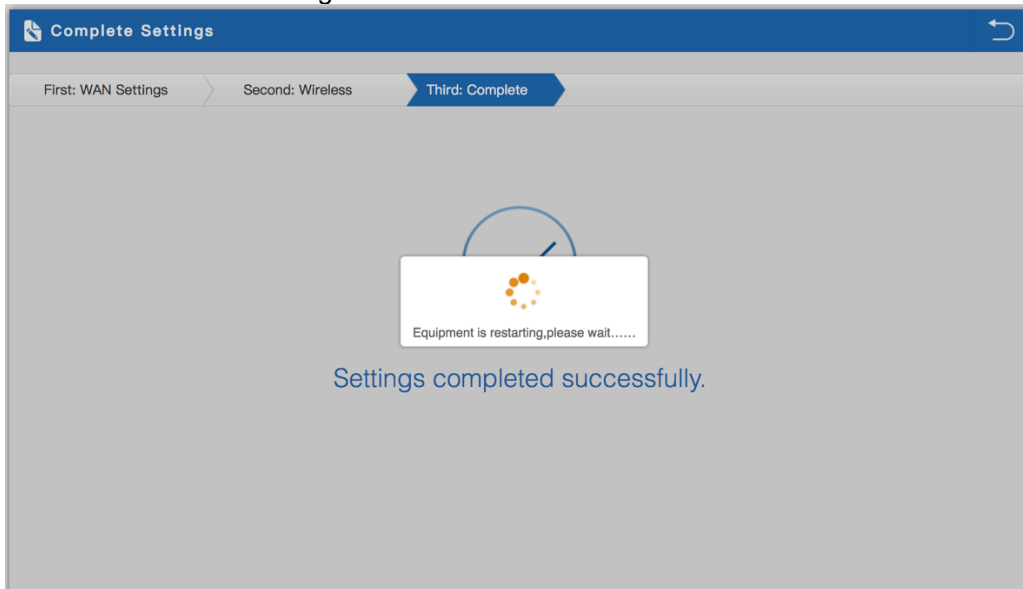
The screenshot shows the 'Gateway Mode' configuration interface. At the top, there are three tabs: 'First: WAN Settings', 'Second: Wireless', and 'Third: Complete'. The 'First: WAN Settings' tab is active. Below the tabs, there are three radio buttons: 'Static IP', 'PPPOE(ADSL)', and 'DHCP'. The 'Static IP' radio button is selected. Below the radio buttons, there are four input fields: 'IP Address' (192.168.50.150), 'Subnet Mask' (255.255.255.0), 'Default Gateway' (192.168.50.1), and 'Primary DNS' (8.8.8.8). These fields are enclosed in an orange dashed box. At the bottom, there are two buttons: 'Back' and 'Next'. An orange arrow points from the 'Next' button to the 'Second: Wireless' tab.

2. Wireless Setting in Gateway Mode (static IP) , Click Next



The screenshot shows the 'Gateway Mode' configuration interface. At the top, there are three tabs: 'First: WAN Settings', 'Second: Wireless', and 'Third: Complete'. The 'Second: Wireless' tab is active. Below the tabs, there is a section titled 'Wireless Settings'. This section contains two columns: '2.4G Wireless Settings' and '5.8G Wireless Settings'. Each column has a 'WLAN Status' toggle (ON), a '2.4G wireless analyzer' or '5.8G wireless analyzer' button, an 'SSID' input field, a 'Channel' dropdown menu, an 'Encryption' dropdown menu, and a 'Key' input field. These fields are enclosed in an orange dashed box. At the bottom, there are two buttons: 'Back' and 'Next'. An orange arrow points from the 'Next' button to the 'Third: Complete' tab.

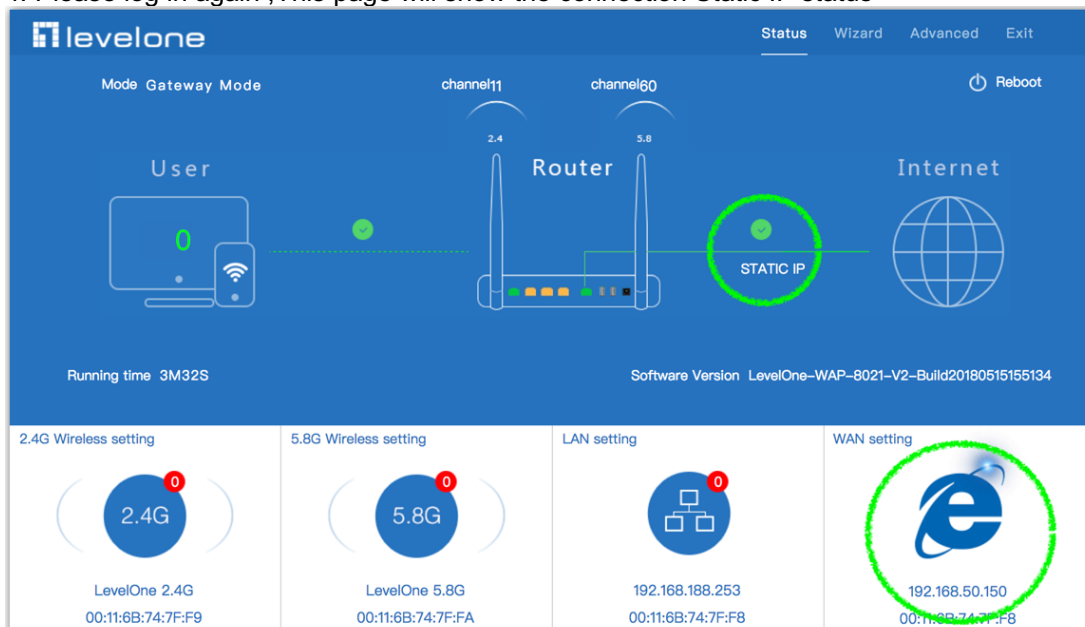
3. Please wait for the configuration to finish



The screenshot shows the 'Complete Settings' screen. At the top, there are three tabs: 'First: WAN Settings', 'Second: Wireless', and 'Third: Complete'. The 'Third: Complete' tab is active. Below the tabs, there is a large blue circle with a white dot in the center. Below the circle, there is a white box with the text 'Equipment is restarting, please wait.....'. Below the white box, there is a blue text message: 'Settings completed successfully.'

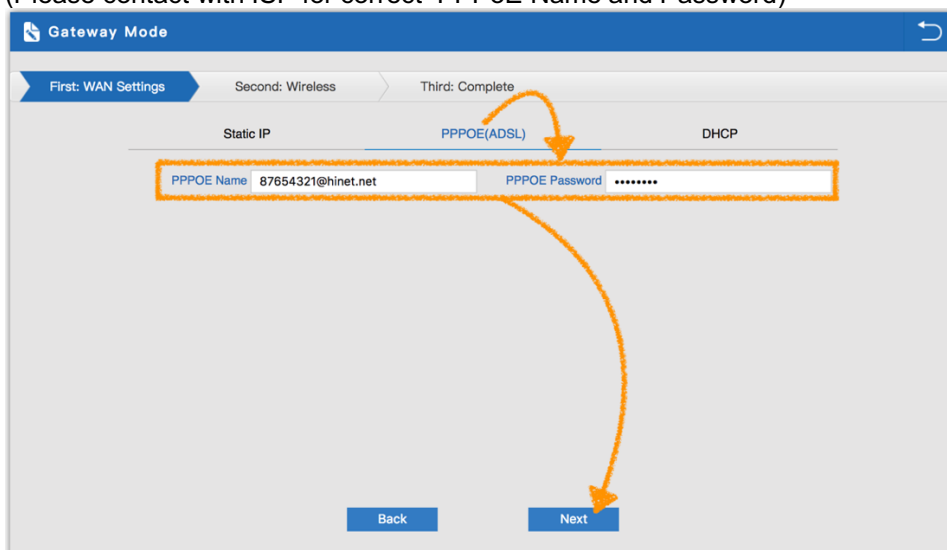


4. Please log in again ,This page will show the connection Static IP status

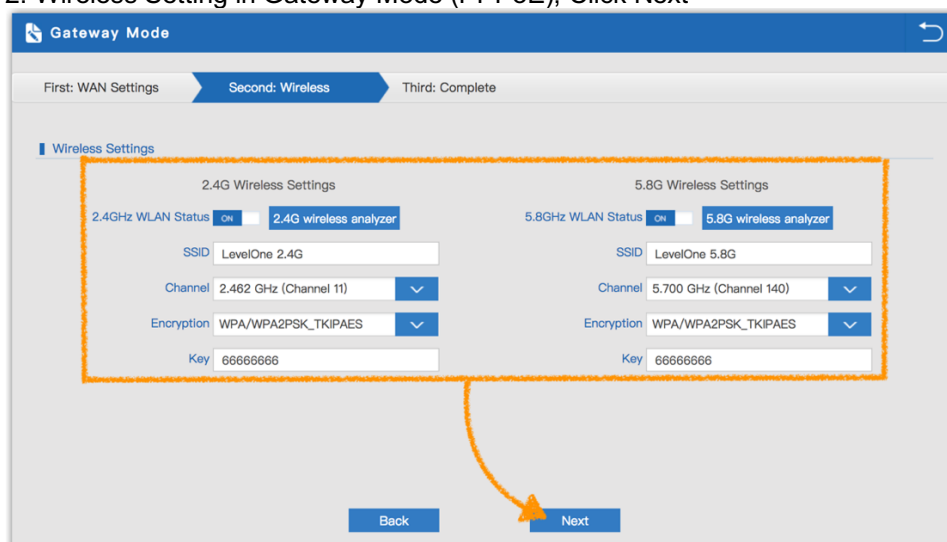


### 3.2.2 PPPoE(ADSL) setting in Gateway Mode :

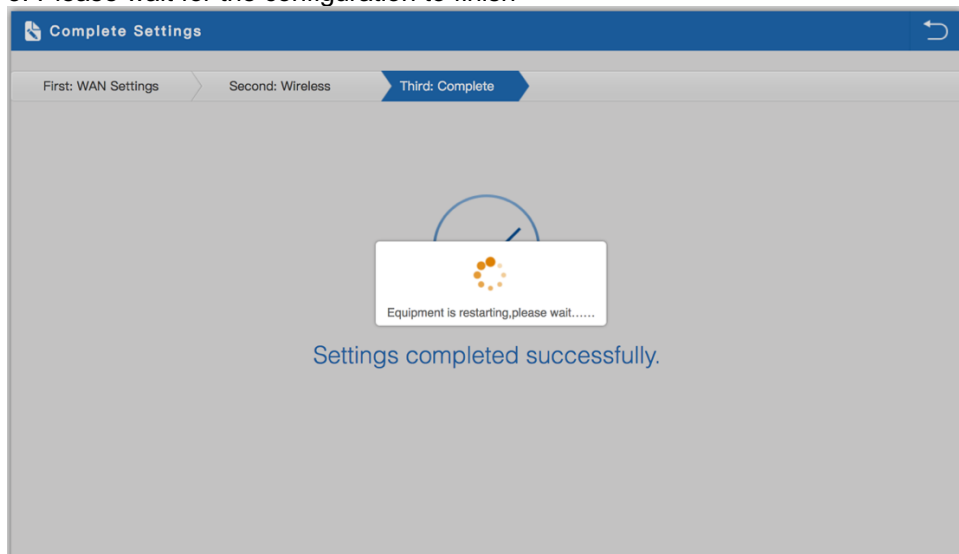
1. Sample PPPoE mode setting method, then click next to continue.  
(Please contact with ISP for correct PPPoE Name and Password)



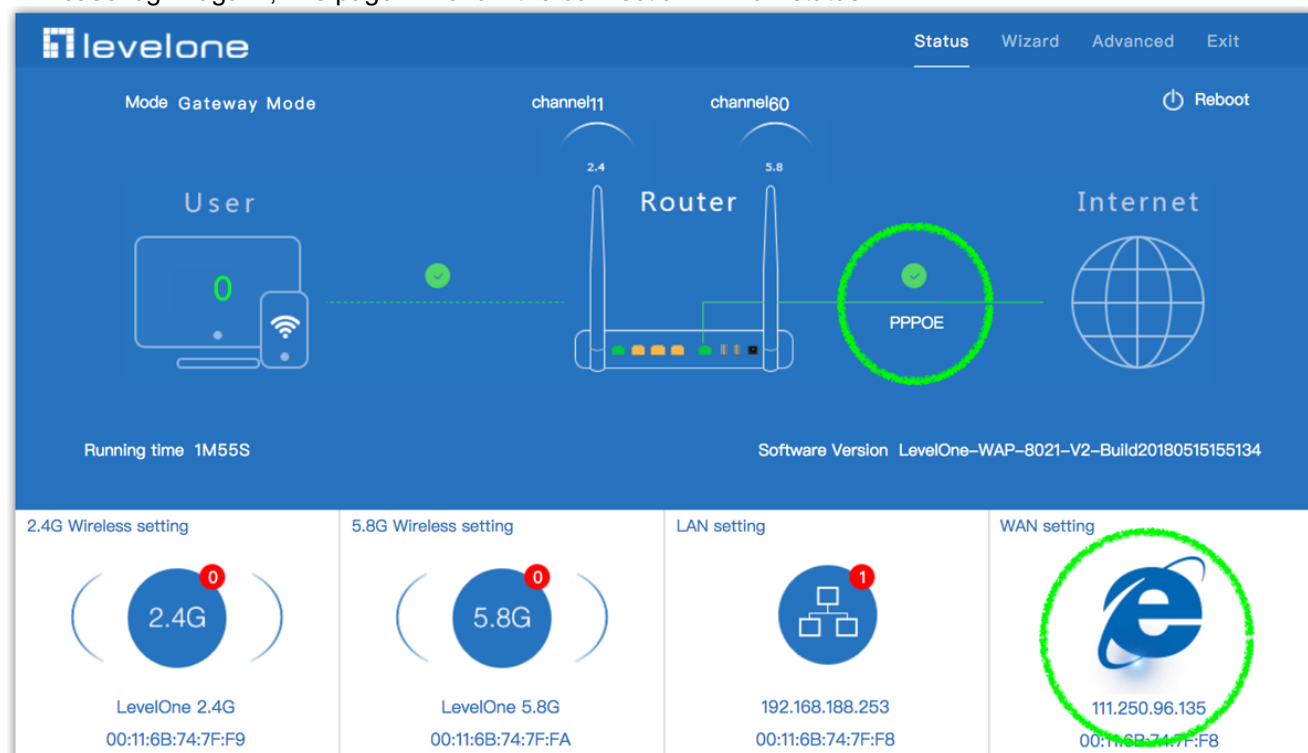
2. Wireless Setting in Gateway Mode (PPPoE), Click Next



### 3. Please wait for the configuration to finish



### 4. Please log in again ,This page will show the connection PPPoE status



### 3.2.3 DHCP setting in Gateway Mode :

1. Sample DHCP mode setting method, then click next to continue.  
(Please contact with ISP for correct IP address and DNS address. )

The screenshot shows the 'Gateway Mode' configuration interface. At the top, there are three tabs: 'First: WAN Settings', 'Second: Wireless', and 'Third: Complete'. Under 'First: WAN Settings', there are three options: 'Static IP', 'PPPOE(ADSL)', and 'DHCP'. The 'DHCP' option is selected and highlighted with a blue line. Below this, a message box states: 'The current access mode is DHCP, Please click next to configure.' At the bottom, there are 'Back' and 'Next' buttons. An orange arrow points from the 'DHCP' option to the 'Next' button.

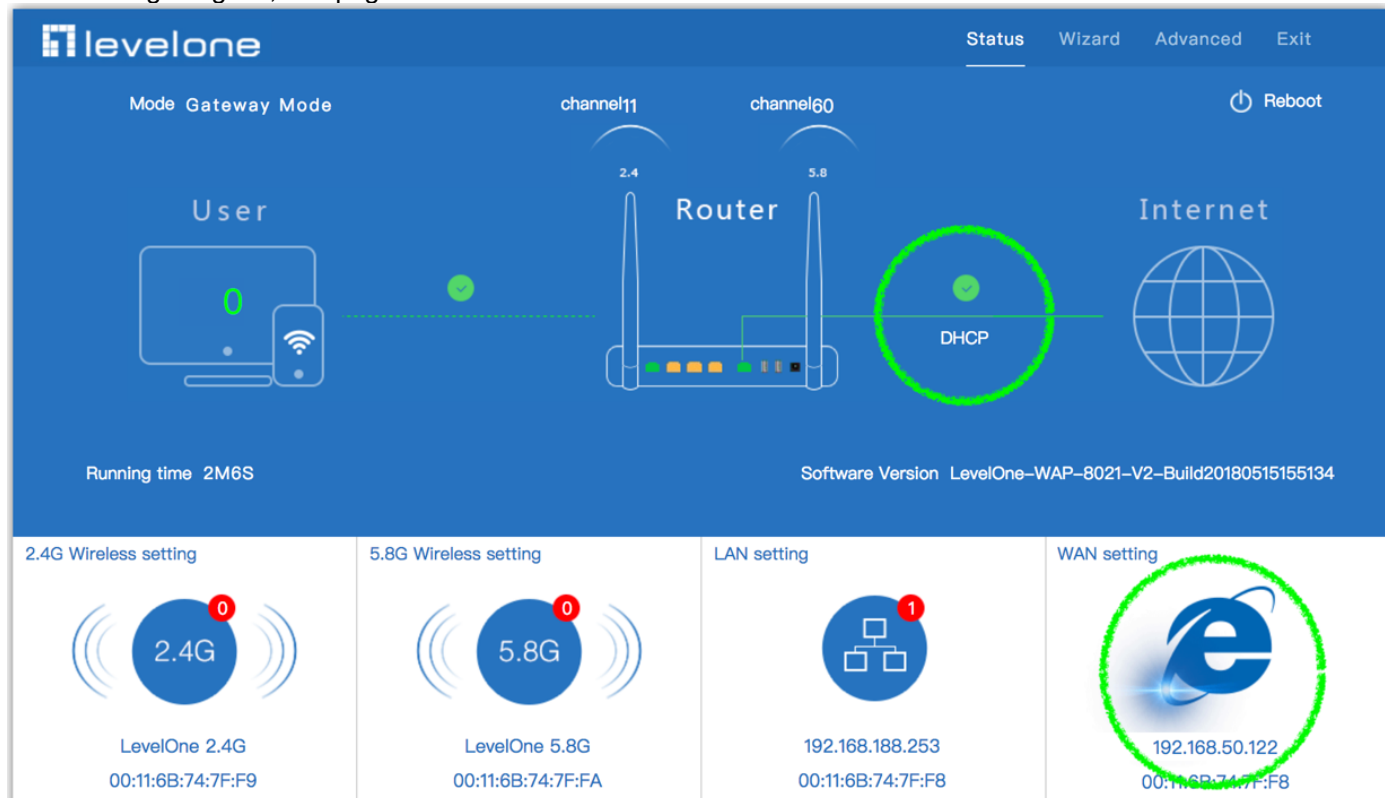
2. Wireless Setting in Gateway Mode (DHCP), Click Next

The screenshot shows the 'Gateway Mode' configuration interface, specifically the 'Second: Wireless' tab. It displays 'Wireless Settings' for both 2.4G and 5.8G. For 2.4G, the settings are: 2.4GHz WLAN Status (ON), 2.4G wireless analyzer, SSID (LevelOne 2.4G), Channel (2.462 GHz (Channel 11)), Encryption (WPA/WPA2PSK\_TKIPAES), and Key (66666666). For 5.8G, the settings are: 5.8GHz WLAN Status (ON), 5.8G wireless analyzer, SSID (LevelOne 5.8G), Channel (5.700 GHz (Channel 140)), Encryption (WPA/WPA2PSK\_TKIPAES), and Key (66666666). An orange box highlights these settings, and an orange arrow points from the box to the 'Next' button at the bottom.

3. Please wait for the configuration to finish

The screenshot shows the 'Complete Settings' interface. At the top, there are three tabs: 'First: WAN Settings', 'Second: Wireless', and 'Third: Complete'. The 'Third: Complete' tab is selected. In the center, there is a circular progress indicator and a message box that says: 'Equipment is restarting, please wait.....'. Below this, the text 'Settings completed successfully.' is displayed.

4. Please log in again ,This page will show the connection DHCP status



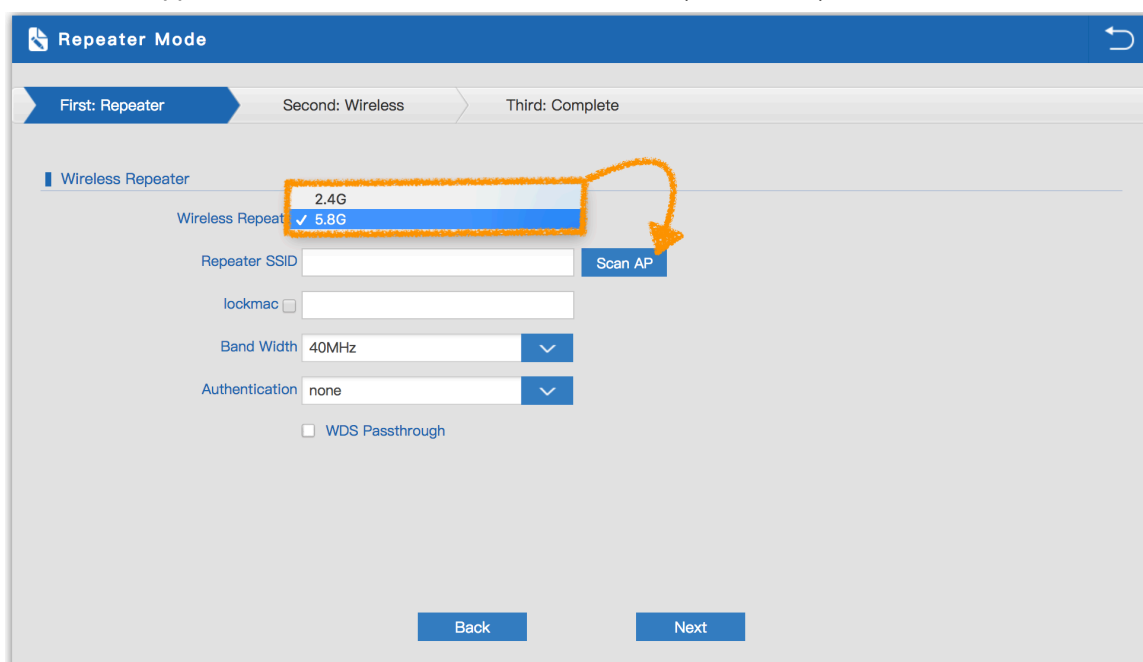
### 3.3 Repeater mode :



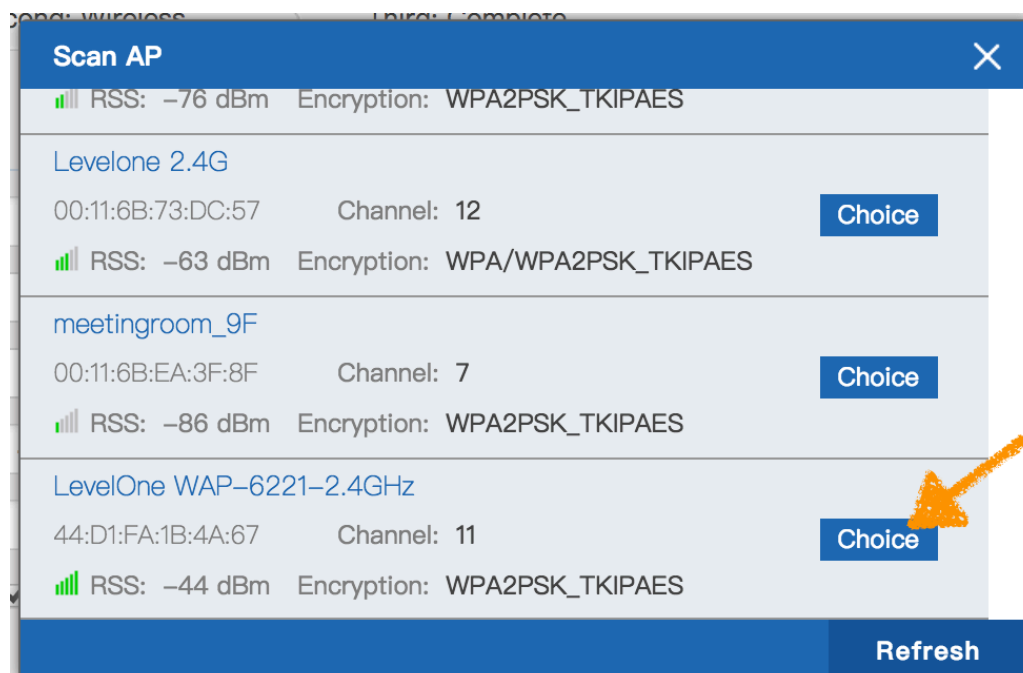
1. Can choose to relay the front-end 2.4G or 5.8G wireless signal to extend the wireless signal range.

Select the AP's SSID want to bridge, take "wireless 2.4G" for example, then input the AP's key, click Scan AP

**Note:** If the upper wireless device is not the same model (WAP-8021), Don't click to WDS Passthrough.



2. Please select WIFI SSID to connect



3. Enter the WIFI SSID password to be linked, When click Next

**Note:** If the upper wireless device is not the same model (WAP-8021), Don't click to WDS Passthrough.

Repeater Mode

First: Repeater   Second: Wireless   Third: Complete

Wireless Repeater

Wireless Repeater: 2.4G

Repeater SSID: LevelOne WAP-6221-2.4GHz [Scan AP]

lockmac ☐ 44:D1:FA:1B:4A:67

Band Width: 40MHz

Authentication: WPA2PSK\_TKIPAES

Key: 66666666

☐ WDS Passthrough

[Back] [Next]

4. If choose to relay the front-end 2.4G wireless signal to extend the wireless signal range. Can choose to enable or disable the 5.8G wireless broadcast of the WAP-8021 itself.

Repeater Mode

First: Repeater   Second: Wireless   Third: Complete

Wireless Settings

5.8G Wireless Settings

5.8GHz WLAN Status: ON [5.8G wireless analyzer]

SSID: LevelOne 5.8G

Channel: 5.700 GHz (Channel 140)

Encryption: WPA/WPA2PSK\_TKIPAES

Key: 66666666

[Back] [Next]

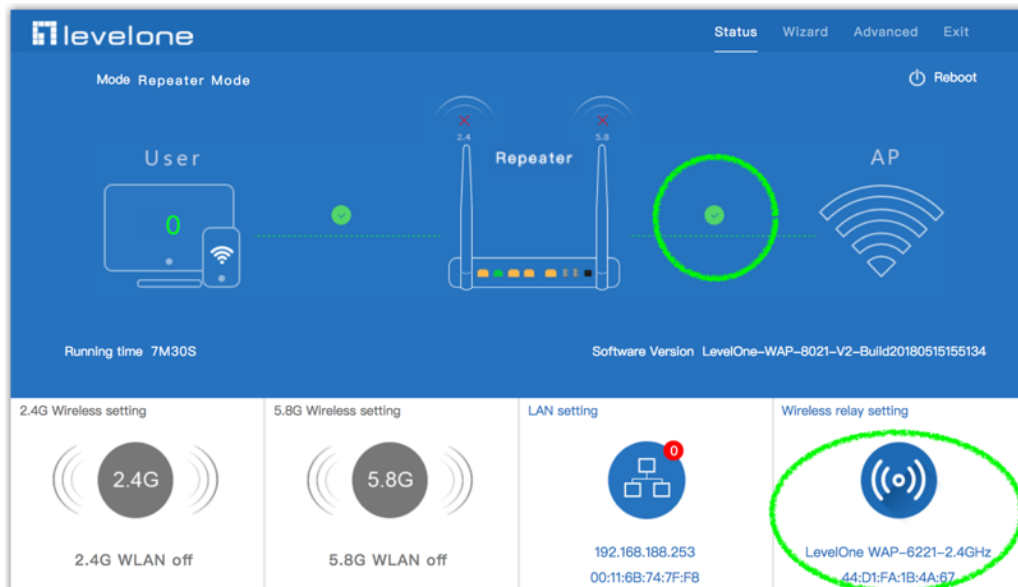
5. Click Return button, will back to Status, show Repeater mode data, show fail or success

Repeater Mode

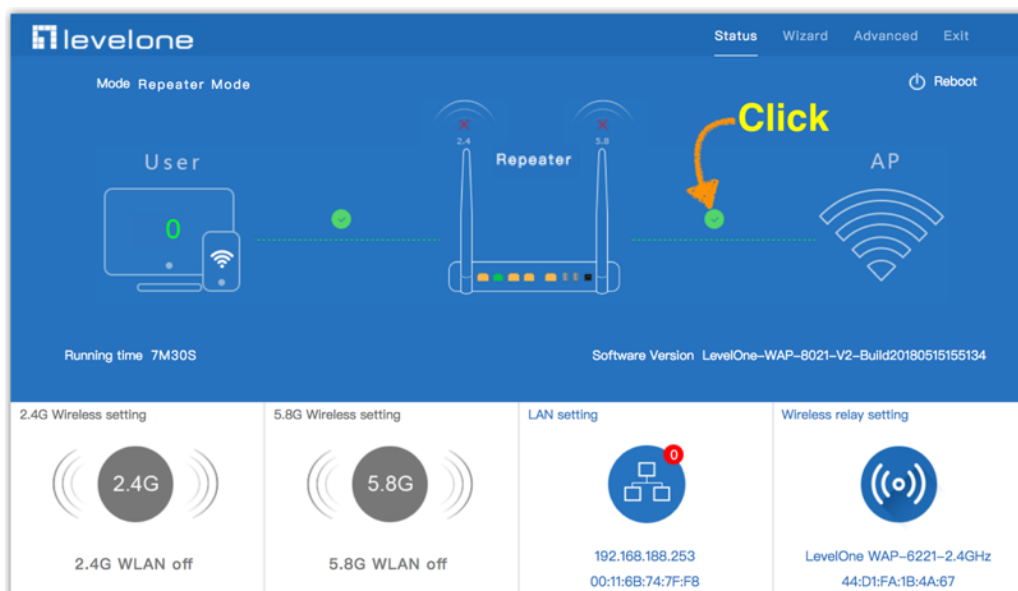
First: Repeater   Second: Wireless   Third: Complete

Settings completed successfully.

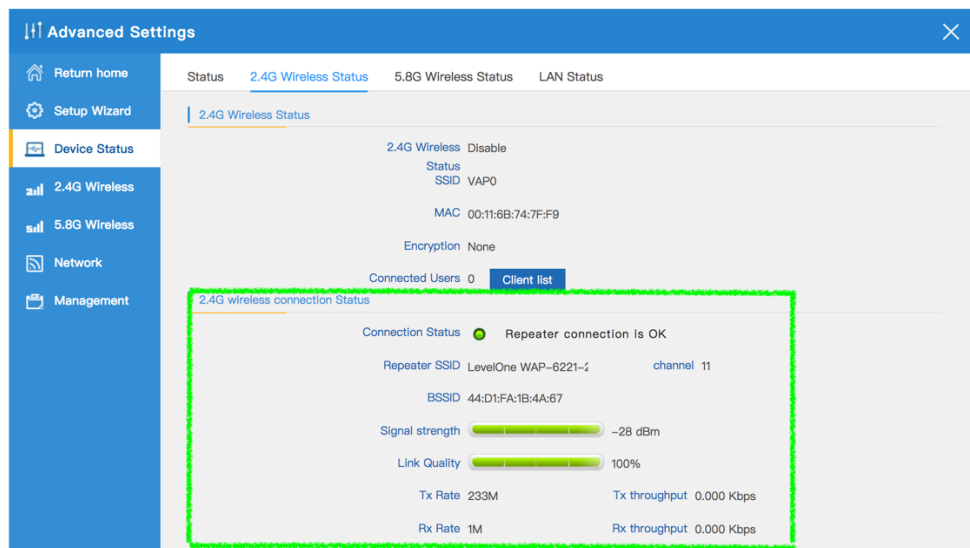
6. Check WIFI Repeater mode data (**NOTE:** In wifi repeater operation mode, the default is SSID disable.)



7. Click Status button



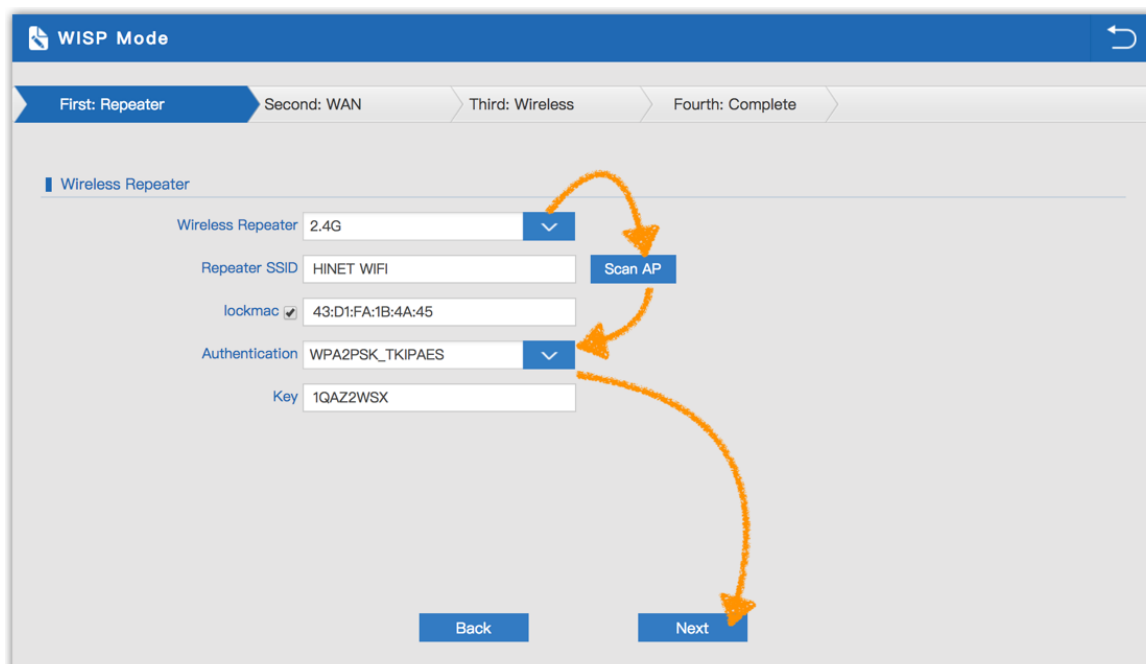
8. Check WIFI Repeater mode data



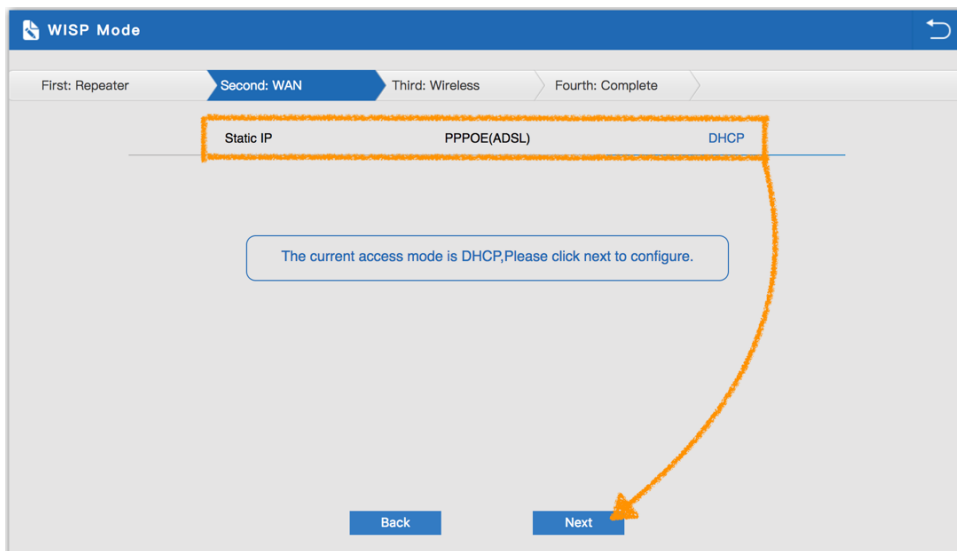
### 3.4 WISP Mode:



1. Select the AP's SSID want to bridge, take "wireless 2.4G" for example, then input the AP's key, click Scan AP. Enter the WIFI SSID password to be linked, When click Next



2. Before Click WISP Mode, confirm your ISP WIFI will be static IP, PPPoE, or DHCP: Then will pop up following picture after click it, Please choose the right WAN setting mode, then click next to continue.





3. take "Static IP" for example. (Please contact with ISP for correct IP address and DNS address)

The screenshot shows the 'WISP Mode' configuration interface. At the top, there are four tabs: 'First: Repeater', 'Second: WAN' (selected), 'Third: Wireless', and 'Fourth: Complete'. Below the tabs, there are three radio buttons: 'Static IP' (selected), 'PPPOE(ADSL)', and 'DHCP'. The 'Static IP' section contains four input fields: 'IP Address' (192.168.188.66), 'Subnet Mask' (255.255.255.0), 'Default Gateway' (192.168.188.253), and 'Primary DNS' (8.8.8.8). An orange arrow points from the 'Static IP' radio button to the 'IP Address' field. Another orange arrow points from the 'Next' button at the bottom right to the 'Next' button. At the bottom, there are 'Back' and 'Next' buttons.

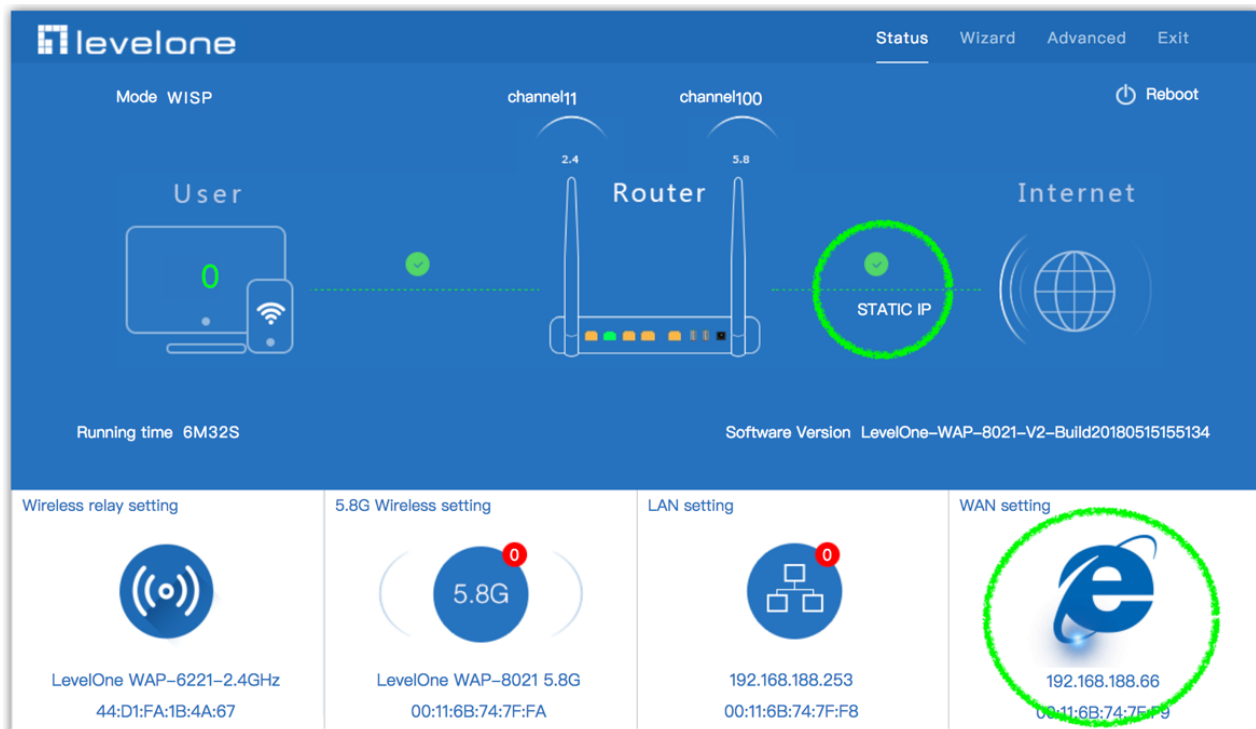
4. Configure the SSID and password the AP going to broadcast. If you have repeated 2.4G WIFI, in default setting, you are only allowed to broadcast 5.8G WIFI.)

The screenshot shows the 'WISP Mode' configuration interface. At the top, there are four tabs: 'First: Repeater', 'Second: WAN', 'Third: Wireless' (selected), and 'Fourth: Complete'. Below the tabs, there is a 'Wireless Settings' section. Under '5.8G Wireless Settings', there is a '5.8GHz WLAN Status' toggle set to 'ON' and a '5.8G wireless analyzer' button. Below this, there are four input fields: 'SSID' (LevelOne WAP-8021 5.8G), 'Channel' (5.700 GHz (Channel 140)), 'Encryption' (WPA/WPA2PSK\_TKIPAES), and 'Key' (66666666). An orange arrow points from the 'Key' field to the 'Next' button at the bottom right. At the bottom, there are 'Back' and 'Next' buttons.

5. Click Return button, will back to Status, show WISP mode data, show fail or success

The screenshot shows the 'Complete Settings' page. At the top, there are four tabs: 'First: Repeater', 'Second: WAN', 'Third: Wireless', and 'Fourth: Complete' (selected). Below the tabs, there is a large blue circle with a white center containing a gear icon and the text 'Equipment is restarting, please wait.....'. Below this, the text 'Settings completed successfully.' is displayed. At the bottom, there is a 'Return' button.

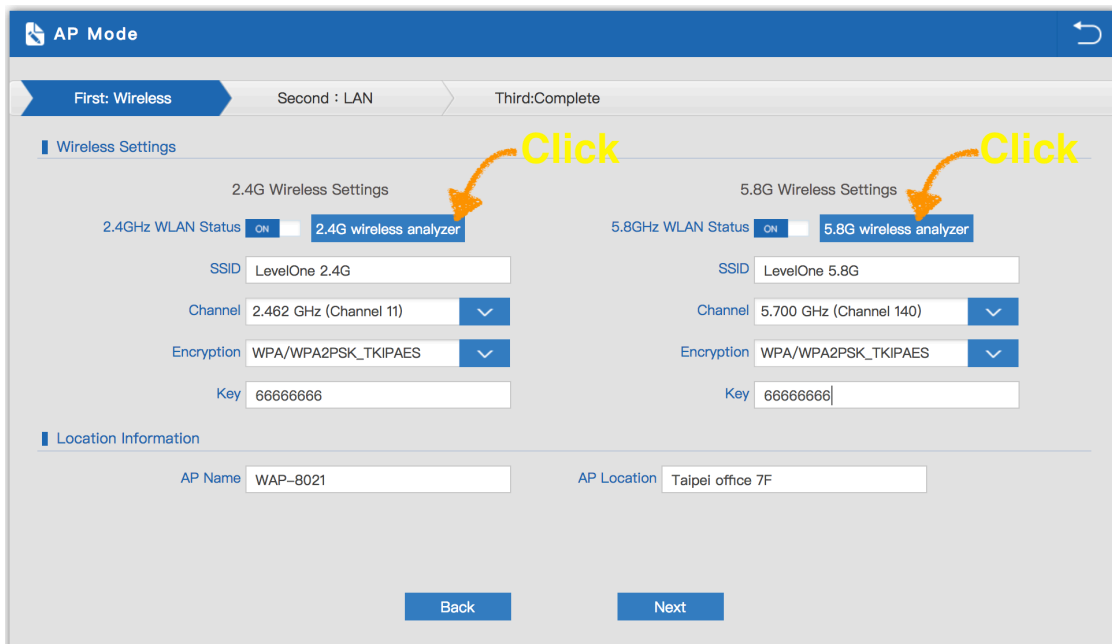
6. Check WISP Mode Status show fail or success



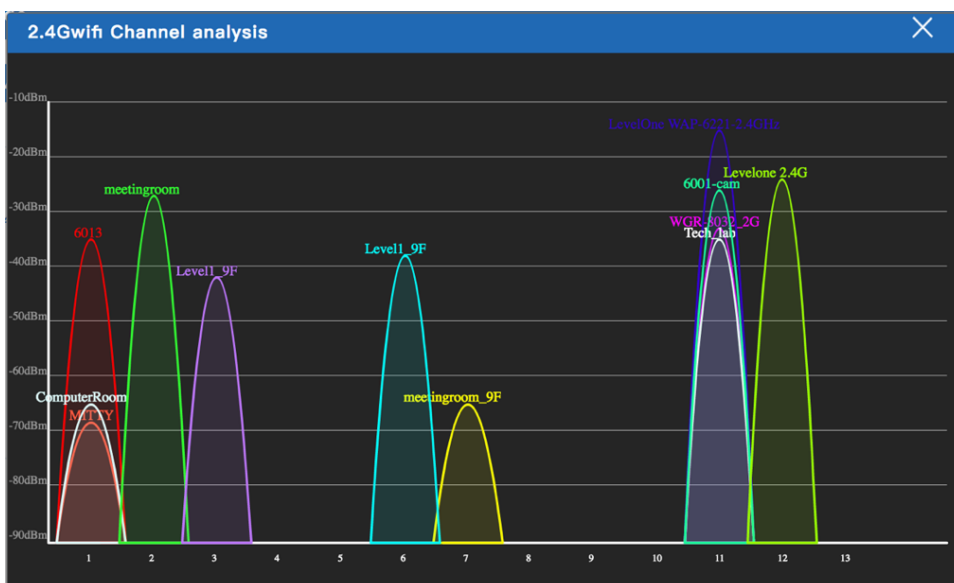
### 3.5 AP mode & Wireless analyzer :



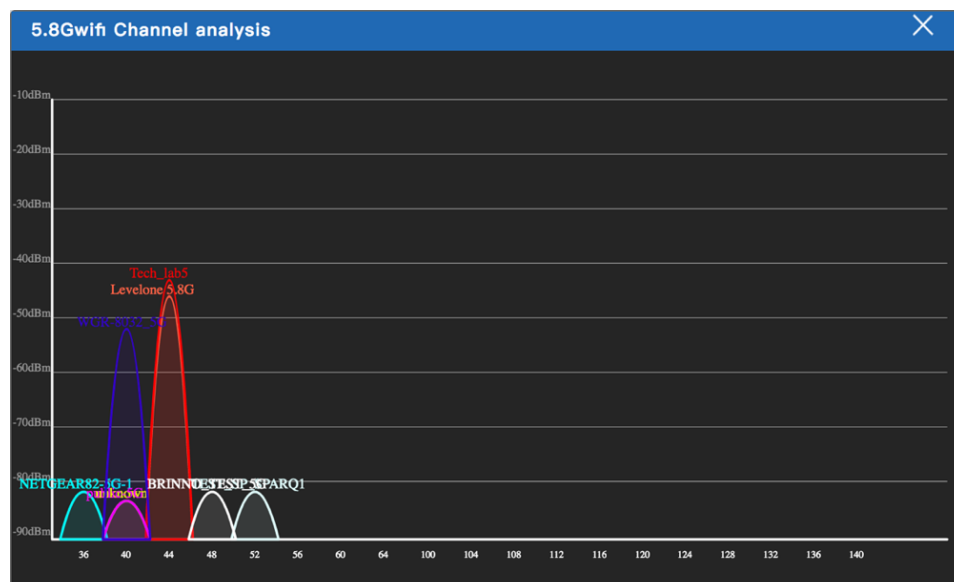
1.To make the WAP-8021 work in some clear channel, user can click wireless analyzer at first. Look for Unoccupied channel, then Wireless performance will be more stable. Picture showed as below.



2. Wireless analyzer Look for Unoccupied channel (2.4GHz)



### 3. Wireless analyzer Look for Unoccupied channel (5.8GHz)



4. Set the wireless data, AP Location info as required, then click next to continue and enter into LAN setting. After LAN setting, complete the AP mode configuration and back to Status.

AP Mode

First: Wireless Second: LAN Third: Complete

Wireless Settings

2.4GHz Wireless Settings

2.4GHz WLAN Status: ON 2.4G wireless analyzer

5.8GHz Wireless Settings

5.8GHz WLAN Status: ON 5.8G wireless analyzer

SSID: LevelOne 2.4G Channel: 2.462 GHz (Channel 11) Encryption: WPA/WPA2PSK\_TKIPAES Key: 66666666

SSID: LevelOne 5.8G Channel: 5.700 GHz (Channel 140) Encryption: WPA/WPA2PSK\_TKIPAES Key: 66666666

Location Information

AP Name: WAP-8021 AP Location: Taipei office 7F

Back Next

5. Set according to environmental requirements.

AP Mode

First: Wireless Second: LAN Third: Complete

LAN setting

Access Type: Static IP DHCP from Controller

Back Next

## 6.Demo Static IP setting

AP Mode

First: Wireless    **Second : LAN**    Third:Complete

LAN setting

Access Type: Static IP

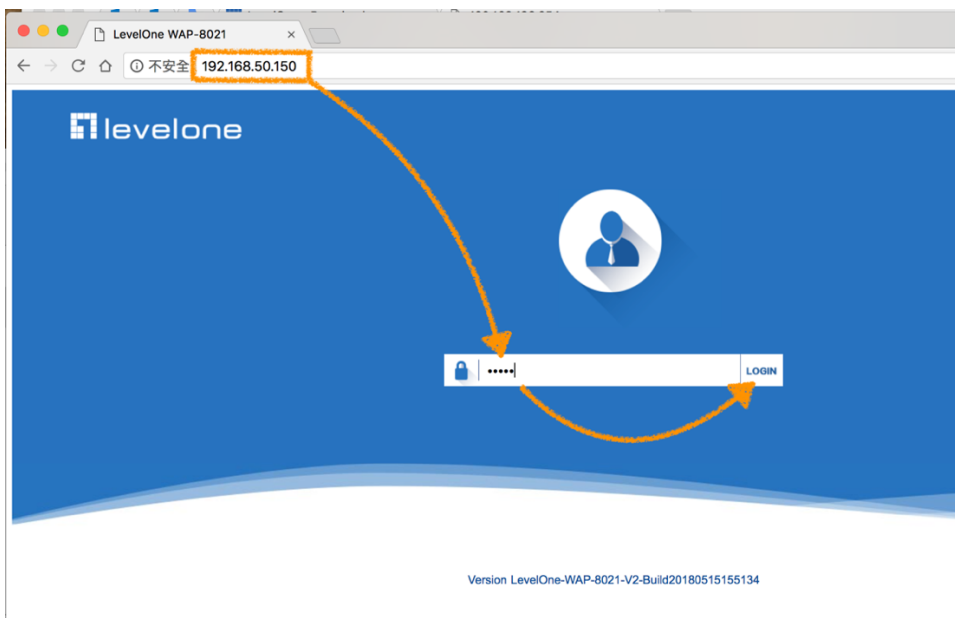
IP: 192.168.50.150

Subnet Mask: 255.255.255.0

Controller IP: 192.168.50.1

Back    Next

## 7.Re-login to WEB UI, Use the Static IP you just set.



## 8. Check AP Mode Status show fail or success.

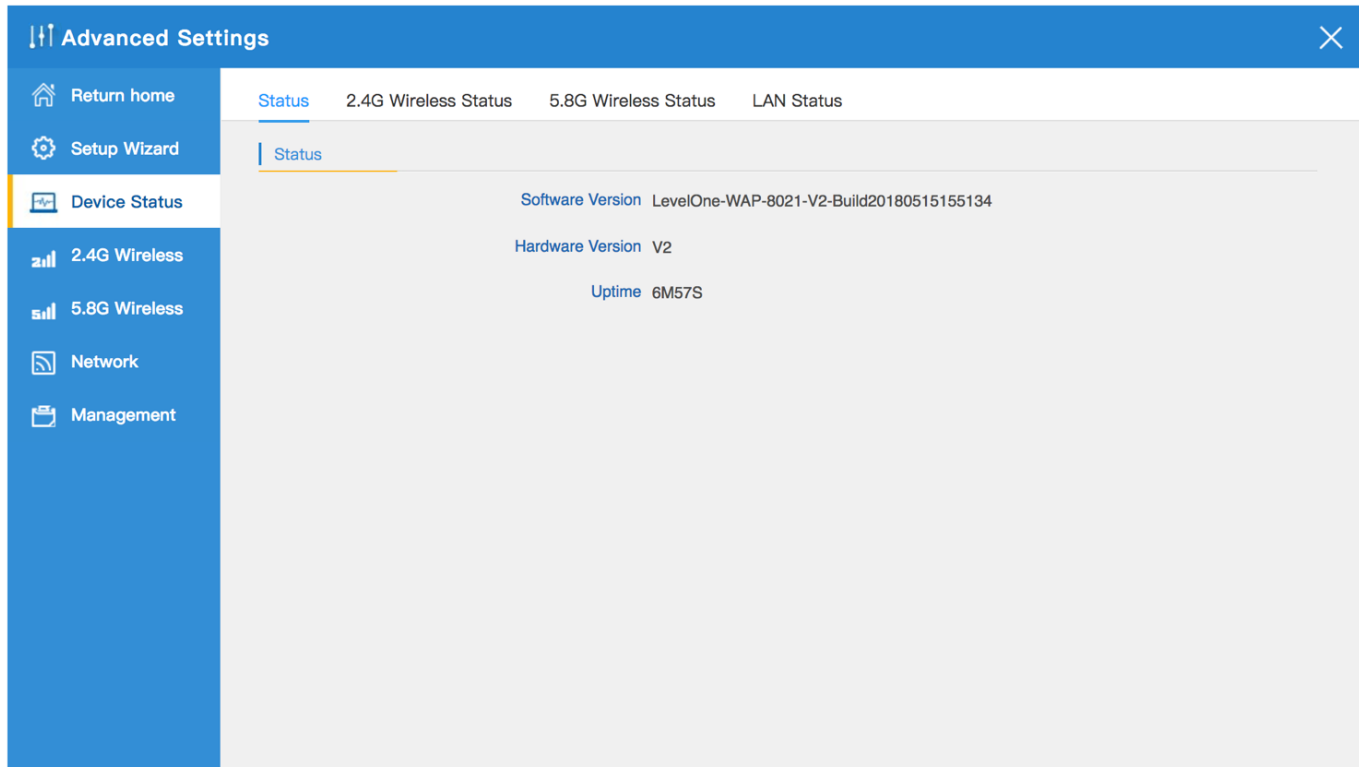


# Chapter 4 Advanced Setting

## 4.1 Device Status

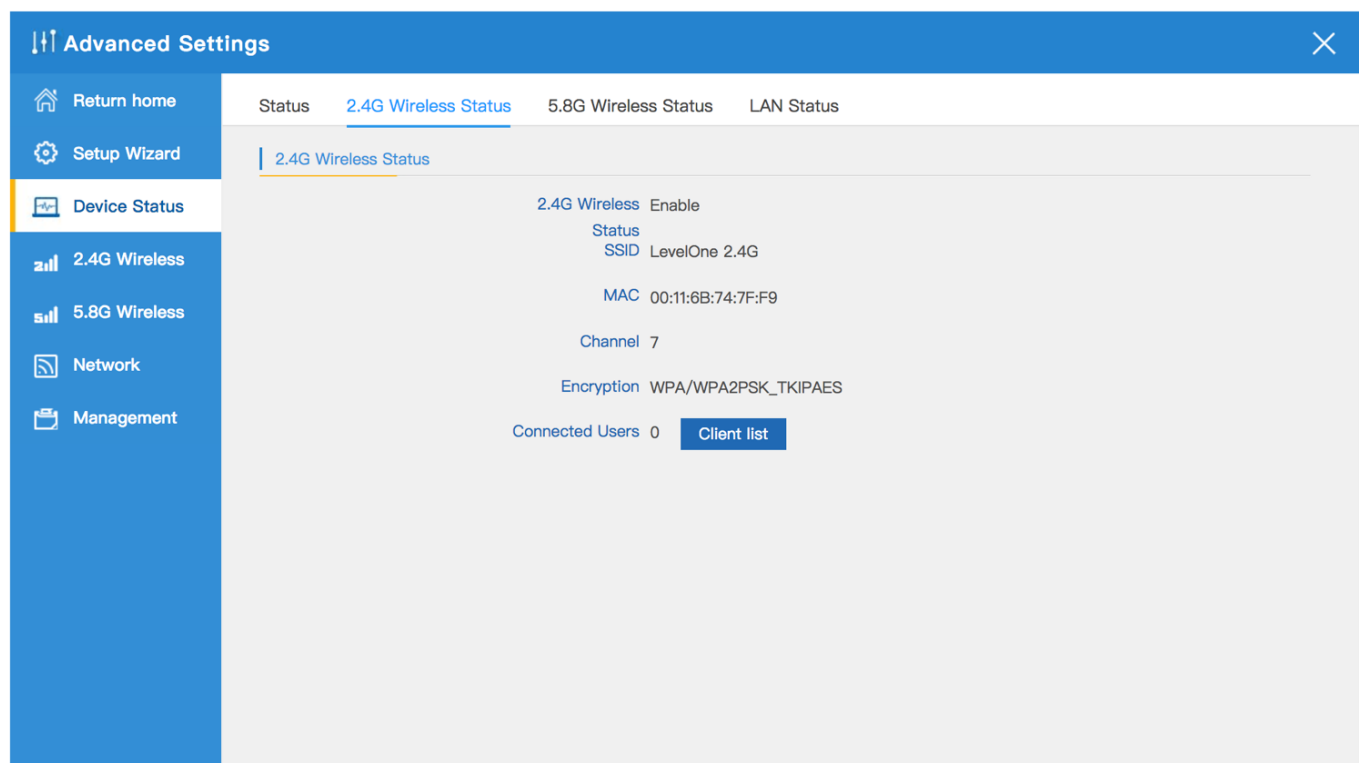
### 4.1.1 Status:

- Mainly to check the wireless AP's firmware version, hardware version, uptime info.



### 4.1.2 2.4G/5.8G wireless status:

- Show wireless AP's SSID, MAC address for WiFi, Channel, Encryption, Client List info.



### 4.1.3 LAN Status:

- Check wireless AP's IP address, Subnet Mask, LAN MAC address and other info showed in following picture

The screenshot shows the 'Advanced Settings' window with the 'LAN Status' tab selected. The left sidebar contains navigation options: Return home, Setup Wizard, Device Status, 2.4G Wireless, 5.8G Wireless, Network, and Management. The main content area displays the following information:

- Status: 2.4G Wireless Status, 5.8G Wireless Status, LAN Status (selected)
- LAN IP: 192.168.188.253
- Subnet Mask: 255.255.255.0
- MAC: 00:11:6B:74:7F:F8
- Controller IP: 192.168.188.1
- DHCP Status: Disable
- DHCP address range: 192.168.188.1 — 192.168.188.200
- Assigned IP: 0
- Client list button

## 4.2 2.4G Wireless

### 4.2.1 2.4G Basic Settings :

- Mainly to configure the wireless SSID, password, band width ,encryption, channel, Multi SSID.

The screenshot shows the 'Advanced Settings' window with the '2.4G Basic Settings' tab selected. The left sidebar contains navigation options: Return home, Setup Wizard, Device Status, 2.4G Wireless (selected), 5.8G Wireless, Network, and Management. The main content area displays the following configuration options:

- 2.4G Basic Settings, 2.4G Virtual AP, 2.4G Access Control, 2.4G Advanced Settings
- Wireless Basic Settings
- Wireless Status: ON (checked), 2.4G wireless analyzer button
- SSID: LevelOne 2.4G
- Broadcast SSID: Disable (selected), Enable
- WMM: Disable (selected), Enable
- Channel
- Band Width: 20MHz (selected)
- Channel: \* 2.442 GHz (Channel 7) (selected)
- Authentication
- Encryption: WPA/WPA2PSK\_TKIPAES (selected)
- Key: 66666666
- Apply button

## 4.2.2 2.4G Virtual AP :

- There are 3 virtual AP in 2.4G wireless, if need enable multi SSIDs, then users can configure it showed in following picture.

The screenshot shows the 'Advanced Settings' window with the '2.4G Virtual AP' tab selected. The left sidebar contains navigation links: Return home, Setup Wizard, Device Status, 2.4G Wireless (highlighted), 5.8G Wireless, Network, and Management. The main content area has tabs for '2.4G Basic Settings', '2.4G Virtual AP', '2.4G Access Control', and '2.4G Advanced Settings'. Under the '2.4G Virtual AP' tab, there are three sections: 'Virtual AP1', 'Virtual AP2', and 'Virtual AP3'. The 'Virtual AP1' section is active and shows the following configuration: 'Wireless Status' is set to 'ON' with a toggle switch; 'SSID' is 'Virtual AP1'; 'Broadcast SSID' has radio buttons for 'Disable' and 'Enable' (selected); 'WMM' has radio buttons for 'Disable' and 'Enable' (selected); 'Encryption' is set to 'WPA/WPA2PSK\_TKIPAES' with a dropdown arrow; and 'Key' is '1QAZ2wsx3edc4rfv'. An 'Apply' button is at the bottom.

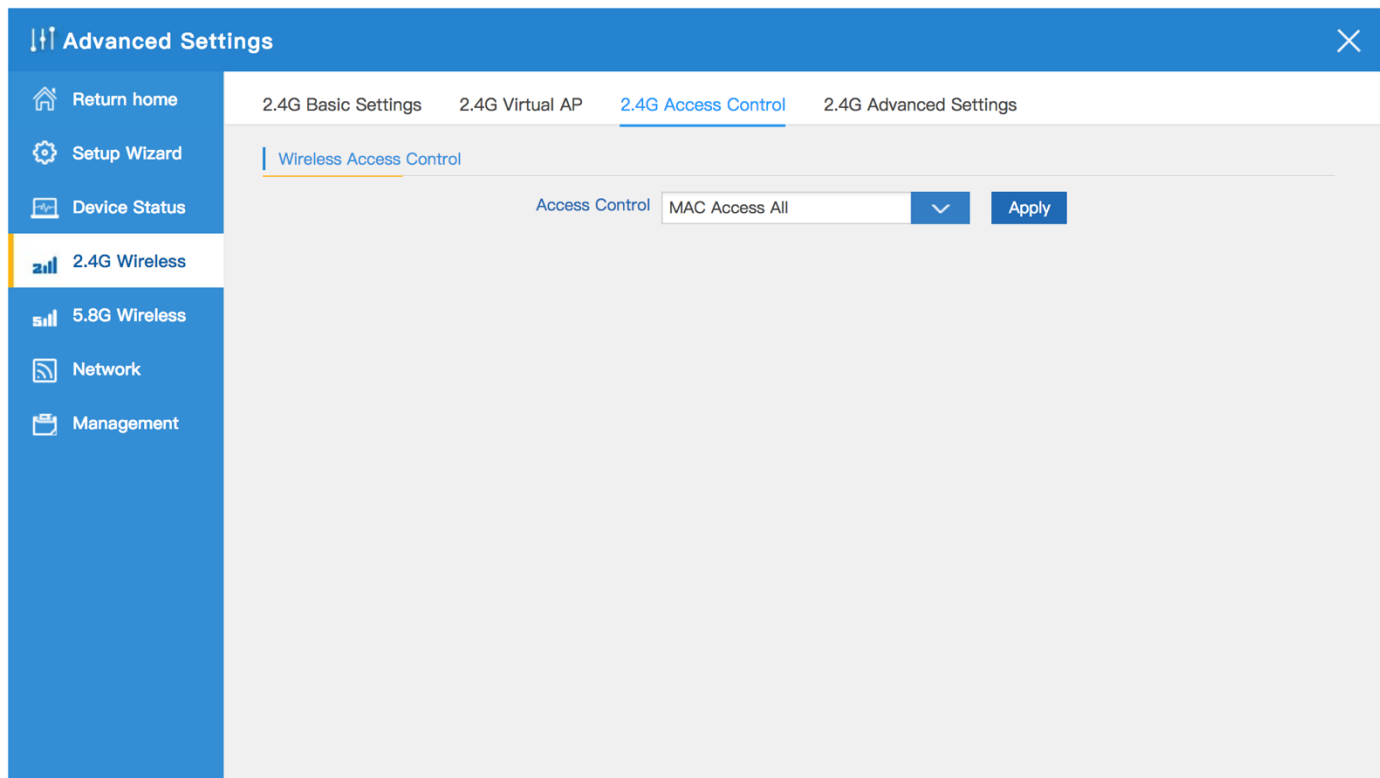
## 4.2.3 2.4G Access Control :

- Allow or deny the users access into this wireless AP based on MAC address.

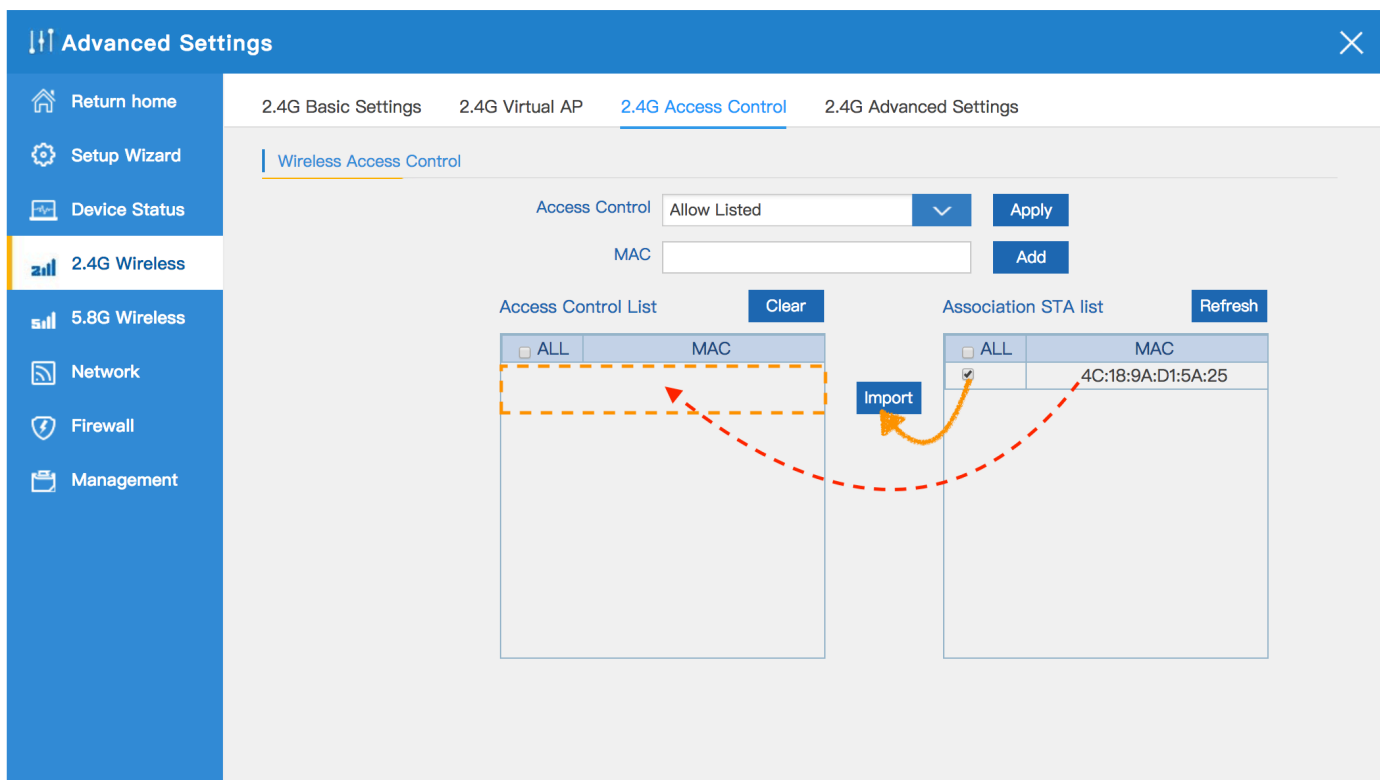
The screenshot shows the 'Advanced Settings' window with the '2.4G Access Control' tab selected. The left sidebar is the same as in the previous screenshot, with '2.4G Wireless' highlighted. The main content area has tabs for '2.4G Basic Settings', '2.4G Virtual AP', '2.4G Access Control', and '2.4G Advanced Settings'. Under the '2.4G Access Control' tab, there is a 'Wireless Access Control' section. The 'Access Control' dropdown menu is open, showing three options: 'MAC Access All' (selected with a checkmark), 'Allow Listed', and 'Deny Listed'. An 'Apply' button is to the right of the dropdown.



2.Allow all the users access into this wireless AP



3.Only users who have joined the MAC address list can access the wireless AP. The following is a demonstration of teaching . Add the user MAC address in the list to the access control list



4. After the user's MAC address is added to the access control list, Click Apply. After setting is completed, it will start to allow users access to this wireless AP function.

**Advanced Settings**

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

**Wireless Access Control**

Access Control: Allow Listed

MAC:

Access Control List

ALL	MAC
<input checked="" type="checkbox"/>	4C:18:9A:D1:5A:25

Association STA list

ALL	MAC
-----	-----

5. Users who have joined the MAC address list are denied access to the wireless AP. The following is a demonstration of teaching . Add the user MAC address in the list to the access control list

**Advanced Settings**

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

**Wireless Access Control**

Access Control: Deny Listed

MAC:

Access Control List

ALL	MAC
-----	-----

Association STA list

ALL	MAC
<input checked="" type="checkbox"/>	4C:18:9A:D1:5A:25

6. After the user's MAC address is added to the access control list, Click Apply. After setting is completed, it will start to deny users access to this wireless AP function

**Advanced Settings**

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

**Wireless Access Control**

Access Control: Deny Listed

MAC:

Access Control List

ALL	MAC
<input checked="" type="checkbox"/>	4C:18:9A:D1:5A:25

Association STA list

ALL	MAC
-----	-----

#### 4.2.4 2.4G Advanced Settings :

- In this page, will show the regional, mode, RF Power, Max user access...

**Advanced Settings**

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

**2.4G Advanced Settings**

Regional: U.S.A

MODE: 802.11N/G

RF Output Power: 100%

Packet Threshold: 2346 (256-2346)

RTS Threshold: 2346 (0-2347)

Ack Timeout control: 64 (0-255)us

Beacon interval: 100 (100-1024)ms

MAX User: 64 (Range 0-64 0 not limited)

Coverage Threshold: -90 (-95dBm~-65dBm)

Aggregation: ☒ ON   Short GI: ☒ ON   User isolation: ☐ OFF

## 4.3 5.8G Wireless

### 4.3.1 5.8G Basic Settings :

- Mainly to configure the wireless SSID, password, band width ,encryption, channel, Multi SSID.

The screenshot shows the 'Advanced Settings' window with the '5.8G Basic Settings' tab selected. The left sidebar contains navigation options: Return home, Setup Wizard, Device Status, 2.4G Wireless, 5.8G Wireless (highlighted), Network, Firewall, and Management. The main content area is divided into sections: 'Wireless Basic Settings' (with 'Wireless Status' set to ON and a '5.8G wireless analyzer' button), 'Channel' (with 'Band Width' set to 80MHz and 'Channel' set to \* 5.220 GHz (Channel 44)), and 'Encryption' (with 'Encryption' set to WPA/WPA2PSK\_TKIPAES and 'Key' set to 66666666). An 'Apply' button is at the bottom.

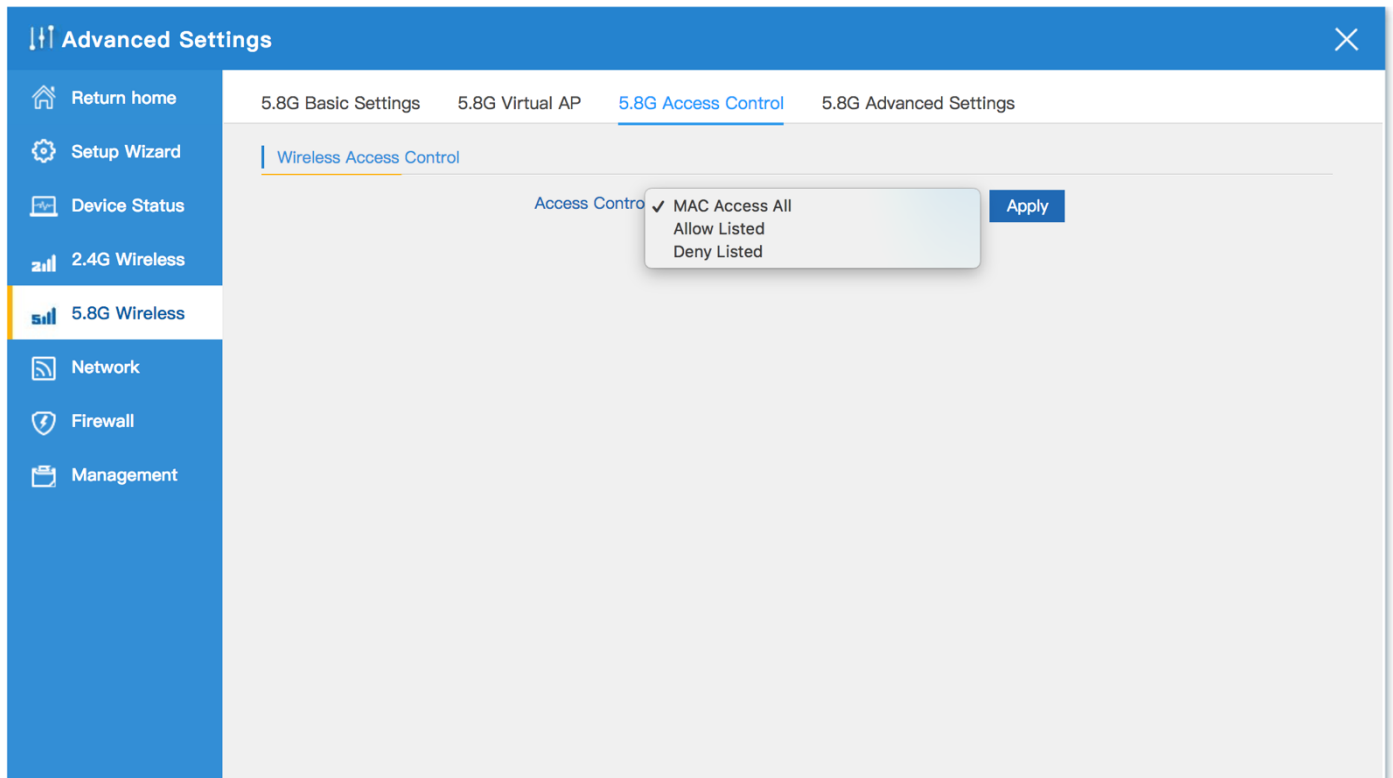
### 4.3.2 5.8G Virtual AP :

- There are 3 virtual AP in 5.8G wireless, if need enable multi SSIDs, then users can configure it showed in following picture

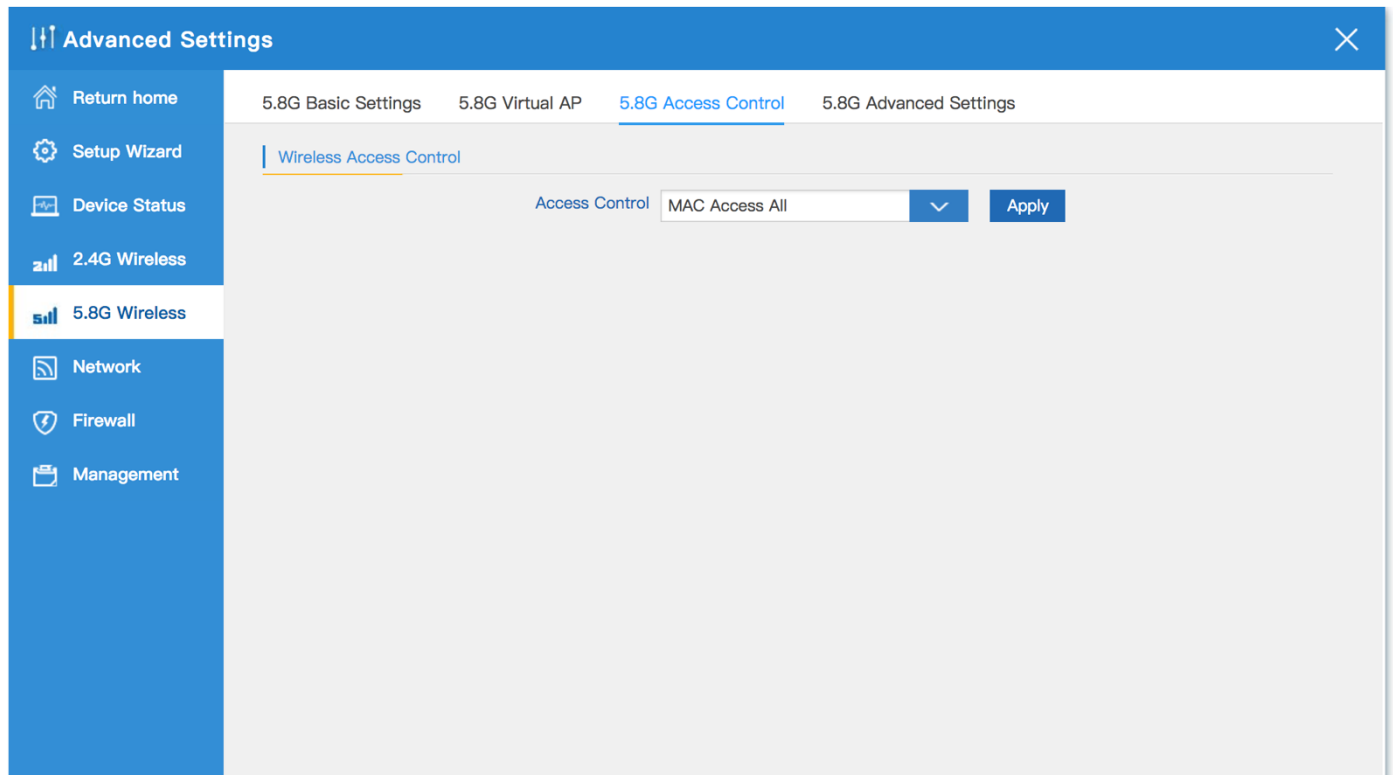
The screenshot shows the 'Advanced Settings' window with the '5.8G Virtual AP' tab selected. The left sidebar is the same as the previous screenshot. The main content area has three tabs: 'Virtual AP1', 'Virtual AP2', and 'Virtual AP3'. The 'Virtual AP1' tab is active, showing configuration for 'Wireless Status' (ON), 'SSID' (5.8G Virtual AP1), 'Broadcast SSID' (Enable), 'WMM' (Enable), 'Encryption' (WPA/WPA2PSK\_TKIPAES), and 'Key' (66666666). An 'Apply' button is at the bottom.

### 4.3.3 5.8G Access Control :

1.Allow or deny the users access into this wireless AP based on MAC address.



2.Allow all the users access into this wireless AP



3. Only users who have joined the MAC address list can access the wireless AP. The following is a demonstration of teaching . Add the user MAC address in the list to the access control list.

**Advanced Settings**

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

**Wireless Access Control**

Access Control: Allow Listed [v] [Apply]

MAC: [ ] [Add]

**Access Control List** [Clear]

ALL	MAC
-----	-----

**Association STA list** [Refresh]

ALL	MAC
<input checked="" type="checkbox"/>	4C:18:9A:D1:5A:25

[Import]

4. After the user's MAC address is added to the access control list, Click Apply. After setting is completed, it will start to allow users access to this wireless AP function

**Advanced Settings**

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

**Wireless Access Control**

Access Control: Allow Listed [v] [Apply]

MAC: [ ] [Add]

**Access Control List** [Clear]

ALL	MAC
<input checked="" type="checkbox"/>	4C:18:9A:D1:5A:25

**Association STA list** [Refresh]

ALL	MAC
-----	-----

[Import]

5. Users who have joined the MAC address list are denied access to the wireless AP. The following is a demonstration of teaching . Add the user MAC address in the list to the access control list

The screenshot shows the 'Advanced Settings' window with the '5.8G Access Control' tab selected. The 'Wireless Access Control' sub-tab is active. The 'Access Control' dropdown is set to 'Deny Listed'. Below it, the 'MAC' input field is empty, and the 'Add' button is visible. The 'Access Control List' table is currently empty, with a dashed orange box highlighting the header row (ALL, MAC). The 'Association STA list' table contains one entry with MAC address '4C:18:9A:D1:5A:25'. A red dashed arrow points from this entry to the 'Import' button, which then points to the 'Access Control List' table. The 'Apply' button is also visible next to the 'Access Control' dropdown.

Advanced Settings

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

Wireless Access Control

Access Control Deny Listed Apply

MAC Add

Access Control List Clear

Association STA list Refresh

ALL MAC

ALL MAC

4C:18:9A:D1:5A:25

Import

6. After the user's MAC address is added to the access control list, Click Apply. After setting is completed, it will start to deny users access to this wireless AP function

The screenshot shows the same 'Advanced Settings' window. The 'Access Control List' table now contains one entry with MAC address '4C:18:9A:D1:5A:25'. A red dashed arrow points from this entry to the 'Import' button, which then points to the 'Access Control List' table. The 'Apply' button is highlighted with a red dashed arrow, indicating it should be clicked. The 'Association STA list' table remains empty.

Advanced Settings

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

Wireless Access Control

Access Control Deny Listed Apply

MAC Add

Access Control List Clear

Association STA list Refresh

ALL MAC

ALL MAC

4C:18:9A:D1:5A:25

Import

### 4.3.4 2.4G Advanced Settings :

- In this page, will show the regional, mode, RF Power, Max user access...

Advanced Settings

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

5.8G Advanced Settings

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

MODE: 802.11AN/AC

RF Output Power: 100%

Packet Threshold: 2346 (256-2346)

RTS Threshold: 2346 (0-2347)

Ack Timeout control: 64 (0-255)us

Beacon Interval: 100 (100-1024)ms

MAX User: 64 (Range 0-64 0 not limited)

Coverage Threshold: -90 (-95dBm--65dBm)

Aggregation: ON Short GI: ON User isolation: OFF

Apply

## Enable the status of Gateway Mode or WISP Mode



## 4.4 Network

### 4.4.1 LAN Settings :

1. Set the specified device retention IP for easy management. The following is a demonstration of teaching .

Advanced Settings

LAN Settings VLAN WAN Settings WAN advanced settings

LAN Settings

IP: 192.168.188.253

Subnet Mask: 255.255.255.0

DHCP Status: ON

DHCP Client IP: 192.168.188.2

DHCP Client IP Start: 192.168.188.200

DHCP Client IP End: 192.168.188.200

Lease Time(hour): 12 (1-360)

IP-MAC Bind

IP-MAC Bind: [ ] - [ ] Add Scan Clear

ALL	IP	MAC

Apply



## 2.Click Choice

The screenshot shows the 'Advanced Settings' window with the 'LAN Settings' tab selected. A 'Client List' dialog box is open, displaying a table with two columns: 'MAC' and 'IP'. The table contains two entries:

MAC	IP	Choice
4C:18:9A:D1:5A:25	192.168.188.22	Choice
38:C9:86:38:81:2C	192.168.188.197	Choice

An orange arrow points to the 'Choice' button for the second entry. The dialog box also has a 'Refresh' button at the bottom right. In the background, the 'IP-MAC Bind' section is visible, showing an 'Add' button and a 'Scan' button.

## 3.Add the user MAC address in the list to the access control list . Completed the reserved IP settings

The screenshot shows the 'Advanced Settings' window with the 'LAN Settings' tab selected. The 'IP-MAC Bind' section is active, displaying a table with two columns: 'IP' and 'MAC'. The table contains one entry:

IP	MAC
192.168.188.197	38:C9:86:38:81:2C

An orange arrow points from the 'Add' button to the 'Apply' button. The 'Add' button is located next to the 'IP-MAC Bind' section. The 'Apply' button is located at the bottom right of the 'IP-MAC Bind' section. The 'IP-MAC Bind' section also has a 'Scan' button and a 'Clear' button.

#### 4.4.2 VLAN :

- Please confirm before you can use ,Need support IEEE 802.1Q and VLAN Tagging Managed Switch, Specify WiFi SSID or WAN/LAN Port for WAP-8021 , corresponding to the VLAN-ID (3-4094).

Advanced Settings

LAN Settings **VLAN** WAN Settings WAN advanced settings

VLAN

VLAN-ID(3-4094)	LAN1	LAN2	LAN3	LAN4	WAN	AP	2.4G VAP1	VAP2	VAP3	5.8G VAP1	VAP2	VAP3
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Apply

#### 4.4.3 WAN Settings :

1. Please check with the ISP first how to access the Internet , The following is a demonstration of Static IP teaching .

Advanced Settings

LAN Settings VLAN **WAN Settings** WAN advanced settings

Static IP PPPOE(ADSL) DHCP

IP Address 192.168.50.150

Subnet Mask 255.255.255.0

Default Gateway 192.168.50.1

MTU 1500 (1400-1500)

Primary DNS 8.8.8.8

Secondary DNS 8.8.4.4

Apply

2.The following is a demonstration of PPPoE teaching .

The screenshot shows the 'Advanced Settings' window with the 'WAN Settings' tab selected. The 'PPPOE(ADSL)' option is highlighted with an orange arrow. The configuration fields are as follows:

Field	Value
PPPOE Name	87654321@hinet.net
PPPOE Password	*****
MTU	1445 (1400-1492)
Manually set DNS	<input checked="" type="checkbox"/>
Primary DNS	8.8.8.8
Secondary DNS	8.8.4.4

An orange arrow points from the 'PPPOE(ADSL)' tab to the 'Apply' button at the bottom right.

3.The following is a demonstration of DHCP teaching .

The screenshot shows the 'Advanced Settings' window with the 'WAN Settings' tab selected. The 'DHCP' option is highlighted with an orange arrow. The configuration fields are as follows:

Field	Value
MTU	1500 (1400-1500)
Manually set DNS	<input checked="" type="checkbox"/>
Primary DNS	8.8.8.8
Secondary DNS	8.8.4.4

An orange arrow points from the 'DHCP' tab to the 'Apply' button at the bottom right.

#### 4.4.4 WAN advanced settings:

Internet security does not recommend enable Ping Access on WAN to prevent interested people from knowing the real IP address

The screenshot shows the 'Advanced Settings' window with the 'WAN advanced settings' tab selected. The left sidebar contains navigation links: Return home, Setup Wizard, Device Status, 2.4G Wireless, 5.8G Wireless, Network (highlighted), Firewall, and Management. The main content area has tabs for LAN Settings, VLAN, WAN Settings, and WAN advanced settings. Under 'WAN advanced settings', there are several options: 'MAC clone' (disabled), 'Enable Web Server Access on WAN' (checked) with a 'Web Port' of 8080, 'Enable uPnP' (checked), 'Enable IGMP Proxy' (disabled), 'Enable Ping Access on WAN' (disabled), 'Enable IPsec pass through on VPN connection' (checked), 'Enable PPTP pass through on VPN connection' (checked), and 'Enable L2TP pass through on VPN connection' (checked). A 'Scan' button is next to the MAC clone field, and an 'Apply' button is at the bottom.

## 4.5 Firewall

### 4.5.1 IP/Port Filtering :

1.Factory default value is disable, Can be set to whitelist or blacklist. The following will begin to introduce how to set the enable function

The screenshot shows the 'Advanced Settings' window with the 'IP/Port Filtering' tab selected. The left sidebar is the same as in the previous screenshot, but 'Firewall' is now highlighted. The main content area has tabs for IP/Port Filtering, MAC Filtering, URL Filtering, Port Forwarding, and DMZ Host. Under 'IP/Port Filtering', there is a dropdown menu for 'IP Filtering' with options: Disable (selected), Black List, and White List. An 'Apply' button is to the right of the dropdown.

**2.Black List** : IP Address that can be specified as a separate or range , and then specifies the port range (1~65535) and protocol(TCP/UDP) .

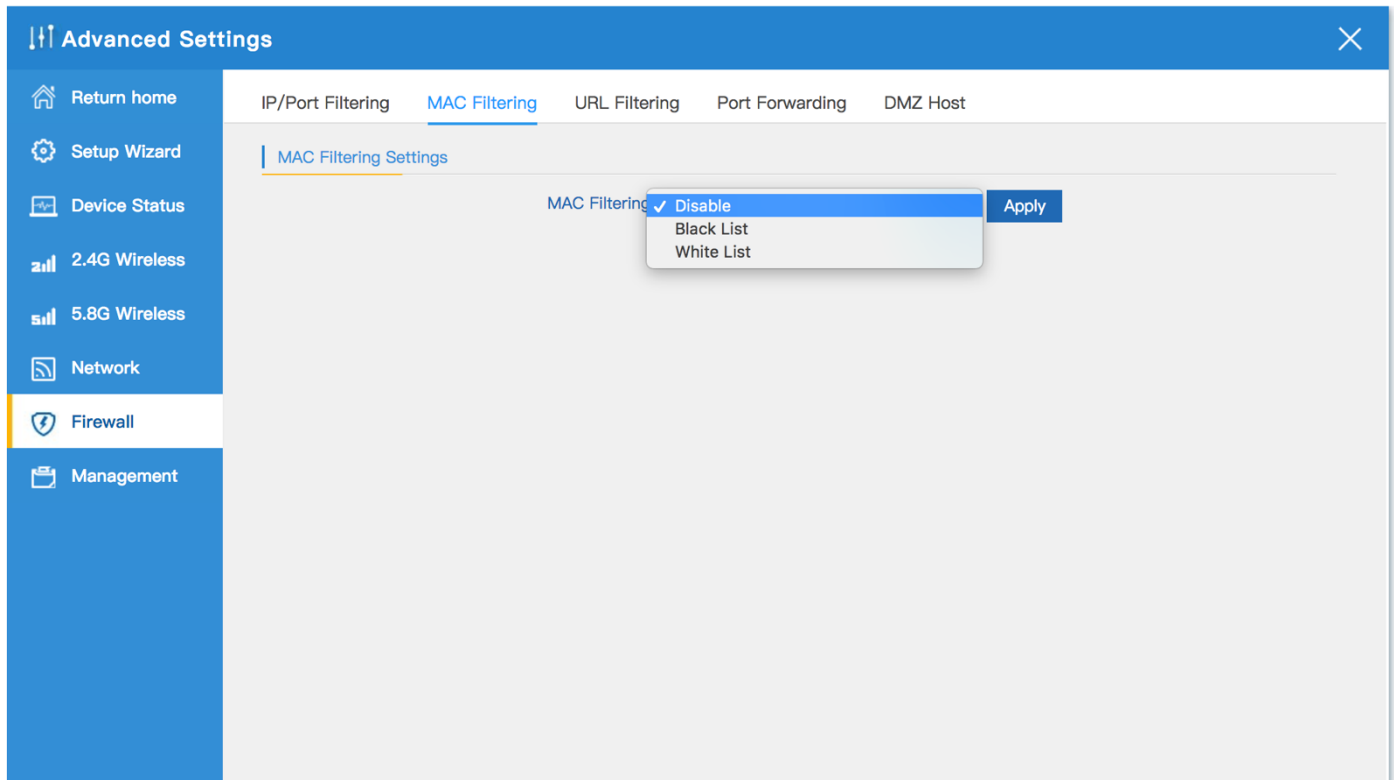
The screenshot shows the 'Advanced Settings' window with the 'IP Filtering Settings' tab selected. The 'IP Filtering' dropdown is set to 'Black List'. The 'IP' field contains the range '192.168.188.100 - 192.168.188.150'. The 'Port' field contains '1 - 65535' with a note '(1~65535)'. The 'protocol' dropdown is set to 'TCP+UDP'. An orange box highlights the IP, Port, and protocol fields. An orange arrow points from the 'Add' button to the 'IP Filtering' dropdown, and another orange arrow points from the 'Add' button to the 'IP' field. Below the form is a table with columns: 'ALL', 'IP Address', 'port', and 'protocol'. The table is currently empty.

**3.White List** : IP Address that can be specified as a separate or range , and then specifies the port range (1~65535) and protocol(TCP/UDP) , which is set as the status of the allow.

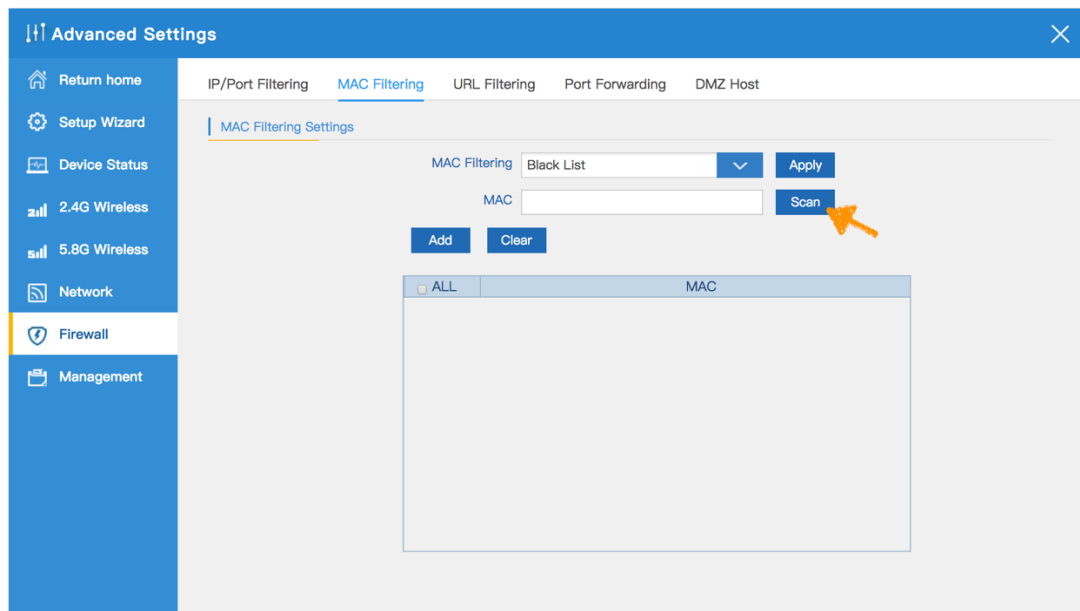
The screenshot shows the 'Advanced Settings' window with the 'IP Filtering Settings' tab selected. The 'IP Filtering' dropdown is set to 'White List'. The 'IP' field contains the range '192.168.188.151 - 192.168.188.180'. The 'Port' field contains '1 - 80' with a note '(1~65535)'. The 'protocol' dropdown is set to 'TCP+UDP'. An orange box highlights the IP, Port, and protocol fields. An orange arrow points from the 'Add' button to the 'IP Filtering' dropdown, and another orange arrow points from the 'Add' button to the 'IP' field. Below the form is a table with columns: 'ALL', 'IP Address', 'port', and 'protocol'. The table is currently empty.

## 4.5.2 MAC Filtering :

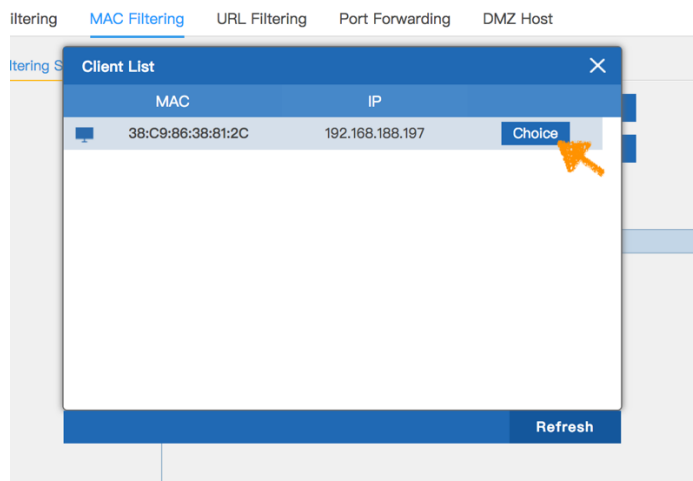
1.Factory default value is disable, Can be set to whitelist or blacklist. The following will begin to introduce how to set the enable function



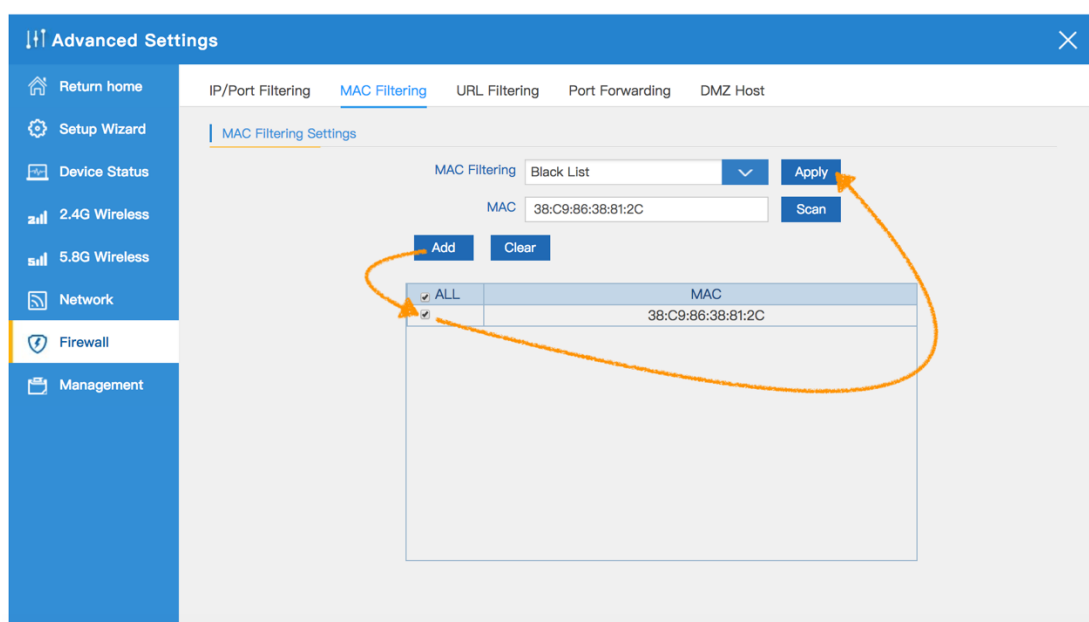
**2.Black List :** Scan specified mode or manual input mode to set, you can block the specified MAC address to connect to the Internet, leaving only link Regional network function.



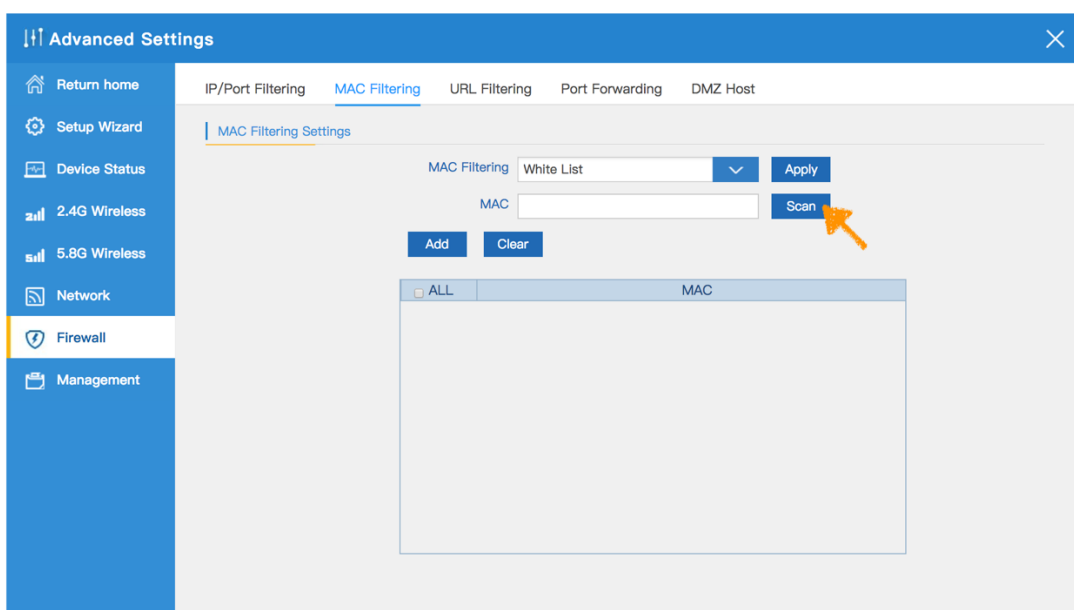
### 3.Click Choice



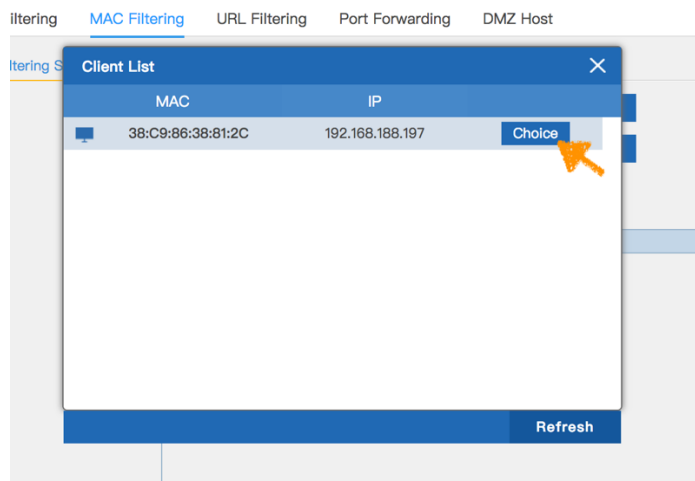
### 4. Added specified MAC address , Click Apply



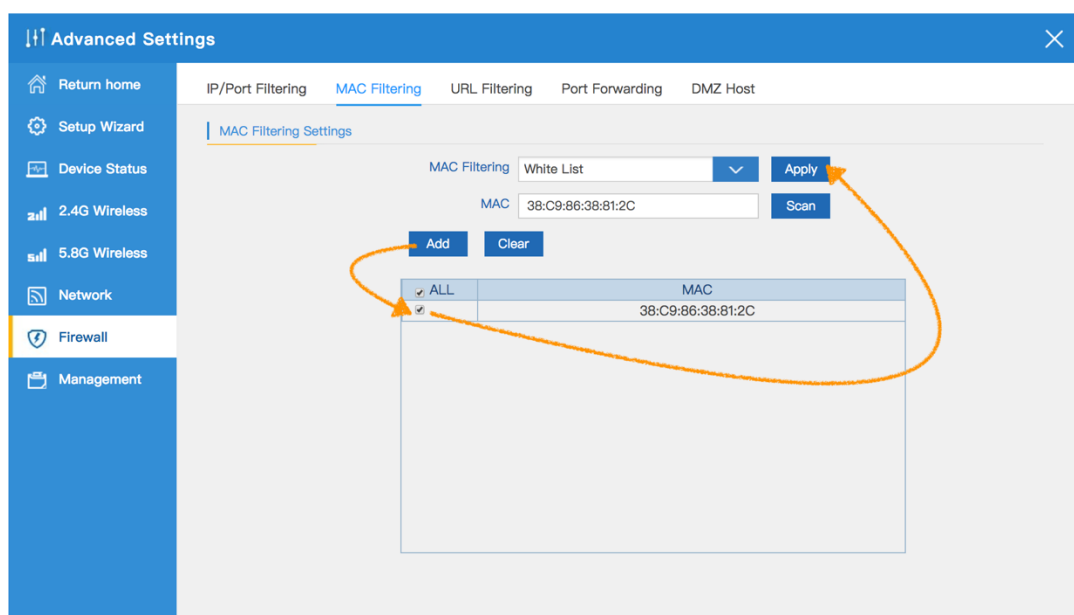
### 5.White List : Scan specified mode or manual input mode is set to allow the specified MAC address to connect to the Internet



## 6.Click Choice

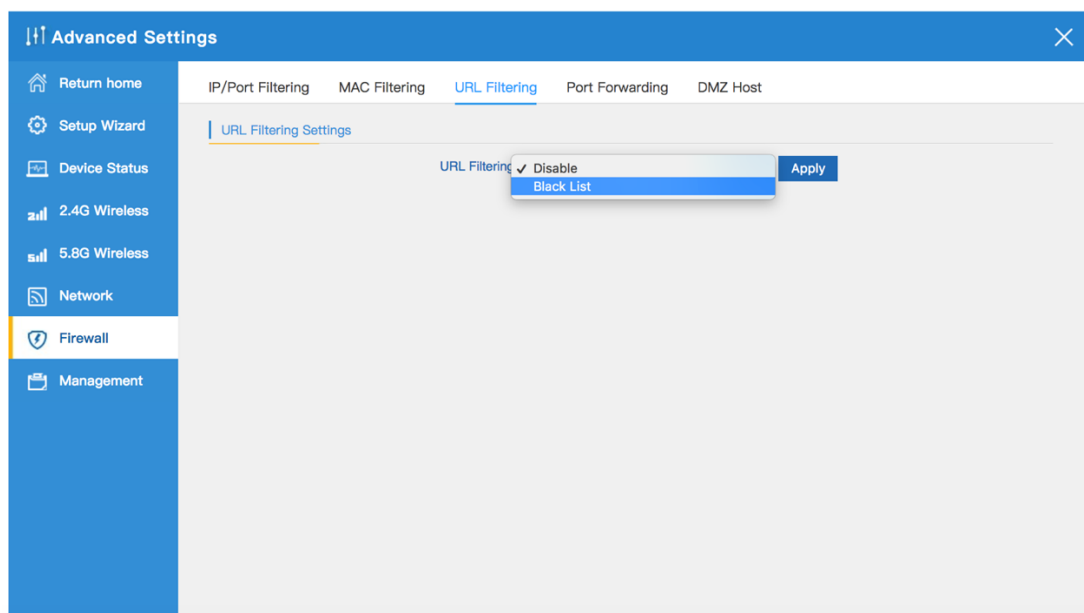


## 7.Added specified MAC address , Click Apply



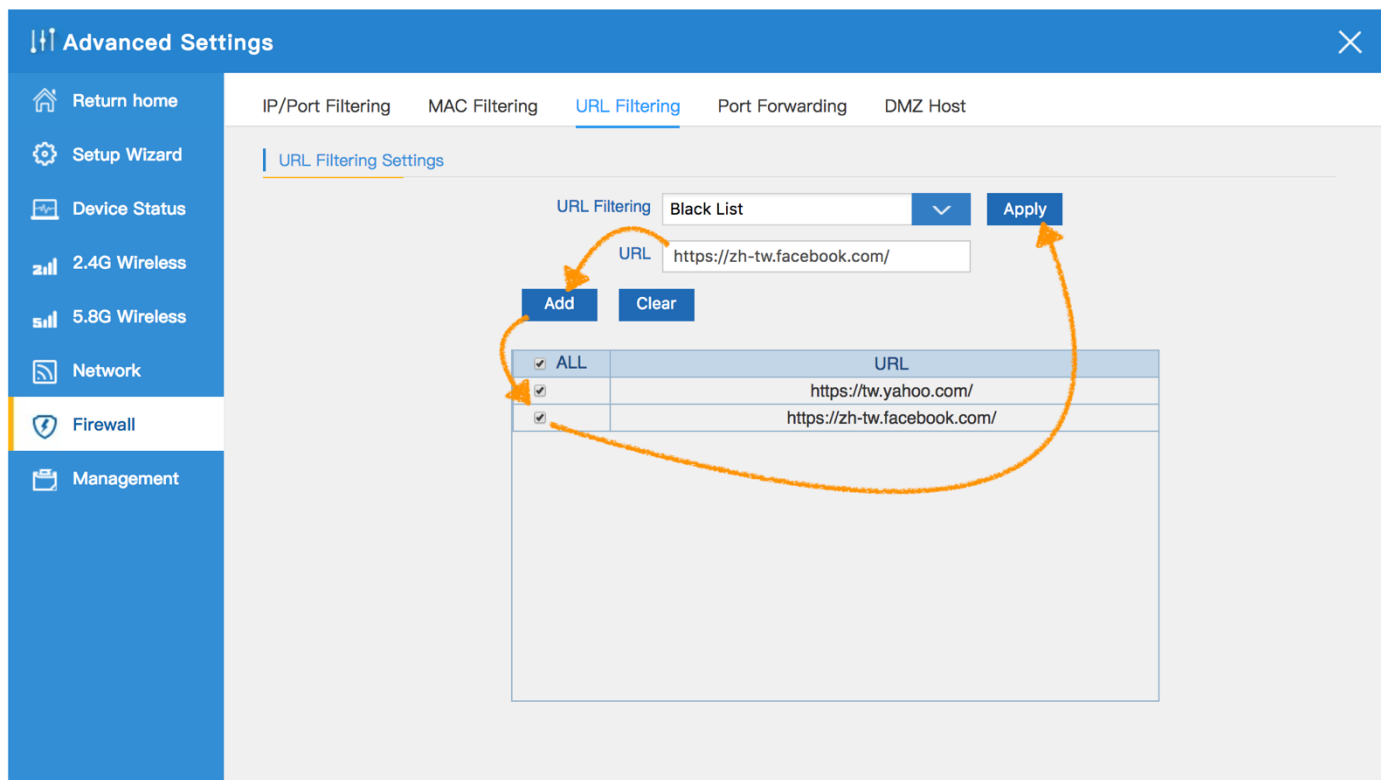
## 4.5.3 URL Filtering :

1.Factory default value is disable, Can be set to Black List. The following will begin to introduce how to set the enable Black List function





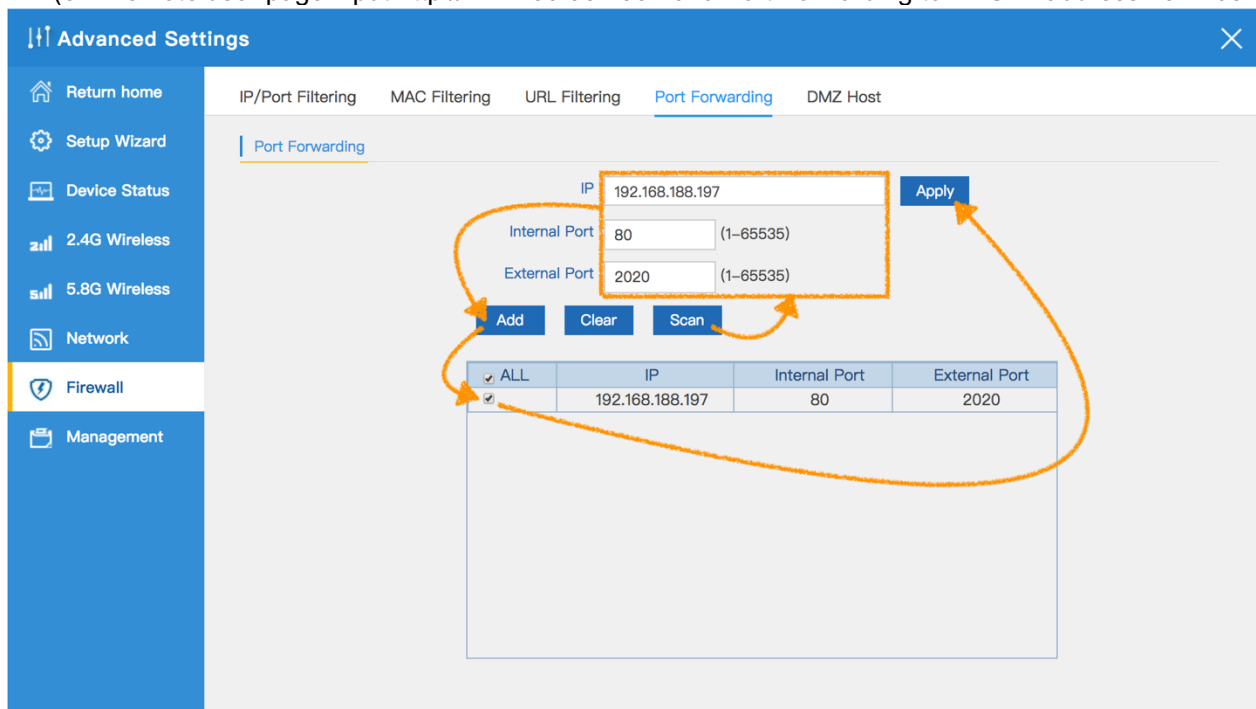
2. **Black List** : Can set the URL refuse to access the list , making all devices unable to connect to the list of websites



#### 4.5.4 Port Forwarding ( **Note:** Port Forwarding functionality is available only in Gateway mode.)

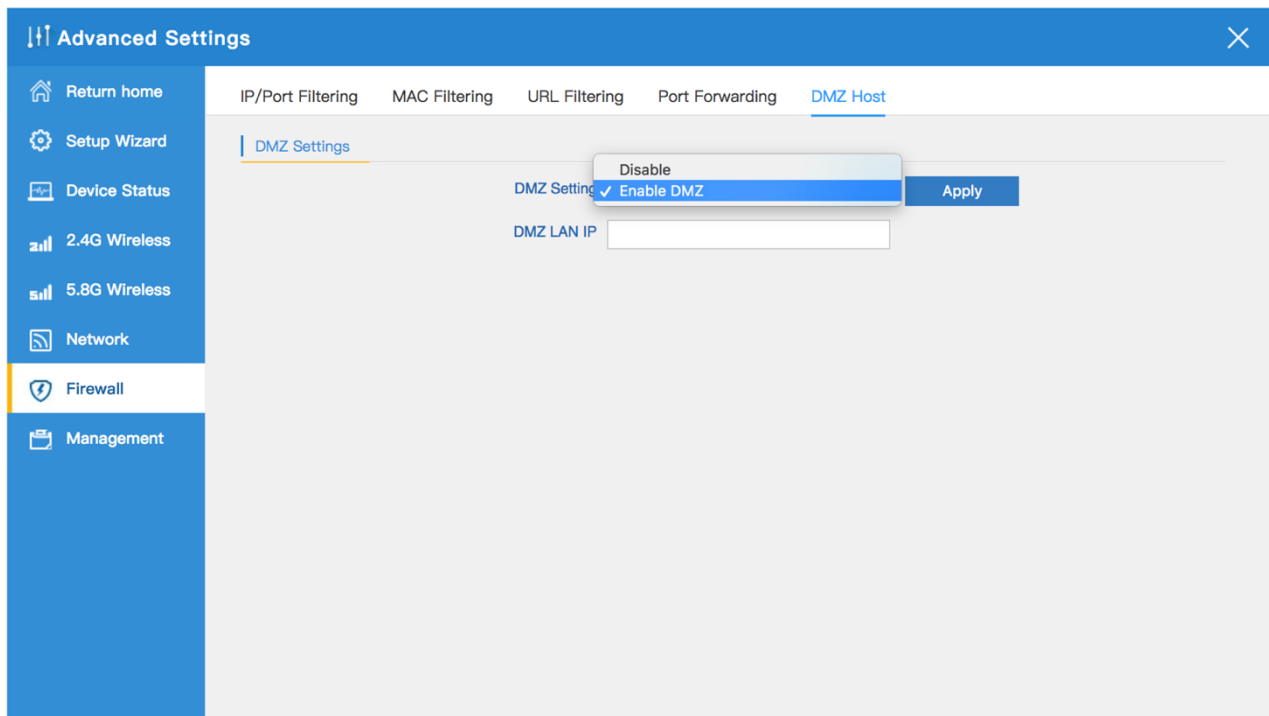
- The scan specified mode or manual input mode is set to allow the specified internal IP address of the External / External port so that other users can connect from the remote network to the WAP-8021 internal network equipment (ex: NAS , IP camera)
- After the setting is completed, the real fixed IP address or DDNS mode can be used to remotely connect to the NAS inside the WAP-8021

(ex: Remote user page input http://111.250.96.135:2020 Port Forwarding to NAS IP address:192.168.188.197:80)



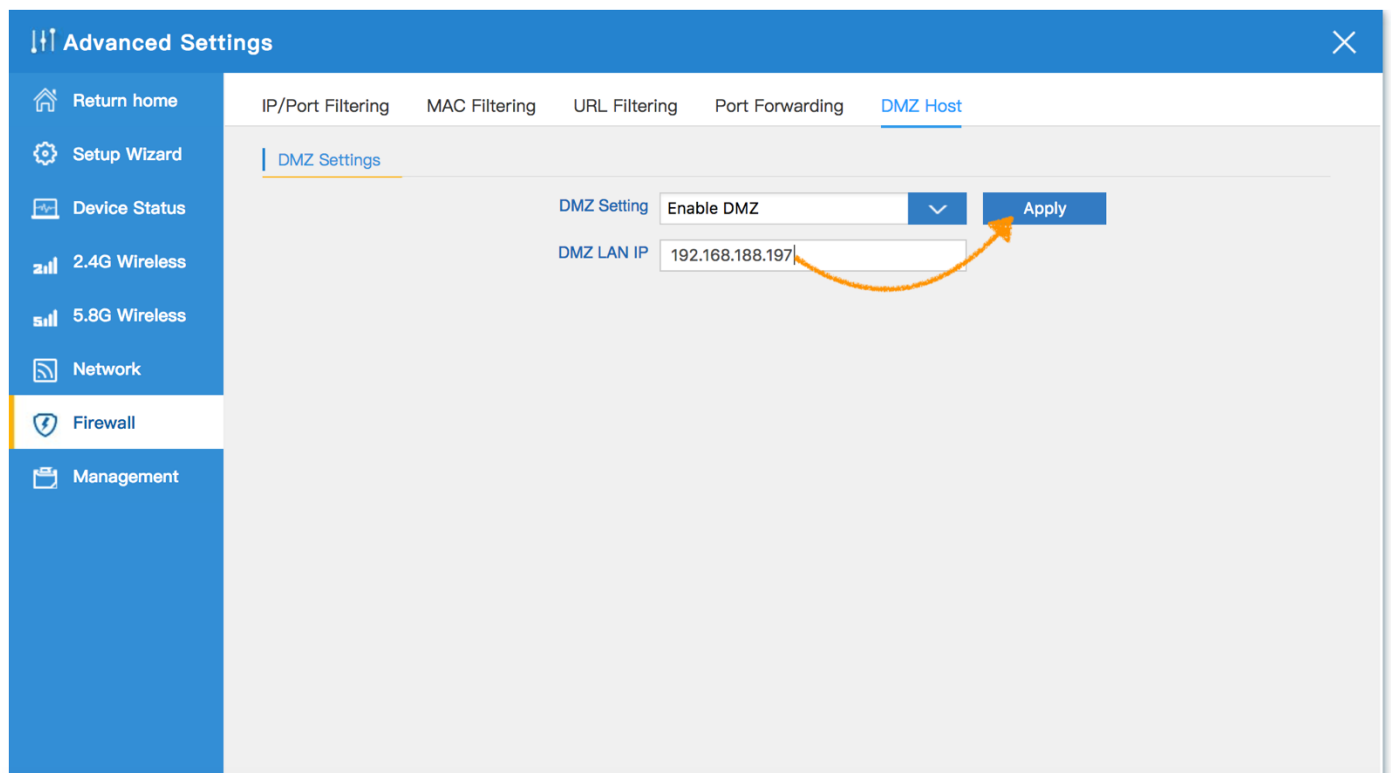
### 4.5.5 DMZ Host

1.Factory default value is disable . The following will begin to introduce how to set the enable DMZ Host function



2.When enabled, will independent a non-military block for this ip address device.

**Note :** This device will be directly exposed on the Internet, there will be some risk



## 4.6 Management

### 4.6.1 System Time :

1. Get time from NTP server can only be available under Gateway and WISP Mode. Before sync with host, please select your Time zone.

**Auto restart** : Define the system reboot time(0:00~23:00) , Can choose every day or every five days or every 10 days , System Reboot Automatically.

**Advanced Settings**

Return home | Setup Wizard | Device Status | 2.4G Wireless | 5.8G Wireless | Network | Firewall | **Management**

**System Time** | DDNS settings | QoS | Logs | Upgrade Firmware | System | Storage/Server | User

**System Time**

Synchronous mode: ☒ Sync with Host ☐ Sync with Server

System Time: 2018-05-30 16:03:38 Sync with Host

Auto restart: ☐ 0:00 ☐ one day

Apply

2. Can set up the required NAT Server

**Advanced Settings**

Return home | Setup Wizard | Device Status | 2.4G Wireless | 5.8G Wireless | Network | Firewall | **Management**

**System Time** | DDNS settings | QoS | Logs | Upgrade Firmware | System | Storage/Server | User

**System Time**

Synchronous mode: ☐ Sync with Host ☒ Sync with Server

System Time: 2018-05-30 16:04:10 Sync with Server

Choose Time Zone: TaiPei

NTP Server: time.windows.com

Auto restart: ☐ 0:00 ☐ one day

Apply

### 3.Can add NTP Server yourself (ex: Hinet NTP Server)

**Advanced Settings**

System Time DDNS settings QoS Logs Upgrade Firmware System Storage/Server User

**System Time**

Synchronous mode ☐ Sync with Host ☒ Sync with Server

System Time 2018-05-30 16:05:35 [Sync with Server](#)

Choose Time Zone Taipei

NTP Server ---CUSTOM---

Manual Setup clock.stdtime.gov.tw

Auto restart ☐ 0:00 ☐ one day

[Apply](#)

## 4.6.2 DDNS settings :

- Factory default value is disable
- **Note:** DDNS settings functionality is available only in Gateway mode , And before setting, first make sure that WAP-8021 has obtained the real IP address first

**Advanced Settings**

System Time **DDNS settings** QoS Logs Upgrade Firmware System Storage/Server User

**DDNS**

Dynamic DNS ☒ Disable ☐ Enable

[Apply](#)

### 4.6.3 QoS :

- Can manually specify the IP address range of the device to limit the upload and download

**Advanced Settings**

System Time DDNS settings **QoS** Logs Upgrade Firmware System Storage/Server User

**QoS**

☒ ON **Apply**

Upload  Range:(100-1024000)Kbps

Download  Range:(100-1024000)Kbps

**QoS Rule settings**

☒ IP range  —

Mode ☒ Share total bandwidth with all IP address. ☐ Assign bandwidth for each IP address.

Bandwidth Upload  Kbps Download  Kbps

Comment  **Add** **Clear**

<input type="checkbox"/> ALL	Start IP	End IP	Mode	Upload(Kbps)	Download(Kbps)	Comment
<input checked="" type="checkbox"/>	192.168.188.100	192.168.188.200	Share	20000	50000	engineer

### 4.6.4 Logs :

- In Logs part, you can copy the running history of the device to consult the engineers when you have any trouble

**Advanced Settings**

System Time DDNS settings QoS **Logs** Upgrade Firmware System Storage/Server User

**System Logs**

☐ Remote Log Server

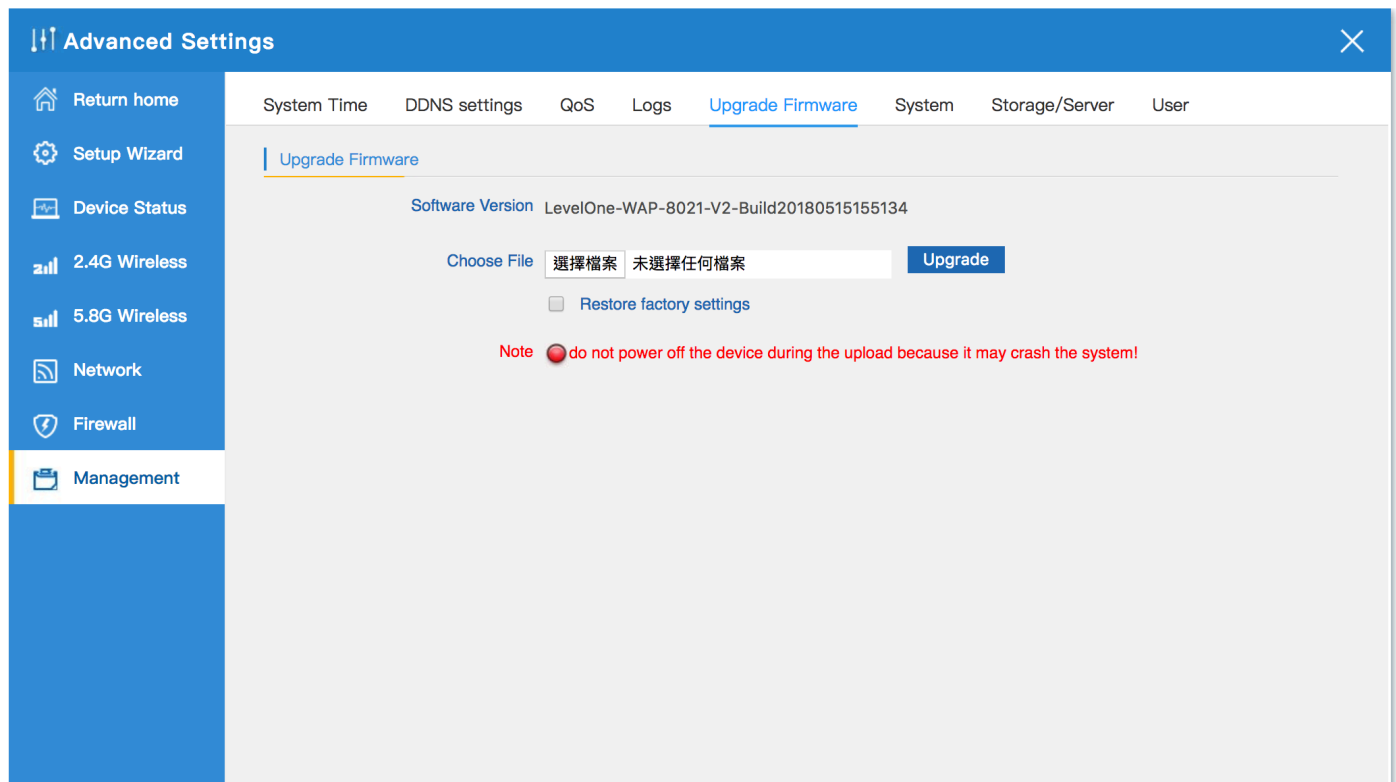
IP  **Apply**

```
May 30 16:05:57 WAP-8021 kern.err kernel: [ 7919.590000] VAP device ath14 created osifp: (86cd2380) os_if: (85254000)
May 30 16:05:57 WAP-8021 kern.warn kernel: [ 7919.630000] Set freq vap 1 stop send + 844ec000
May 30 16:05:57 WAP-8021 kern.warn kernel: [ 7919.640000] OL vap_stop +
May 30 16:05:57 WAP-8021 kern.warn kernel: [ 7919.640000] wmi_unified_vdev_stop_send for vap 0 (86340000)
May 30 16:05:57 WAP-8021 kern.warn kernel: [ 7919.650000] OL vap_stop -
May 30 16:05:57 WAP-8021 kern.warn kernel: [ 7919.650000] STOPPED EVENT for vap 0 (86340000)
May 30 16:05:57 WAP-8021 kern.warn kernel: [ 7919.650000] Set freq vap 1 stop send -844ec000
May 30 16:05:57 WAP-8021 kern.warn kernel: [ 7919.790000] Set wait done --844ec000
May 30 16:05:57 WAP-8021 kern.warn kernel: [ 7919.790000] Set freq vap 1 stop send + 85254000
May 30 16:05:57 WAP-8021 kern.warn kernel: [ 7919.790000] OL vap_stop +
May 30 16:05:57 WAP-8021 kern.warn kernel: [ 7919.800000] wmi_unified_vdev_stop_send for vap 1 (86340000)
May 30 16:05:57 WAP-8021 kern.warn kernel: [ 7919.800000] OL vap_stop -
```

**Refresh** **Clear**

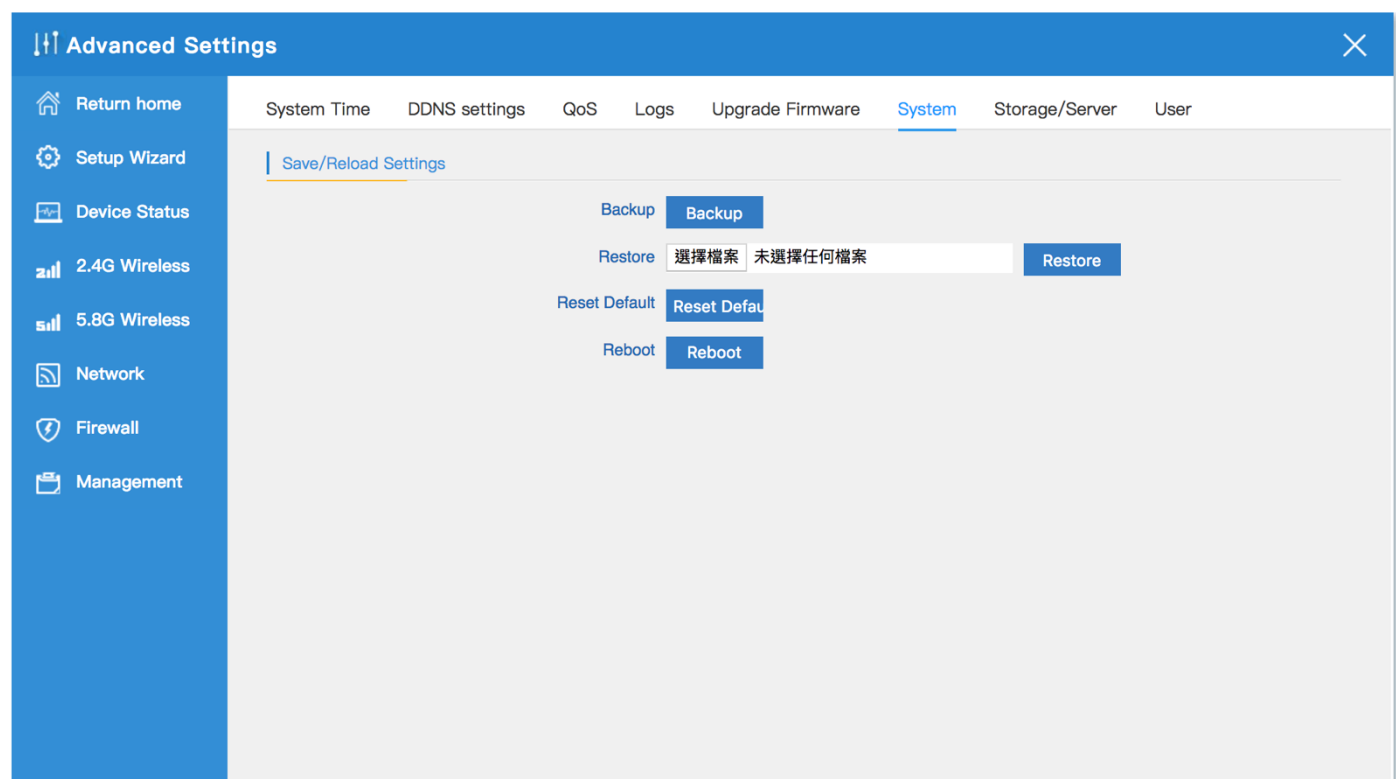
## 4.6.5 Upgrade Firmware :

- Allows you to browse the new firmware in your computer and upgrade. Please do not power off the device during upgrade.



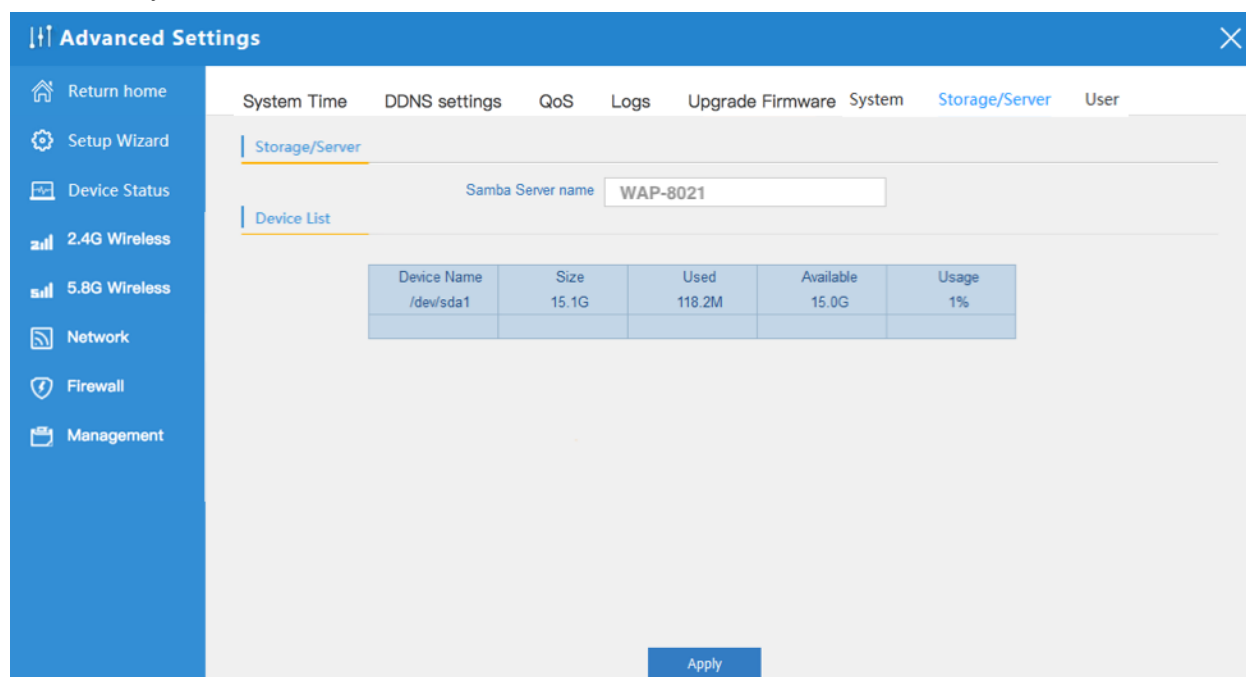
## 4.6.6 System :

You are able to backup the current configuration to your PC and restore by applying the configuration file from your PC. And you can Reset and Reboot the device with just one click

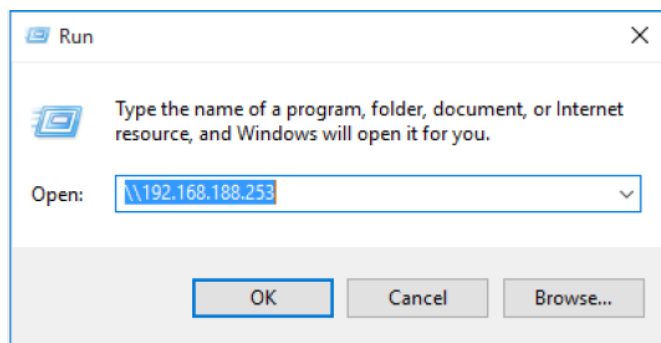


## 4.6.7 Storage / Server :

1. Share the files in USB disk to public users through SAMBA server. Storage/server functionality is available only in Gateway mode.



2. The default IP address of SAMBA server is 192.168.188.253, input [\\192.168.188.253](http://192.168.188.253) in your PC to run and search it, picture showed as follow, click sure to confirm. Please make sure your computer has connected with the router.



3. following picture will be showed, and then the files completely shared in this network.



sda1



sdb1

## 4.6.8 User :

- Management and change the password for Log in

Advanced Settings

Return home

Setup Wizard

Device Status

2.4G Wireless

5.8G Wireless

Network

Firewall

Management

System TimeDDNS settingsQoSLogsUpgrade FirmwareSystemStorage/ServerUser

User

Old Password

Password

Confirm Password

Apply



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