

# User Manual

( WAP-6221)



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. WAP-6221
2. Screw Kit
3. Quick Installation Guide

### 4. Warning:



#### **Attention**

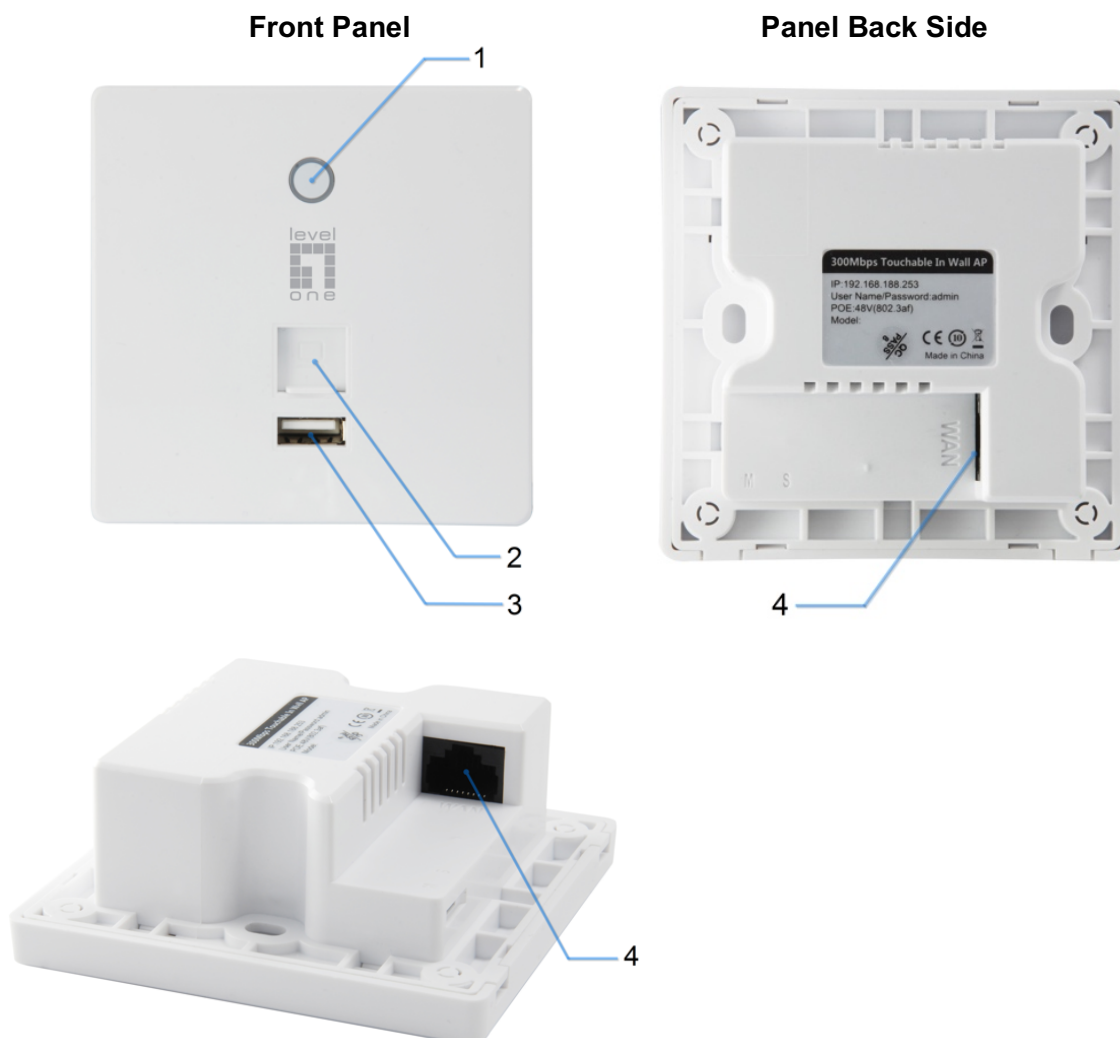
- Do not use the product in high humidity or high temperatures.
- Do not use the same power source for the Product as other equipment. Only use the power adapter that comes with the package. Using a different voltage rating power adapter may damage the device.
- Do not open or repair the case yourself. 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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# Chapter 1 Hardware and Operation mode Instruction

## 1.1 Hardware Description:



- 1.WIFI SSID Broadcast ON/OFF , Reset to Defaults
- 2.LAN Port
- 3.USB Port
- 4.WAN / POE Port

### Button Light State:

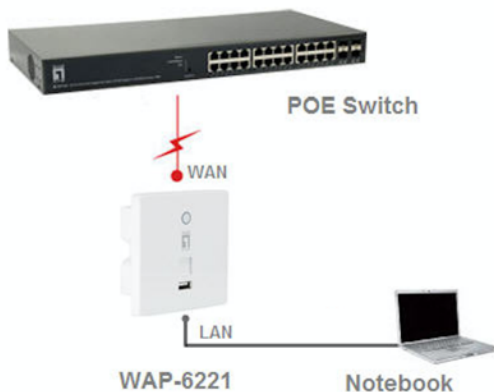
Task to be Performed	Time Period of Pressing Button	SYS LED Behavior
WIFI SSID Broadcast ON	0 ~ 1 seconds	ON Green
WIFI SSID Broadcast OFF	0 ~ 1 seconds	Light off
Reset to Defaults	10 ~ 12 seconds	Blinking Green

## 1.2 Installation Description:

LED/Button/Interface	Description
WIFI SSID Broadcast ON/OFF	To turn on or off the WIFI SSID Broadcast
Reset to Defaults	With the AP powered on, press the Reset button for 10 ~ 12 seconds until the Signal Strength LED blink faster than ever. The AP will restart itself and reset the device to factory default settings.
LAN port	The LAN port is used to connect to network devices, such as a switch or PC / NB
USB port	Charge USB devices (5V1A)
WAN/POE Port	The WAN/POE port is used to connect to network devices, such as a POE switch OR POE adapter to power the device ( IEEE802.3af ) 48 VDC. (POE adapter unit is to be ordered separately)

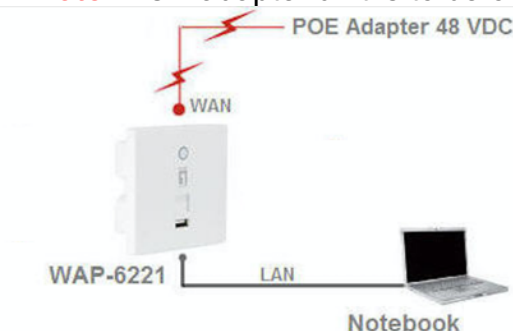
### Way to supply power for this device :

1. PoE Power supply : pls make sure the PoE switch comply with IEEE 802.3af standard.



2. The WAN port connects to the POE adapter (48V DC).

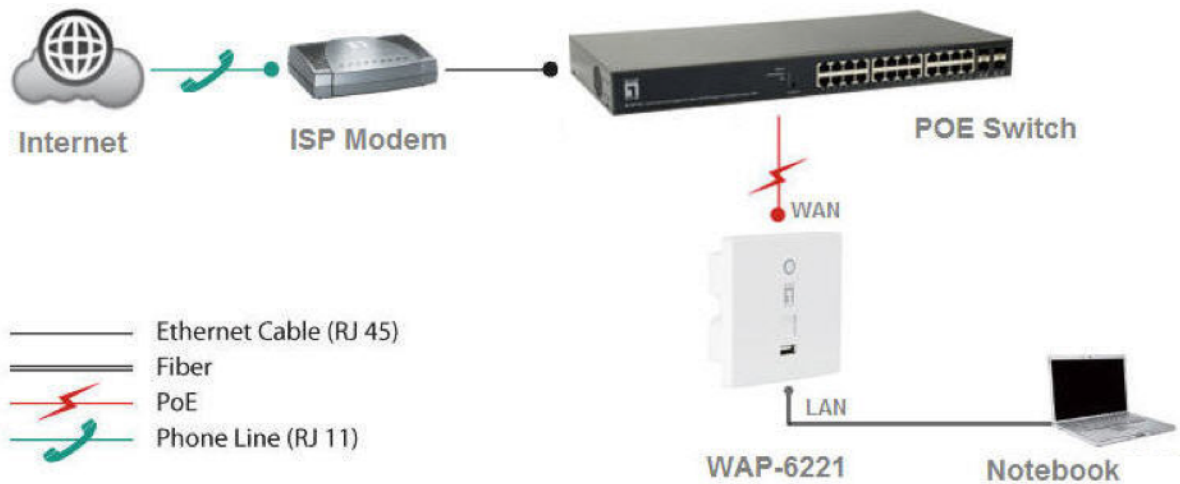
**Note:** POE adapter unit is to be ordered separately



### 1.3 Operation Mode description and usage:

There are four operation mode : Gateway mode , Repeater mode , WISP Mode, AP Mode .

- **Gateway mode:** Connect to the ISP Modem through the cable network to connect to the Internet and use with 3 types of Internet access (PPPoE , DHCP, Static IP)



- **WISP mode:** Receive ISP Modem Wireless network and select one of them Internet access method (PPPoE, DHCP, static IP) .

( **Note:** POE adapter unit is to be ordered separately )



- **Repeater mode:** The WAP-6221 can bridge and extend the existing WiFi signal in this operation mode . ( **Note:** POE adapter unit is to be ordered separately )



- **AP Mode:** Please Make sure that the upper device has a router, Only after confirming can use AP Mode

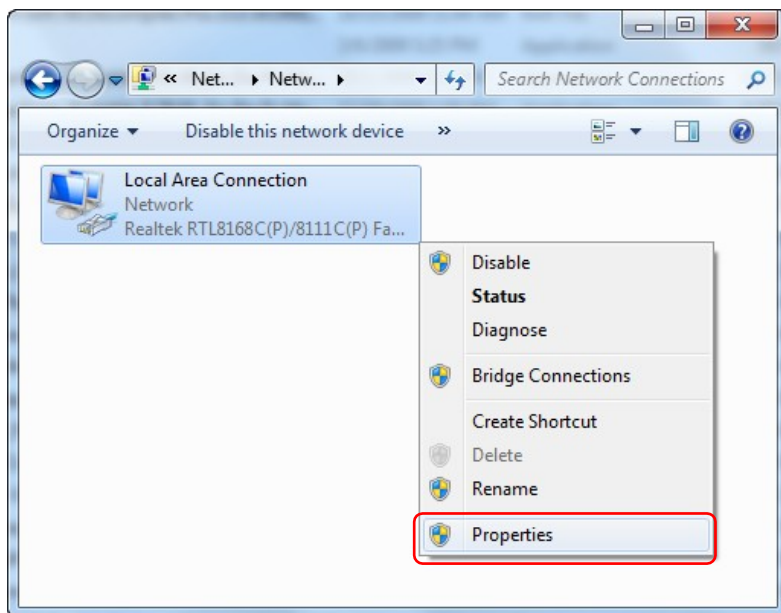


## Chapter 2 Login

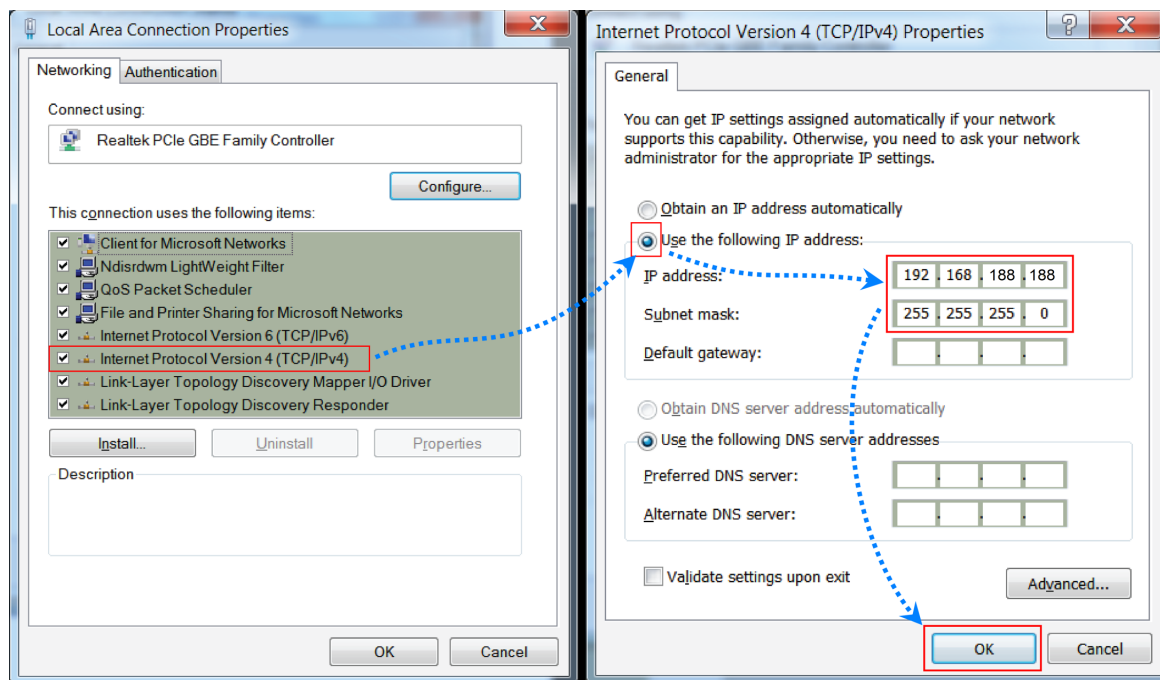
The necessary information about log in is displayed on the sticker of the product, including the URL, User Name and Pass Word

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.



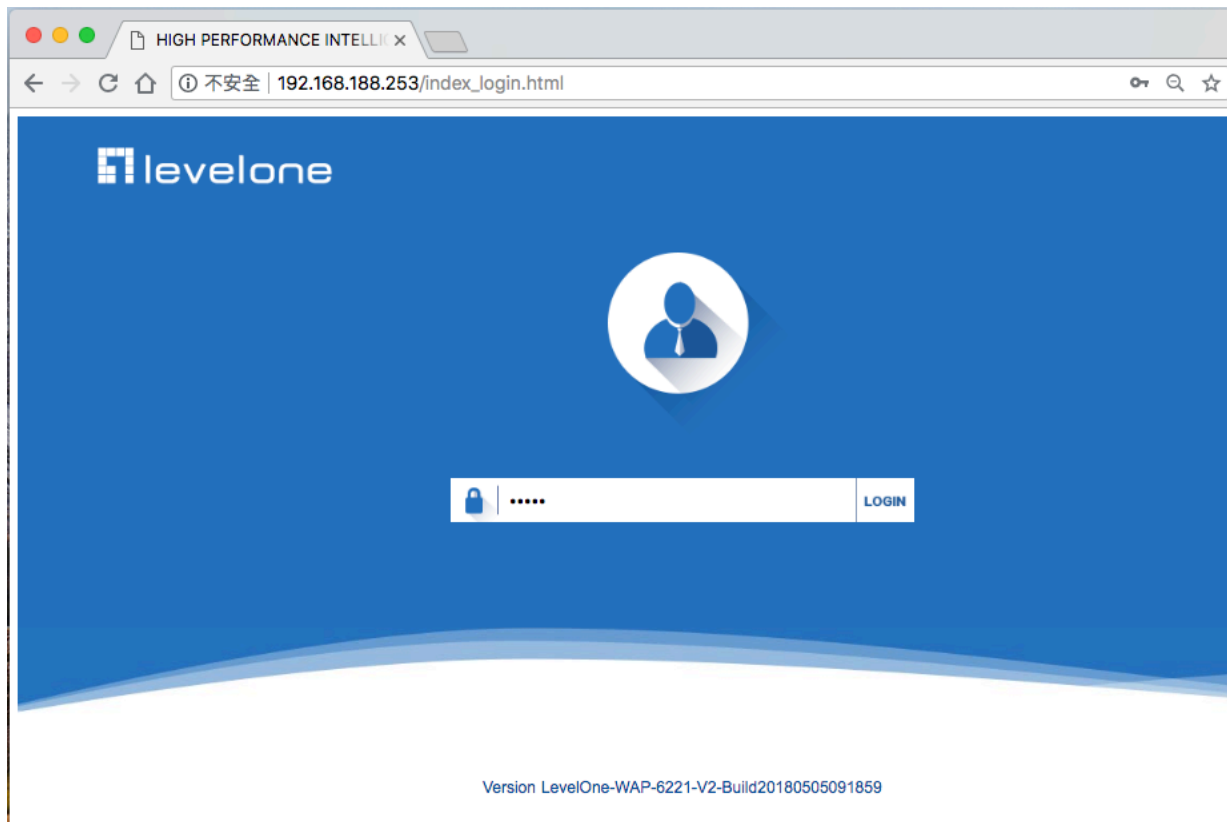
▲ P1 Setting of computer's IP address



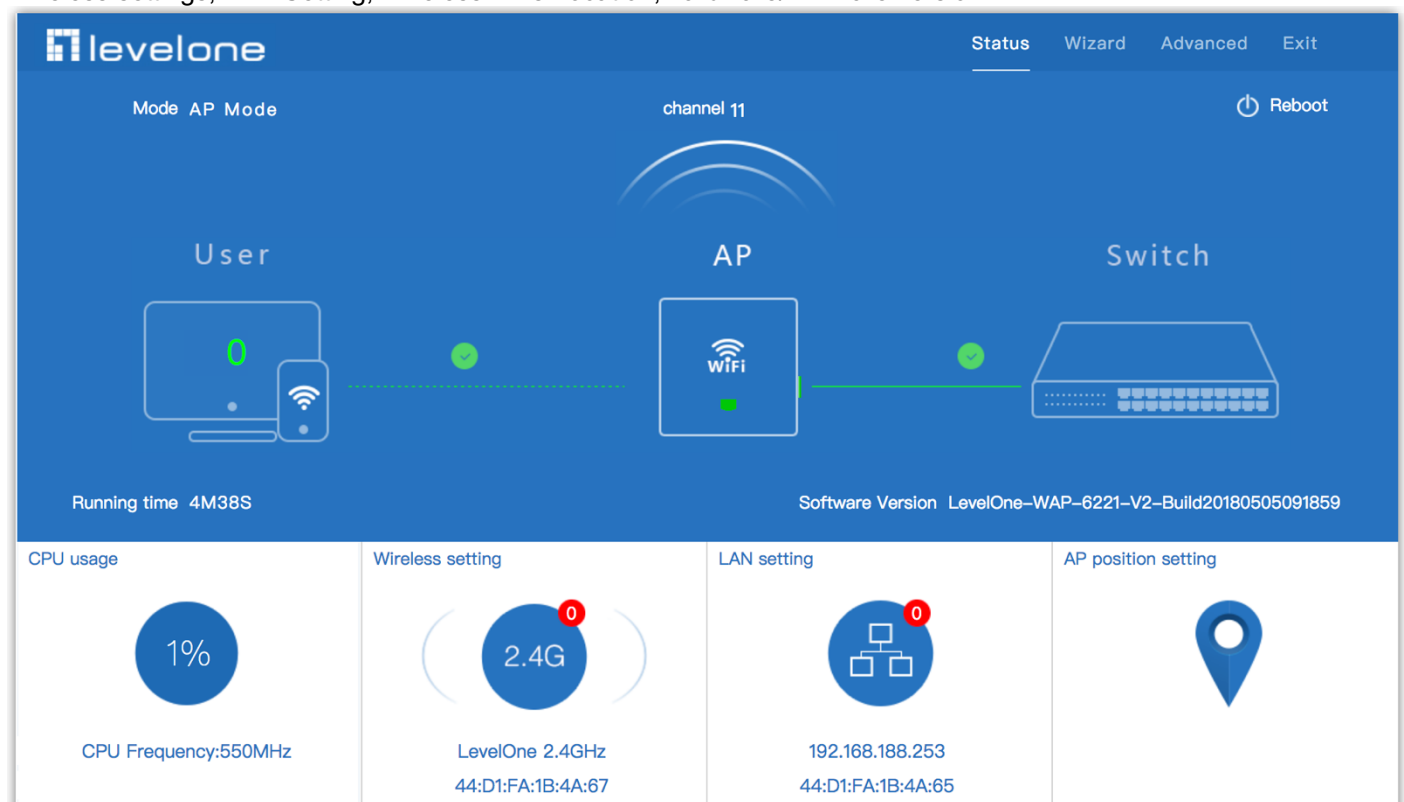
▲ P2 Setting of computer's IP address



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



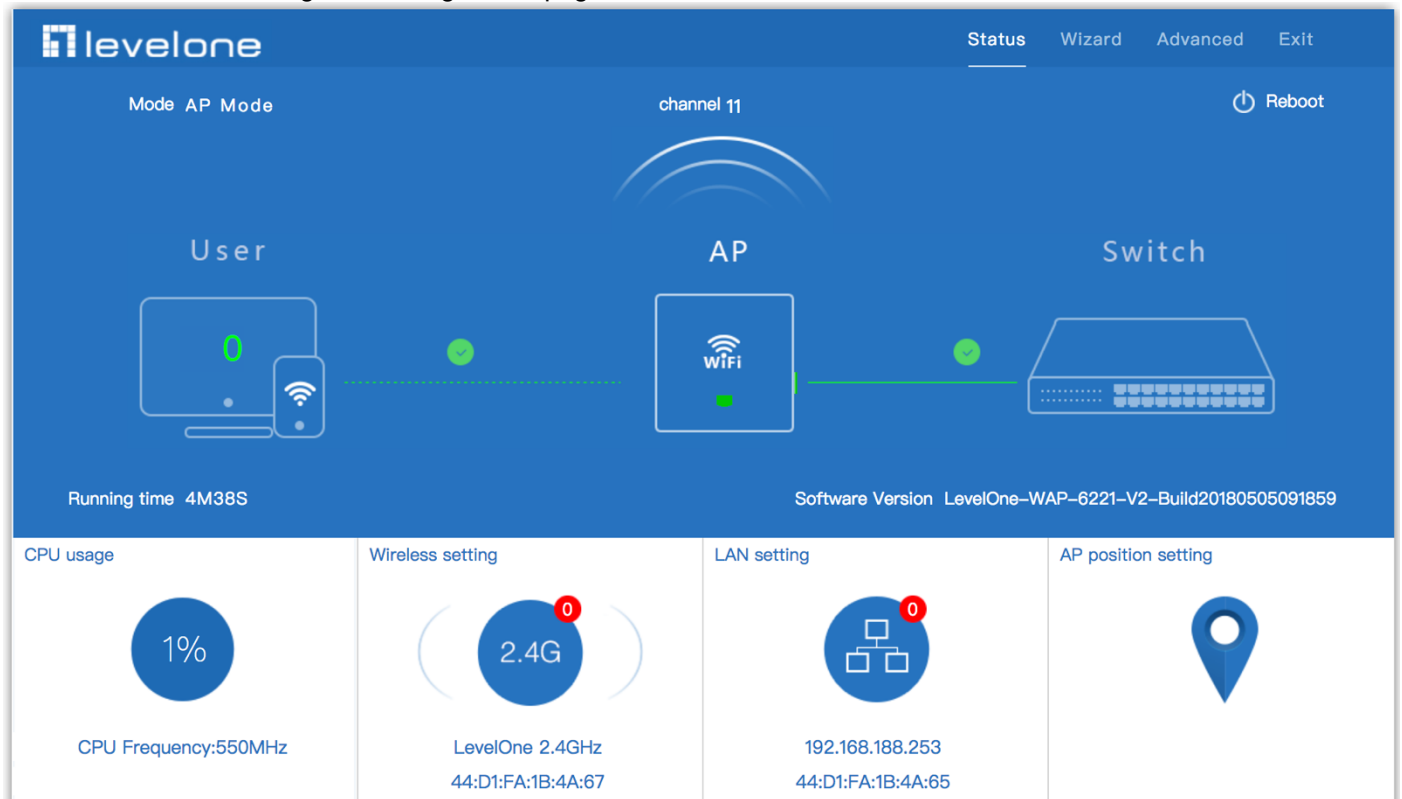
4. After login, This page will show the Wireless AP's default operation mode, channel, connection status, CPU usage, Wireless settings, LAN Setting, Wireless AP's Location, hardware/firmware version.



## Chapter 3 WEB GUI interface Setting

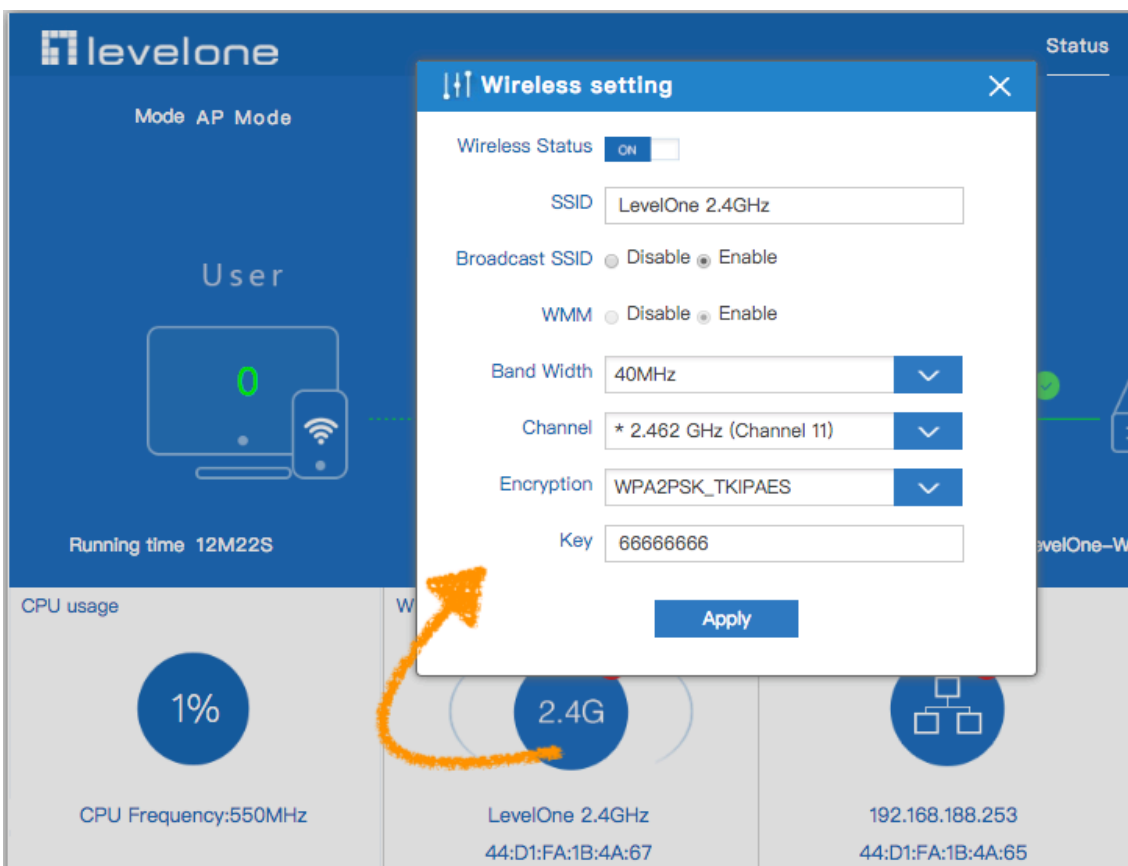
### Status :

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

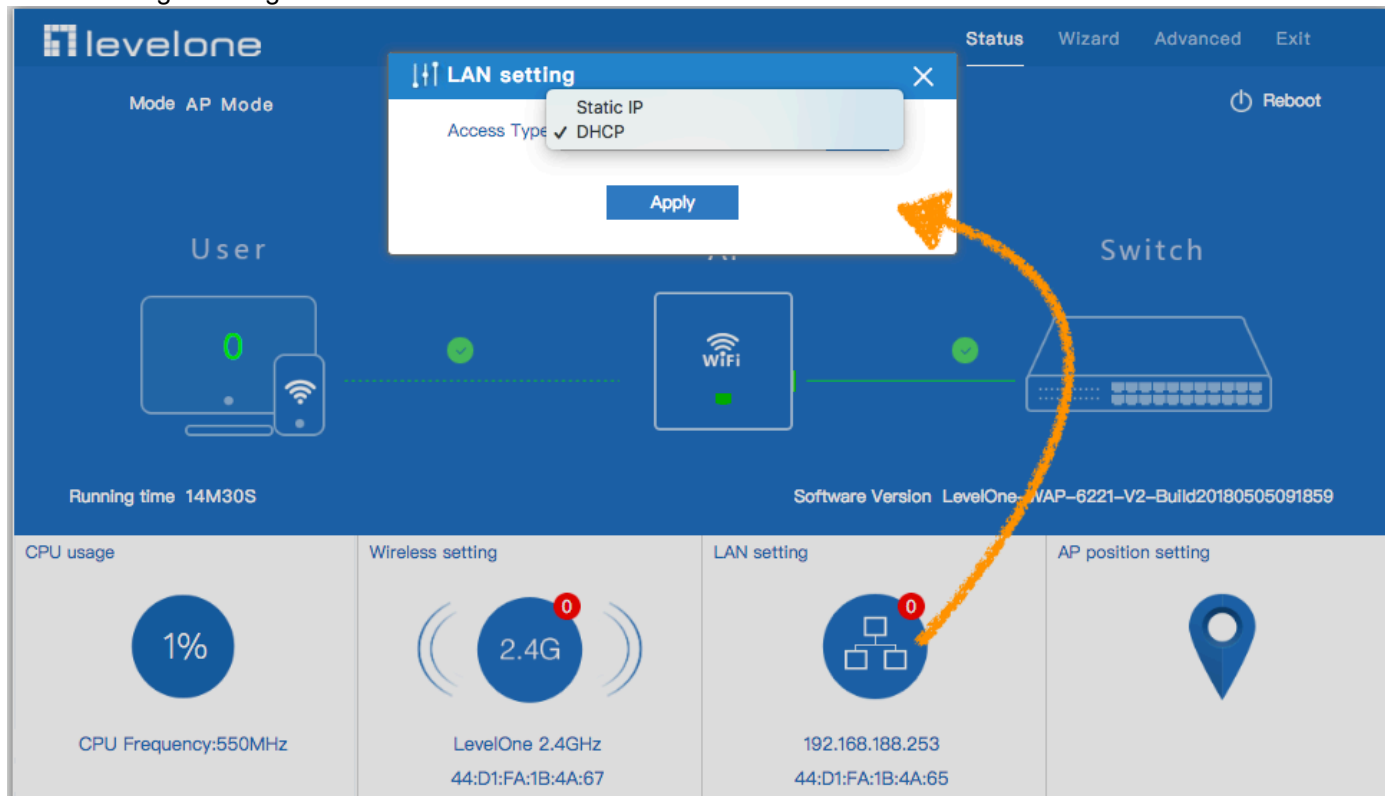


2.Then in Wireless Setting, GUI configuration page showed as below:

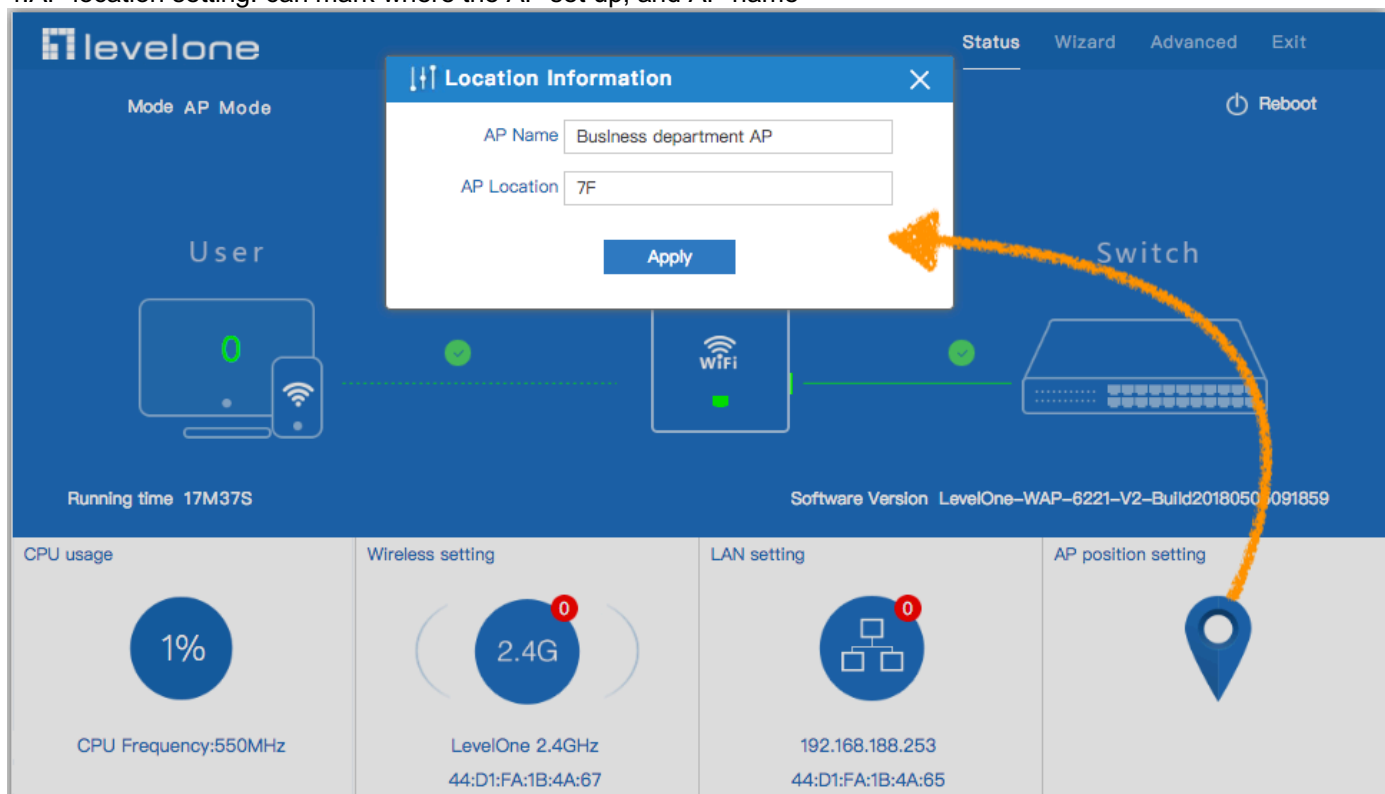
User can configure the SSID, password, band width, channel here, then Apply to finish.



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

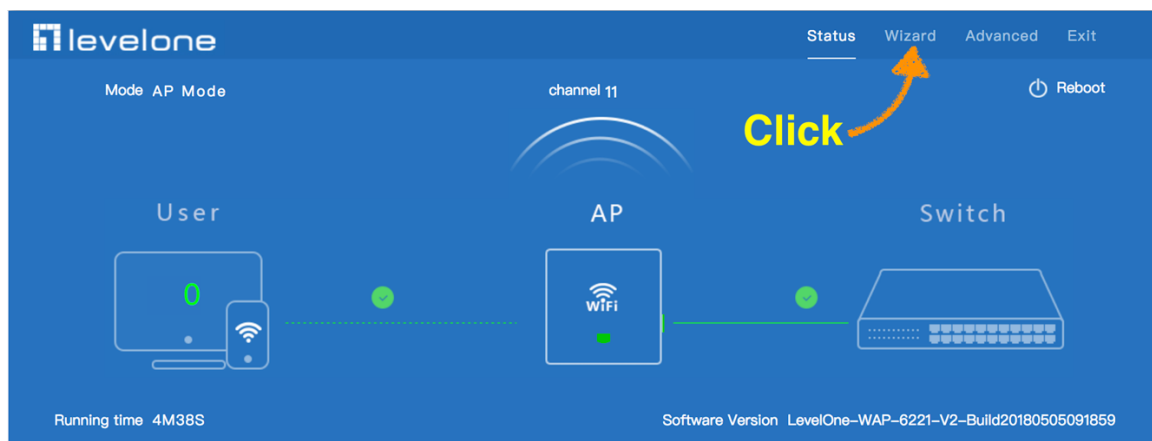


### 4. AP location setting: can mark where the AP set up, and AP name



## 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.

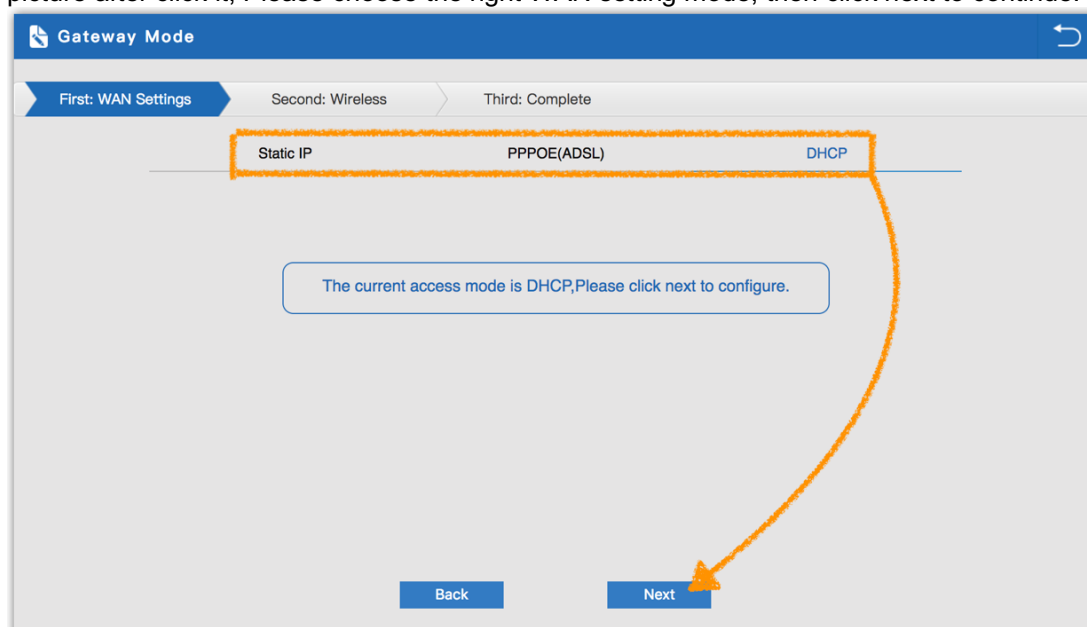


2.Wizard: It instruct users to configure wireless AP's operation mode based on needs: there are four operation mode including gateway, repeater, WISP, Wireless AP. Please confirm the operation mode first before configuration starting.



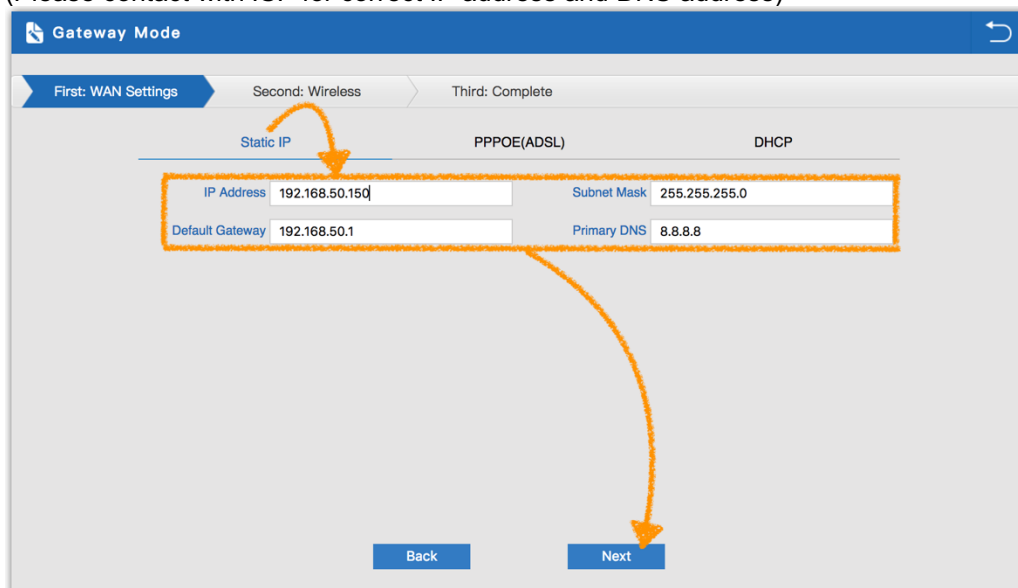
## 3.2 Gateway Mode:

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 options: 'Static IP', 'PPPOE(ADSL)', and 'DHCP'. The 'Static IP' option is selected and highlighted with an orange arrow. Below this, there is a table of settings:

Field	Value
IP Address	192.168.50.150
Subnet Mask	255.255.255.0
Default Gateway	192.168.50.1
Primary DNS	8.8.8.8

At the bottom of the page, there are two buttons: 'Back' and 'Next'. An orange arrow points from the 'Next' button to the 'Next' button in the previous step.

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

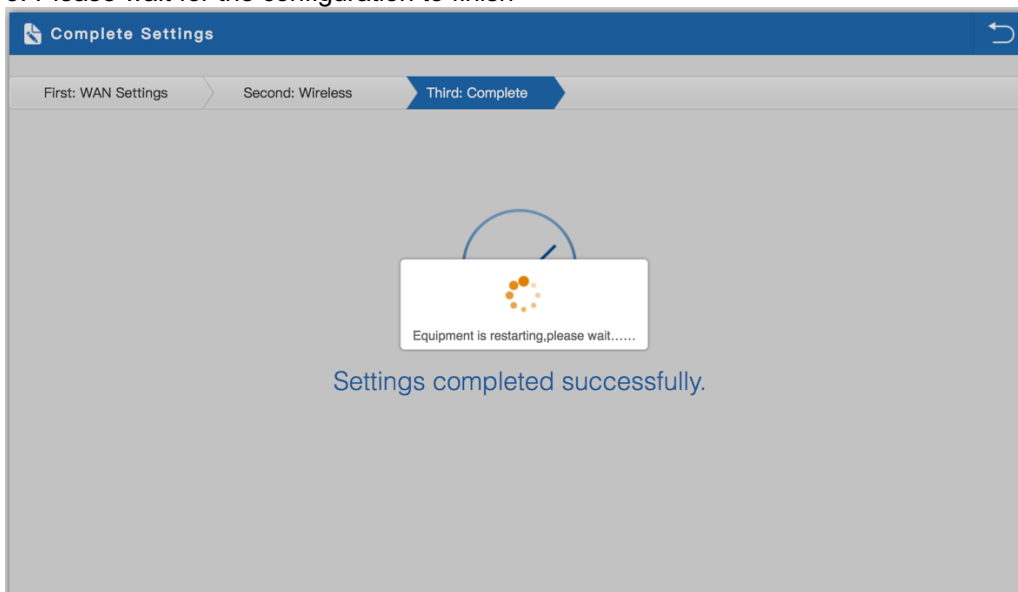


The screenshot shows the 'Gateway Mode' configuration interface. At the top, there are three tabs: 'First: WAN Settings', 'Second: Wireless', and 'Third: Complete'. The 'Second: Wireless' tab is active. Below the tabs, there is a section titled 'Wireless Settings'. Inside this section, there is a table of settings:

Field	Value
WLAN Status	ON
SSID	LevelOne 2.4GHz
Channel	* 2.462 GHz (Channel 11)
Encryption	WPA2PSK_TKIPAES
Key	66666666

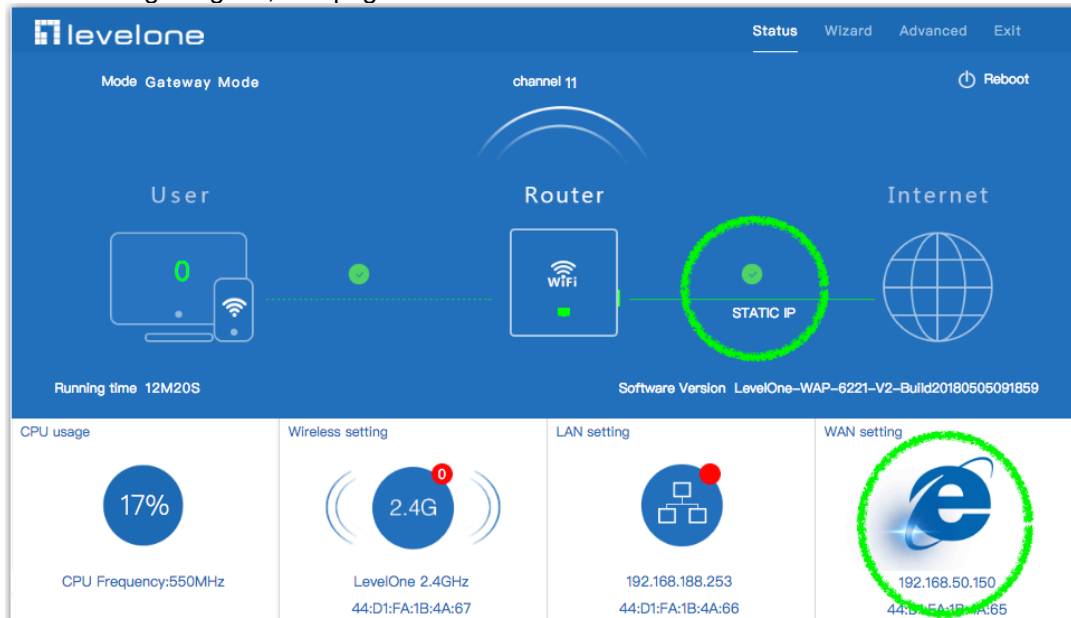
At the bottom of the page, there are two buttons: 'Back' and 'Next'. An orange arrow points from the 'Next' button to the 'Next' button in the previous step.

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 circular progress indicator with a blue arrow pointing clockwise. In the center of the circle, there is a text box that says 'Equipment is restarting, please wait.....'. Below the circle, there is a text box that says '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 :

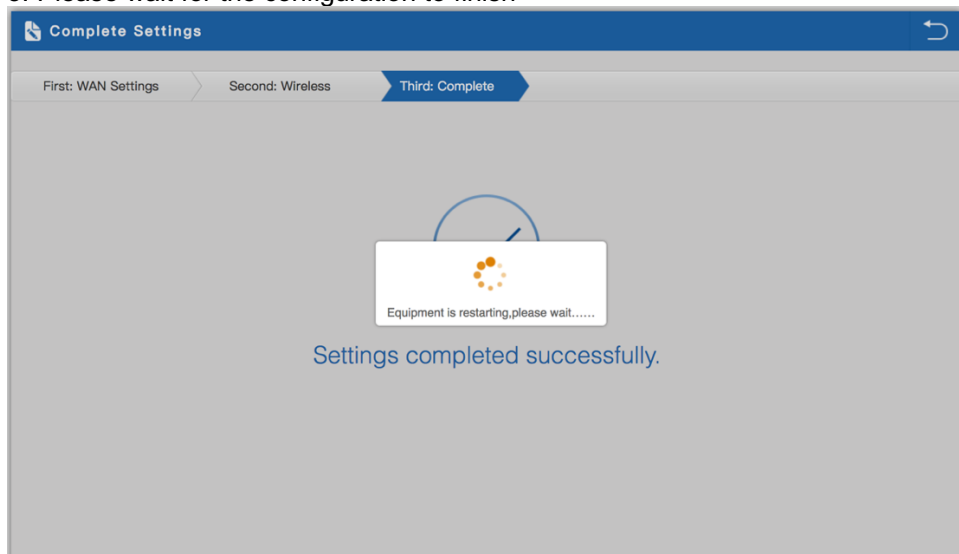
1. Sample PPPoE mode setting method, then click next to continue.  
(Please contact with ISP for correct PPPoE Name and Password)

The screenshot shows the Gateway Mode WAN Settings page. The 'First: WAN Settings' tab is selected. Below it, there are three sub-tabs: Static IP, PPPoE(ADSL), and DHCP. The PPPoE(ADSL) tab is active. The 'PPPoE Name' field contains '87654321@hinet.net' and the 'PPPoE Password' field contains '\*\*\*\*\*'. An orange arrow points from the 'Next' button to the 'PPPoE(ADSL)' tab. The 'Back' and 'Next' buttons are at the bottom.

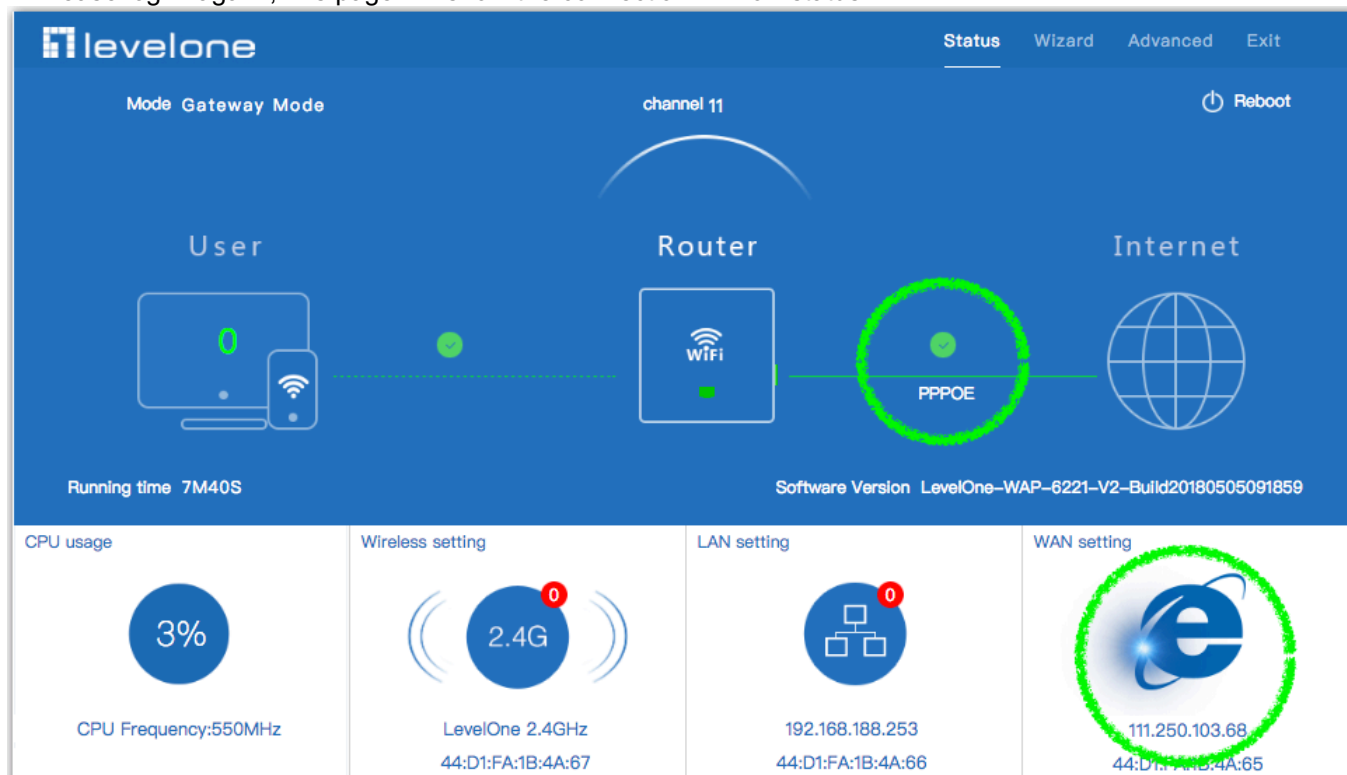
2. Wireless Setting in Gateway Mode (PPPoE), Click Next

The screenshot shows the Gateway Mode Wireless Settings page. The 'Second: Wireless' tab is selected. Below it, there are three sub-tabs: First: WAN Settings, Second: Wireless, and Third: Complete. The 'Second: Wireless' tab is active. The 'Wireless Settings' section is highlighted with an orange box. It contains the following fields: WLAN Status (ON), wireless analyzer (selected), SSID (LevelOne 2.4GHz), Channel (\* 2.462 GHz (Channel 11)), Encryption (WPA2PSK\_TKIPAES), and Key (66666666). An orange arrow points from the 'Next' button to the 'Wireless Settings' section. The 'Back' and 'Next' buttons are at the bottom.

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

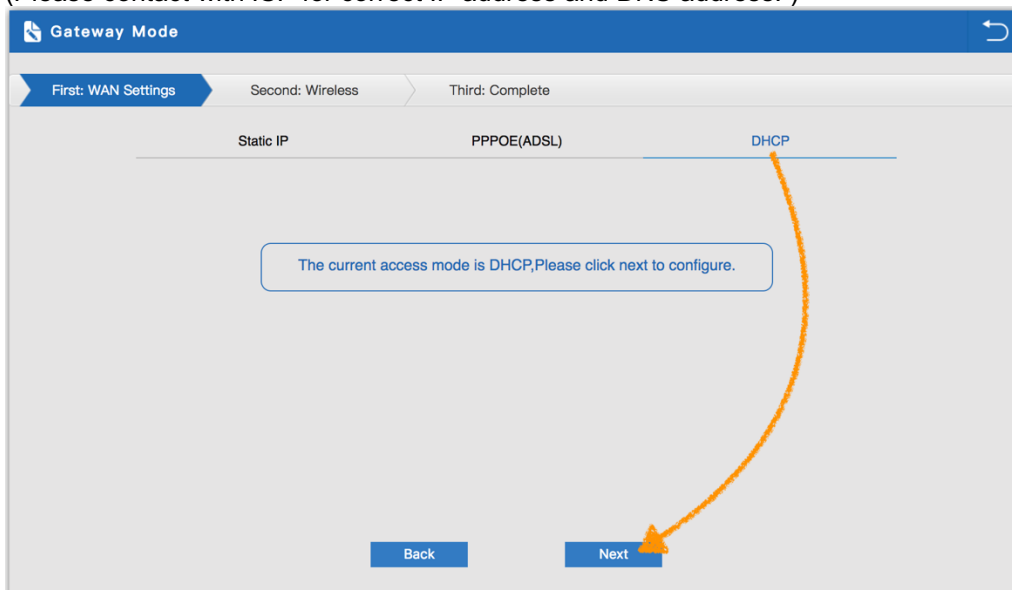


### 4. Please log in again ,This page will show the connection PPPoE status



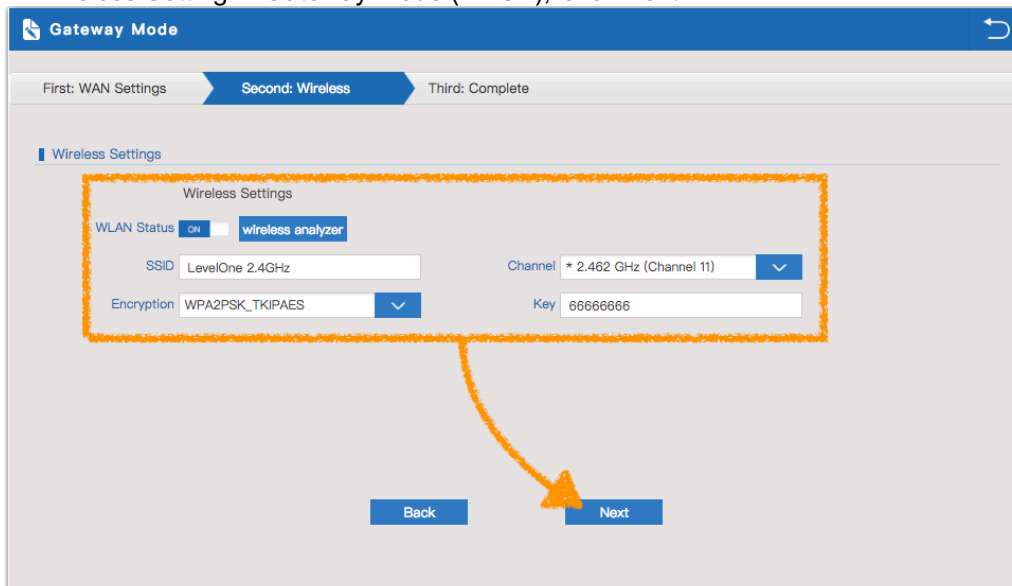
### 3.2.3 DHCP setting in Gateway Mode :

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



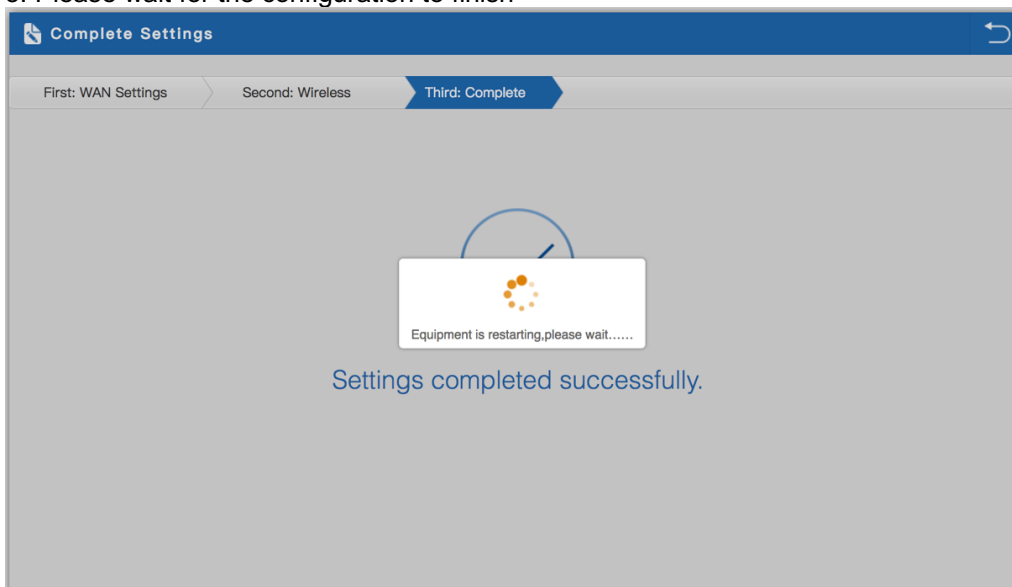
The screenshot shows the 'Gateway Mode' configuration interface. At the top, there are three tabs: 'First: WAN Settings', 'Second: Wireless', and 'Third: Complete'. Below these, there are three options for the access mode: 'Static IP', 'PPPOE(ADSL)', and 'DHCP'. The 'DHCP' option is selected and highlighted with a blue line. A message box in the center 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 'Wireless Settings' screen in 'Gateway Mode'. The 'Second: Wireless' tab is selected. The 'Wireless Settings' section is highlighted with an orange dashed box. It contains the following fields: 'WLAN Status' (ON), 'wireless analyzer' (button), 'SSID' (LevelOne 2.4GHz), 'Channel' (\* 2.462 GHz (Channel 11)), 'Encryption' (WPA2PSK\_TKIPAES), and 'Key' (66666666). At the bottom, there are 'Back' and 'Next' buttons. An orange arrow points from the 'Wireless Settings' section to the 'Next' button.

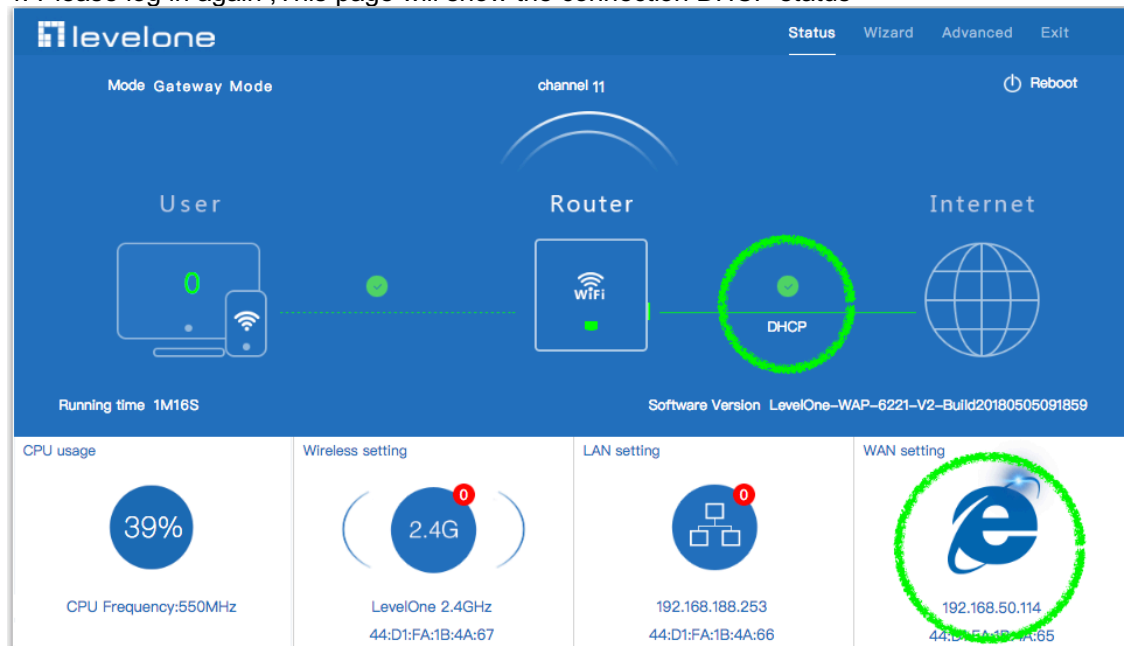
3. Please wait for the configuration to finish



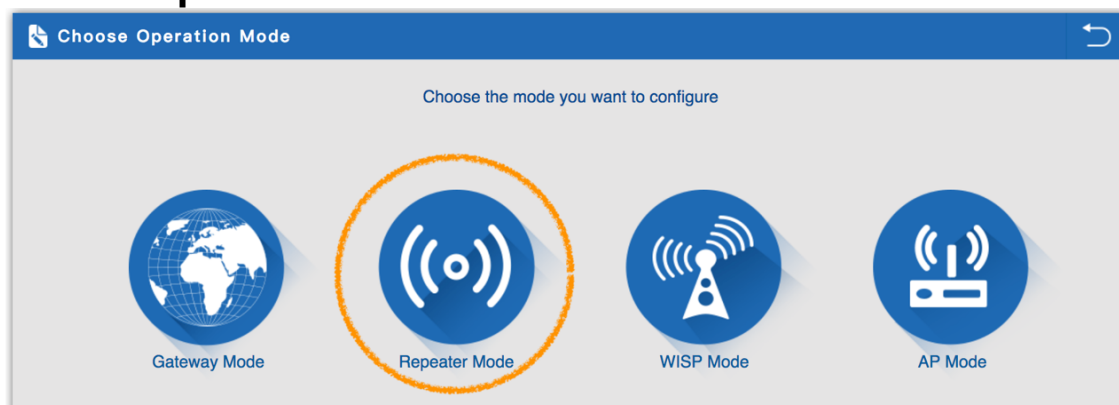
The screenshot shows the 'Complete Settings' screen. The 'Third: Complete' tab is selected. In the center, there is a loading spinner and a message: 'Equipment is restarting, please wait.....'. Below this, it says 'Settings completed successfully.'.



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



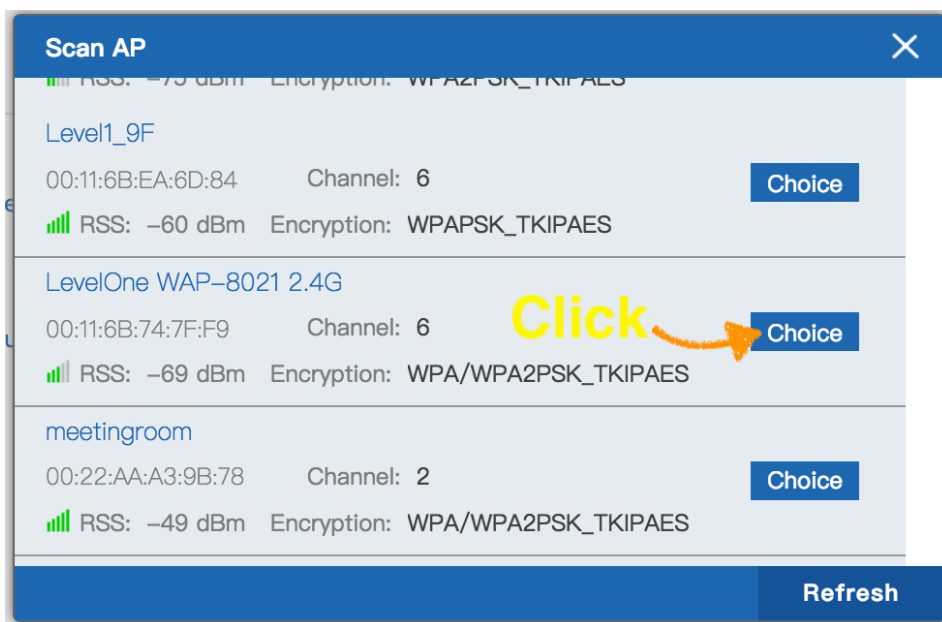
### 3.3 Repeater mode :



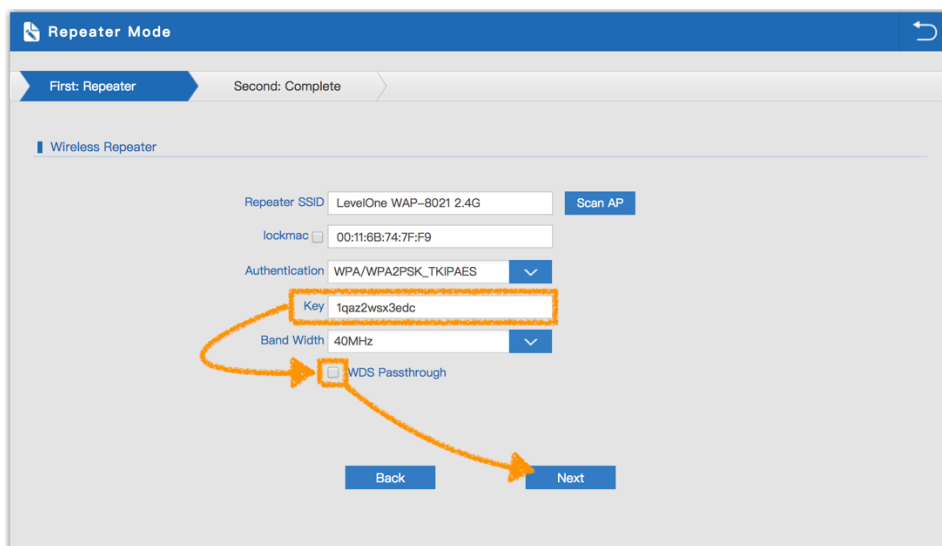
1. Select the AP's SSID want to bridge, take "wireless 2.4G" for example, then input the AP's key, click Scan AP

The screenshot shows the 'Repeater Mode' configuration screen. It has a progress bar with 'First: Repeater' and 'Second: Complete'. Under 'Wireless Repeater', there are fields for 'Repeater SSID', 'lockmac' (checkbox), 'Authentication' (dropdown set to 'none'), and 'Band Width' (dropdown set to '40MHz'). There is a checked checkbox for 'WDS Passthrough'. A blue 'Scan AP' button is to the right of the SSID field. An orange arrow points to this button with the word 'Click' in yellow text. At the bottom are 'Back' and 'Next' buttons.

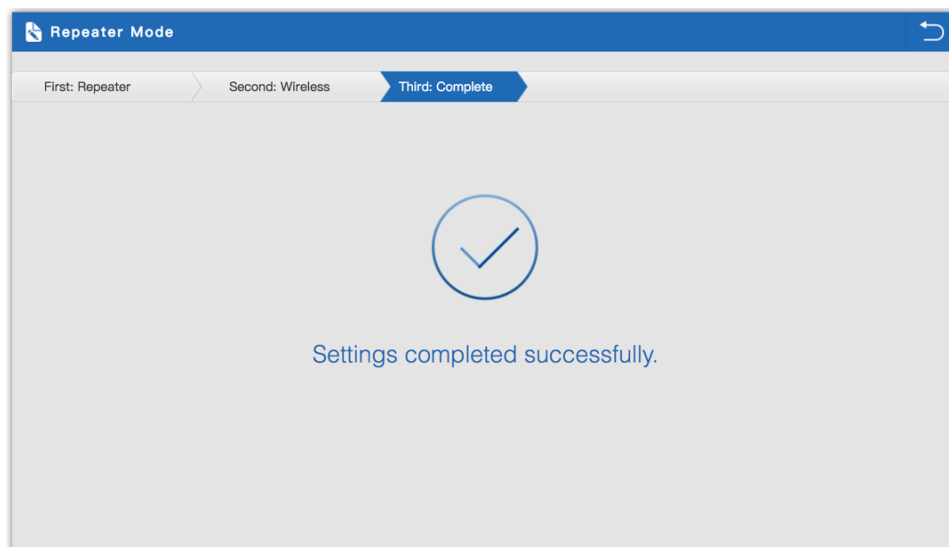
2. Please select WIFI SSID to connect



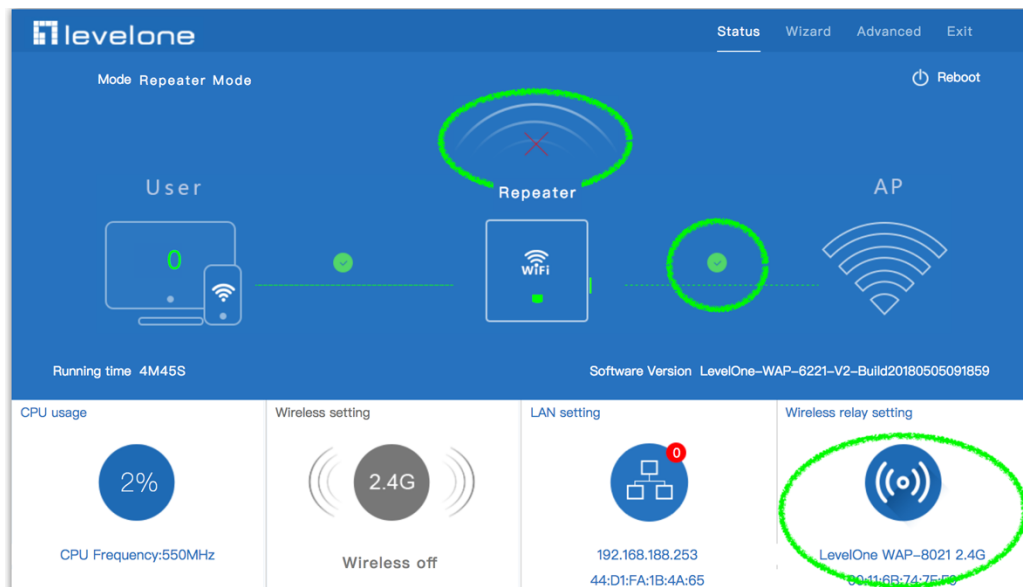
3. Enter the WIFI SSID password to be linked, When click Next



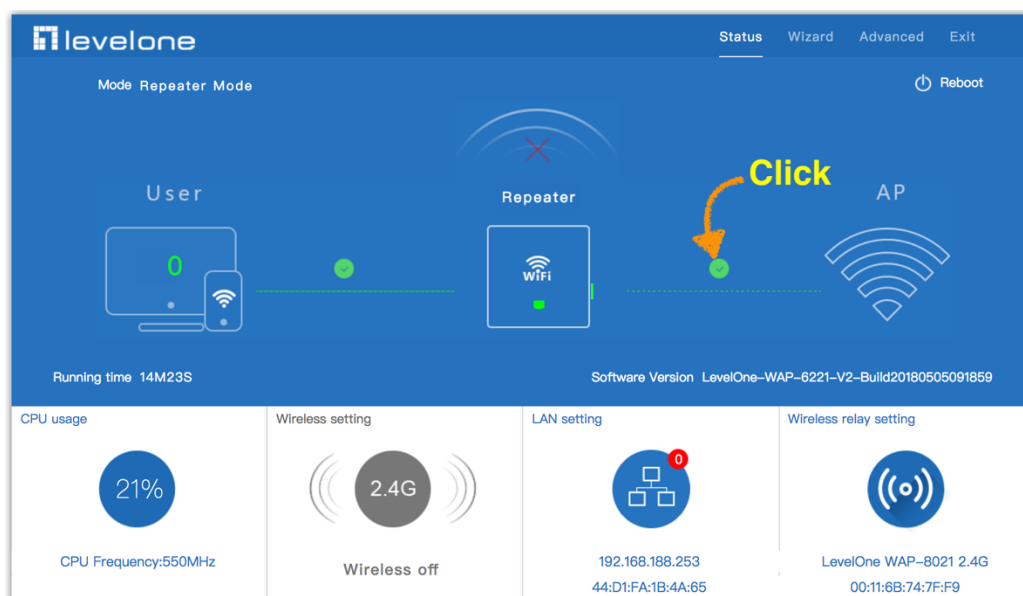
4. Click Return button, will back to Status, show Repeater mode data, show fail or success



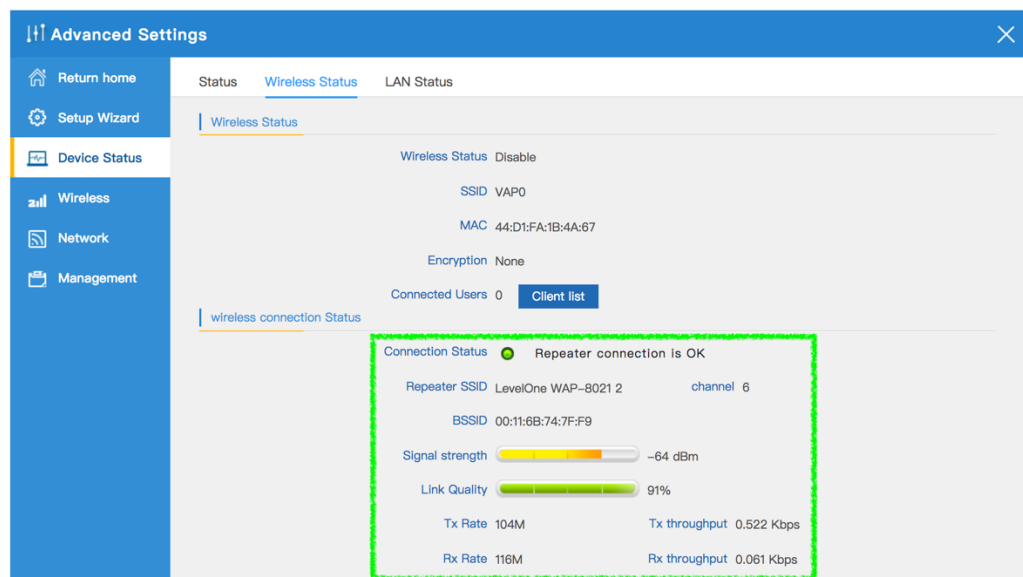
5. Check WIFI Repeater mode data (**NOTE:** In wifi repeater operation mode, the default is SSID disable.)



6. Click Status button



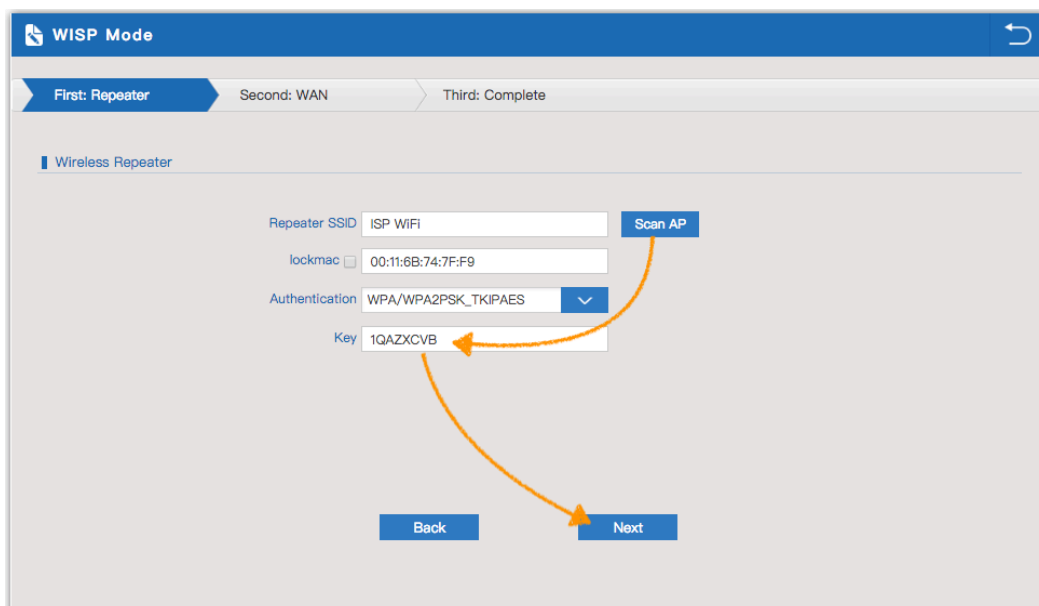
7. Check WIFI Repeater mode data



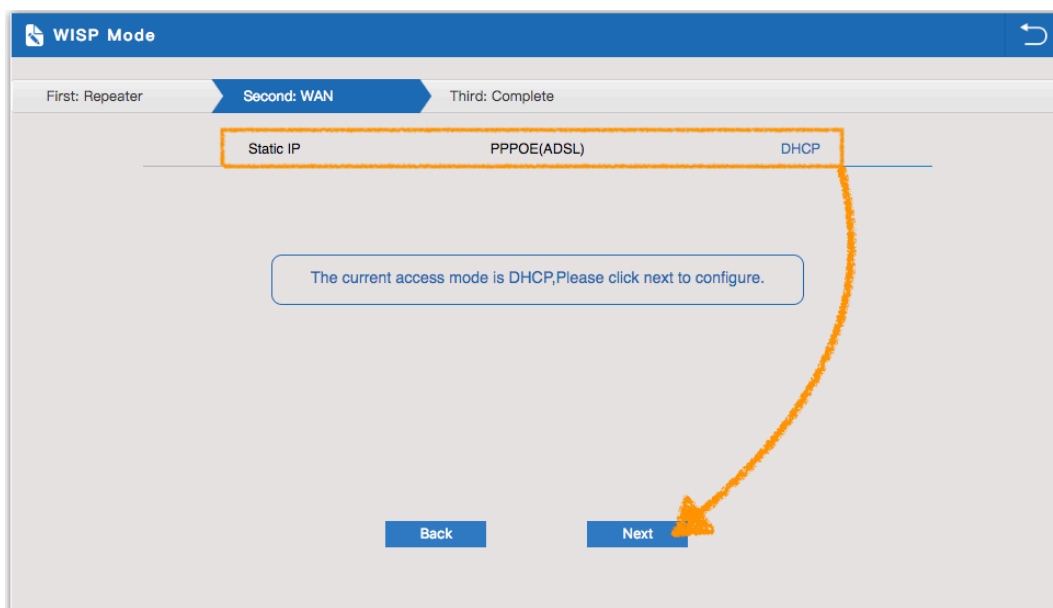
### 3.4 WISP Mode:



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)

WISP Mode

First: Repeater    Second: WAN    Third: Complete

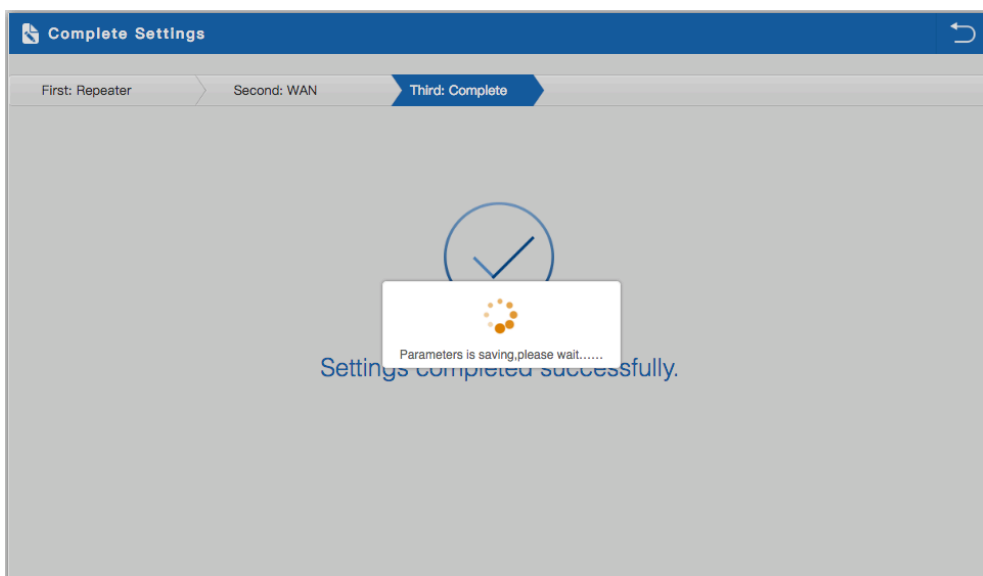
Static IP    PPPOE(ADSL)    DHCP

IP Address: 192.168.50.150    Subnet Mask: 255.255.255.0

Default Gateway: 192.168.50.1    Primary DNS: 8.8.8.8

Back    Next

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



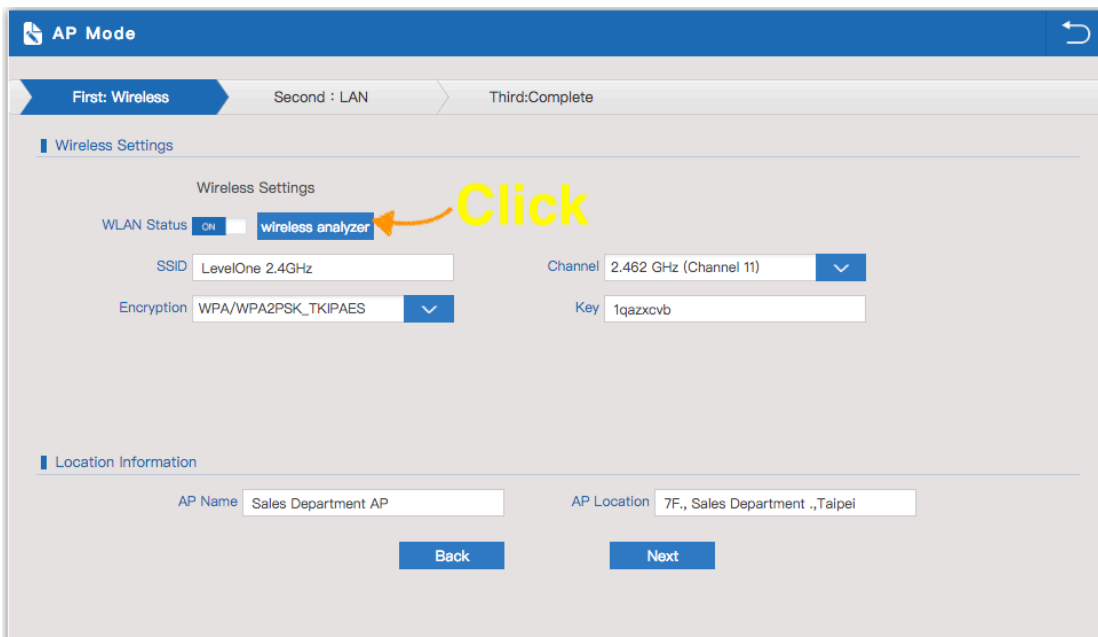
5. Check WISP Mode Status show fail or success



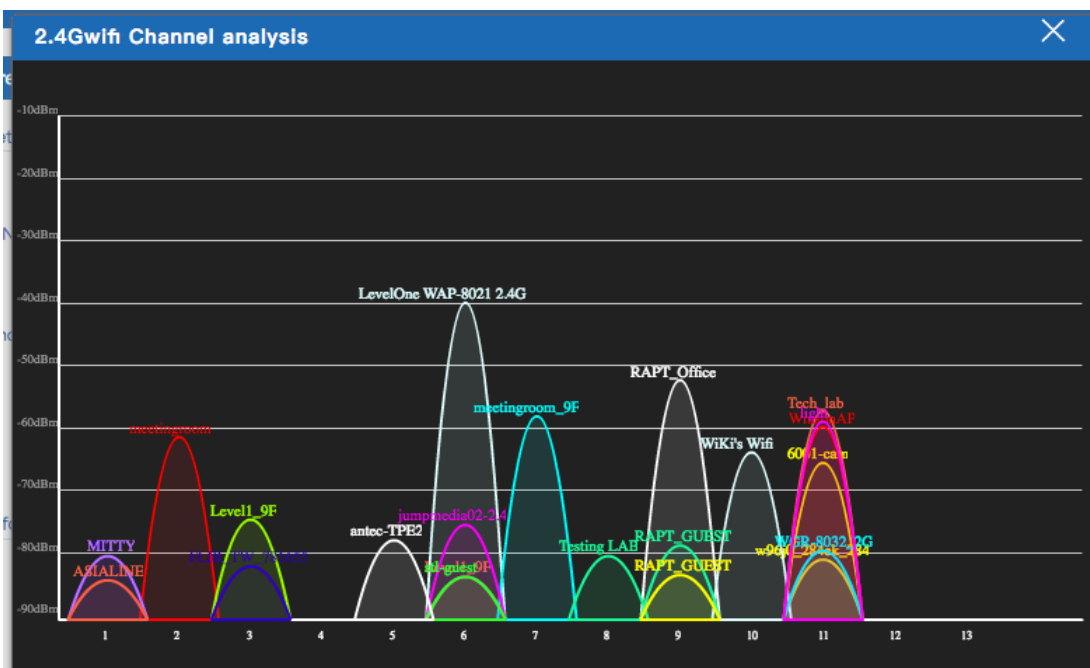
### 3.4 AP mode & Wireless analyzer :



1.To make the WAP-6221 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. 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.

The screenshot shows the 'AP Mode' configuration interface. At the top, there are three tabs: 'First: Wireless', 'Second: LAN', and 'Third: Complete'. The 'First: Wireless' tab is active. Below the tabs, there are two sections: 'Wireless Settings' and 'Location Information'. In the 'Wireless Settings' section, the 'WLAN Status' is set to 'ON' and 'wireless analyzer' is selected. The 'SSID' is 'LevelOne 2.4GHz', the 'Channel' is '2.462 GHz (Channel 11)', the 'Encryption' is 'WPA/WPA2PSK\_TKIPAES', and the 'Key' is '1qazxcvb'. In the 'Location Information' section, the 'AP Name' is 'Sales Department AP' and the 'AP Location' is '7F., Sales Department „Taipei'. There are 'Back' and 'Next' buttons at the bottom. An orange arrow points from the 'Next' button in the 'Wireless Settings' section to the 'Next' button in the 'Location Information' section.

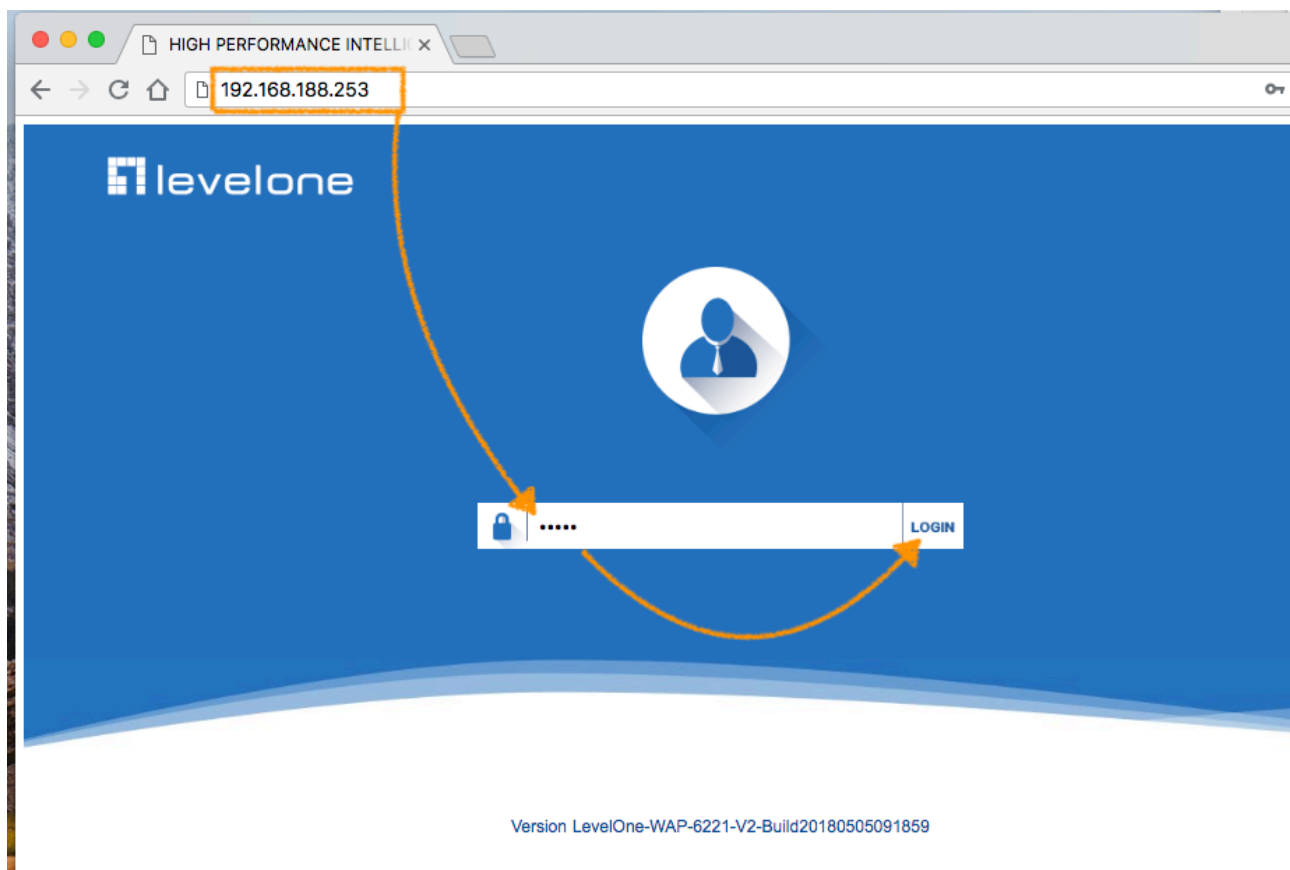
4. Set according to environmental requirements.

The screenshot shows the 'AP Mode' configuration interface. At the top, there are three tabs: 'First: Wireless', 'Second: LAN', and 'Third: Complete'. The 'Second: LAN' tab is active. Below the tabs, there is a section titled 'LAN setting'. In this section, the 'Access Type' is set to 'Static IP'. There are 'Back' and 'Next' buttons at the bottom. An orange arrow points from the 'Next' button to the 'Next' button in the 'LAN setting' section.

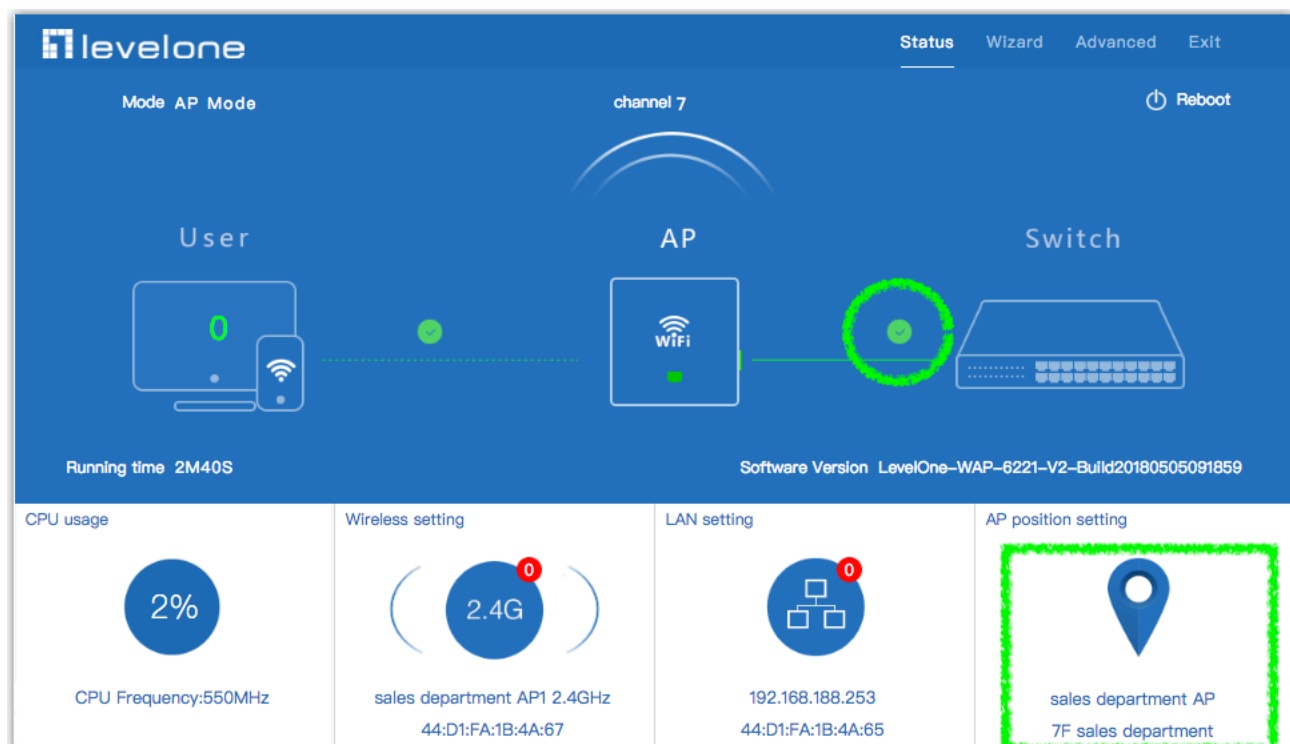
5. Demo Static IP setting

The screenshot shows the 'AP Mode' configuration interface. At the top, there are three tabs: 'First: Wireless', 'Second: LAN', and 'Third: Complete'. The 'Second: LAN' tab is active. Below the tabs, there is a section titled 'LAN setting'. In this section, the 'Access Type' is set to 'Static IP'. The 'IP' is '192.168.188.253', the 'Subnet Mask' is '255.255.255.0', and the 'Manage server IP' is '192.168.188.21'. There are 'Back' and 'Next' buttons at the bottom. An orange arrow points from the 'Next' button to the 'Next' button in the 'LAN setting' section.

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



7. Check AP Mode Status show fail or success.

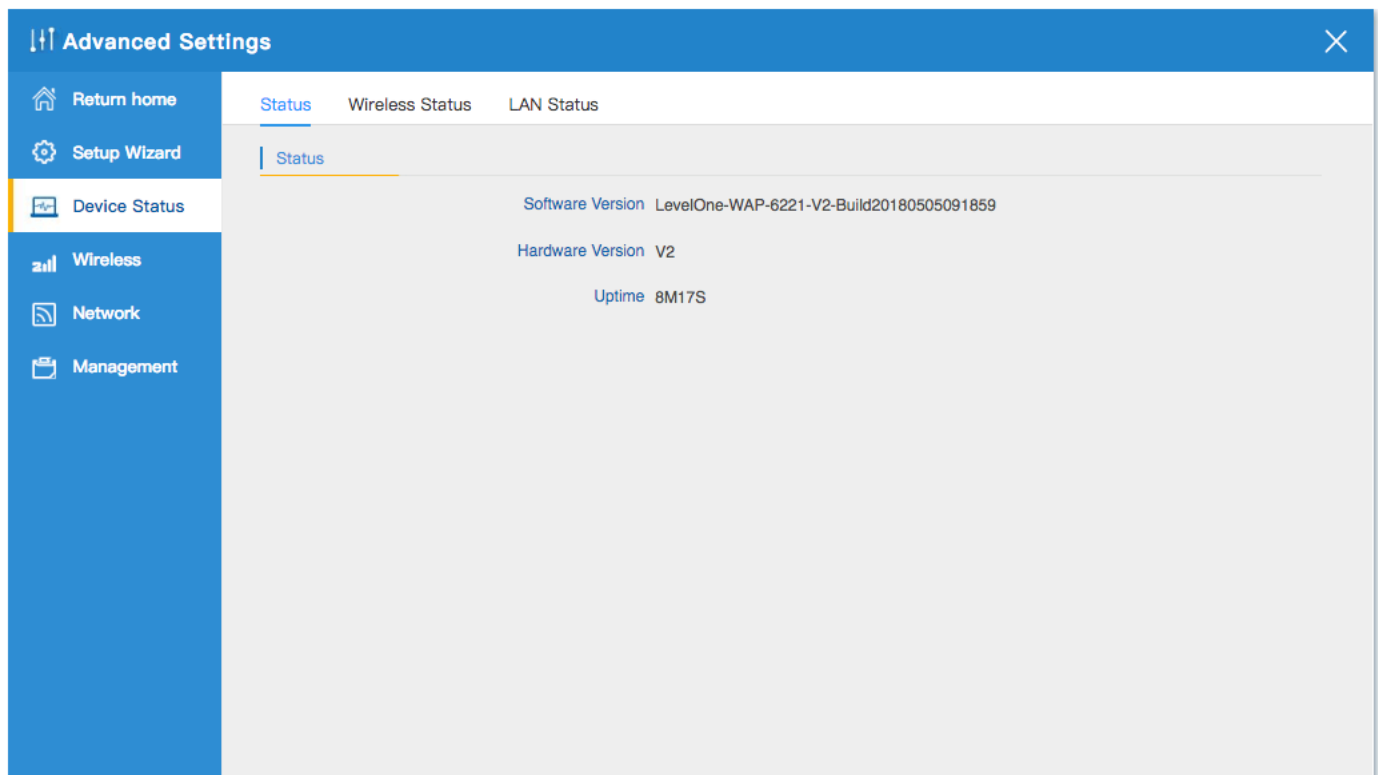




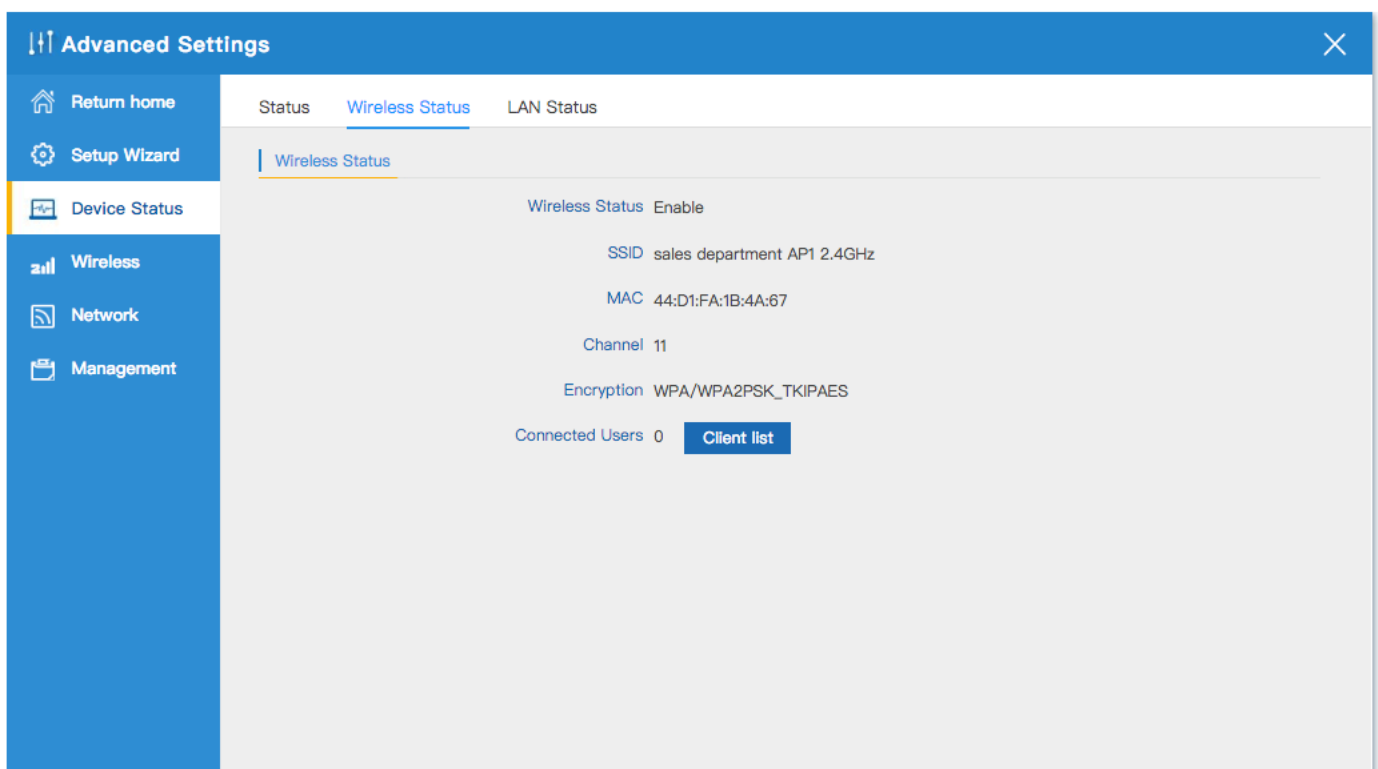
# Chapter 4 Advanced Setting

## 4.1 Device Status

1. **Status:** Mainly to check the wireless AP's firmware version, hardware version, uptime info.



2. **wireless status:** Show wireless AP's SSID, MAC address for WiFi, Channel, Encryption, Client List info.



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 links: 'Return home', 'Setup Wizard', 'Device Status', 'Wireless', 'Network', and 'Management'. The main content area displays the following information:

- LAN IP: 192.168.188.253
- Subnet Mask: 255.255.255.0
- MAC: 44:D1:FA:1B:4A:65
- Manage server IP: 192.168.188.21
- DHCP Status: Disable
- DHCP address range: 192.168.188.2 — 192.168.188.252
- Assigned IP: 0

A 'DHCP list' button is located at the bottom right of the DHCP address range section.

## 4.2 Wireless

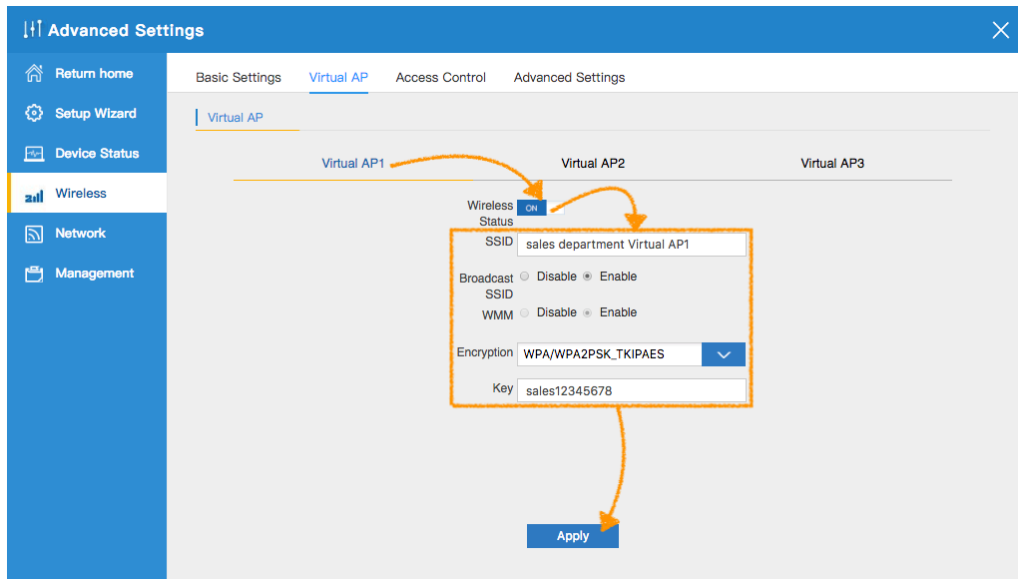
1. **Basic Settings :** Mainly to configure the wireless SSID, password, band width ,encryption, channel.

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

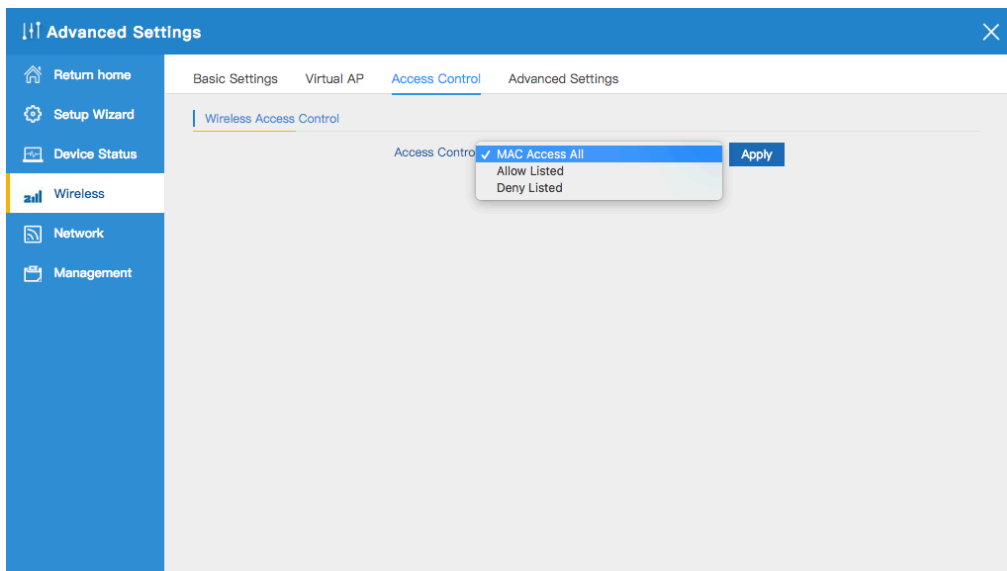
- Wireless Status: ☒ ON [wireless analyzer](#)
- SSID: sales department AP1 2.4GHz
- Broadcast SSID: ☐ Disable ☒ Enable
- WMM: ☐ Disable ☒ Enable
- Channel:
- Channel: \* 2.462 GHz (Channel 11)
- Authentication:
- Key: 1QAZXCVB

An 'Apply' button is located at the bottom center of the page.

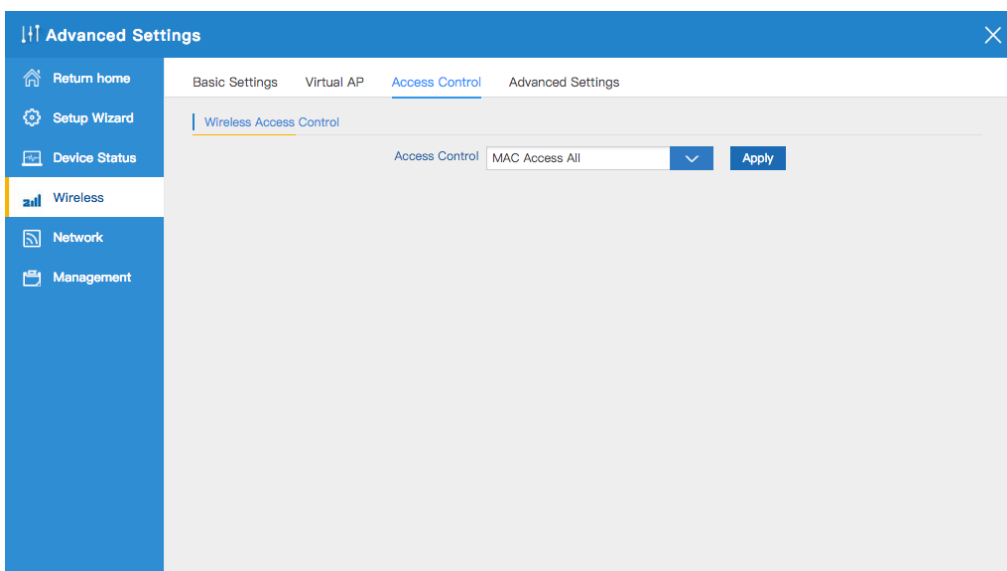
**2. Virtual AP :** There are 3 virtual AP in 2.4G wireless, if need enable multi SSIDs, then users can configure it showed in following picture:



**3. Access Control :** Allow or deny the users access into this wireless AP based on MAC address.

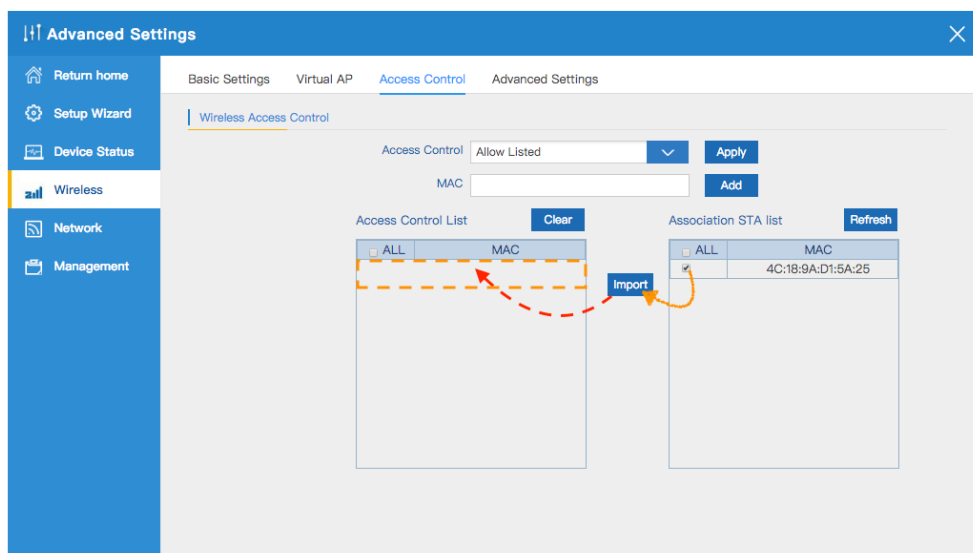


**4. Allow all the users access into this wireless AP**



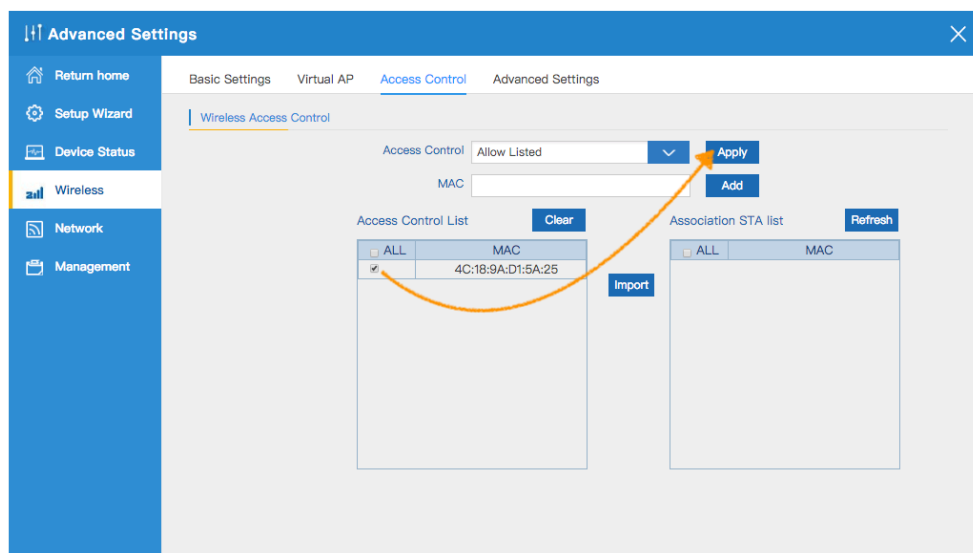
5. Only users who have joined the MAC address list can access the wireless AP.

The following is a demonstration of teaching . Add the user MAC address in the list to the access control list



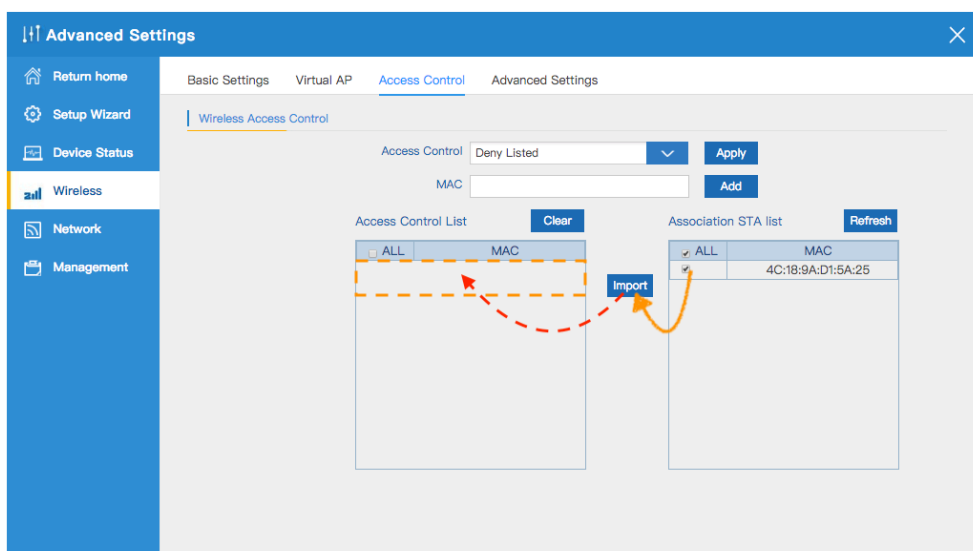
6. After the user's MAC address is added to the access control list, Click Apply.

After setting is completed, it will start to allow users access to this wireless AP function



7. Users who have joined the MAC address list are denied access to the wireless AP.

8. The following is a demonstration of teaching . Add the user MAC address in the list to the access control list



9. 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

**Advanced Settings**

Basic Settings Virtual AP **Access Control** 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
-----	-----

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

**Advanced Settings**

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

Advanced Settings

Regional: ETSI Channel(1-13)

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

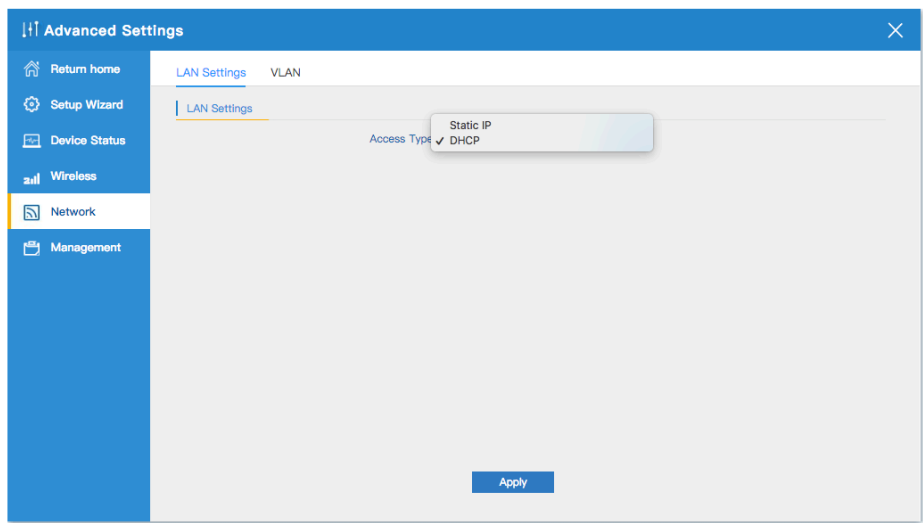
MAX User: 64 (Range 0-64 0 not limited)

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

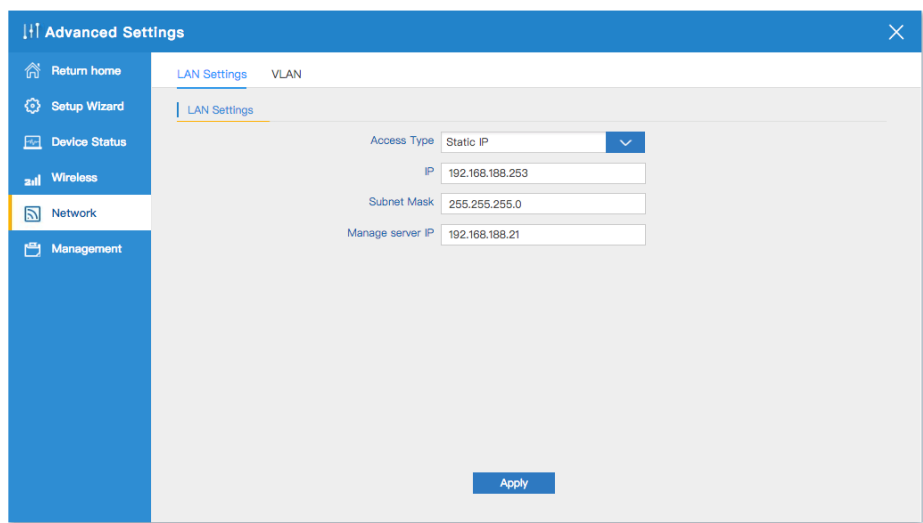
Aggregation ☒ Short GI ☒ User isolation ☐

# 4.3 Network

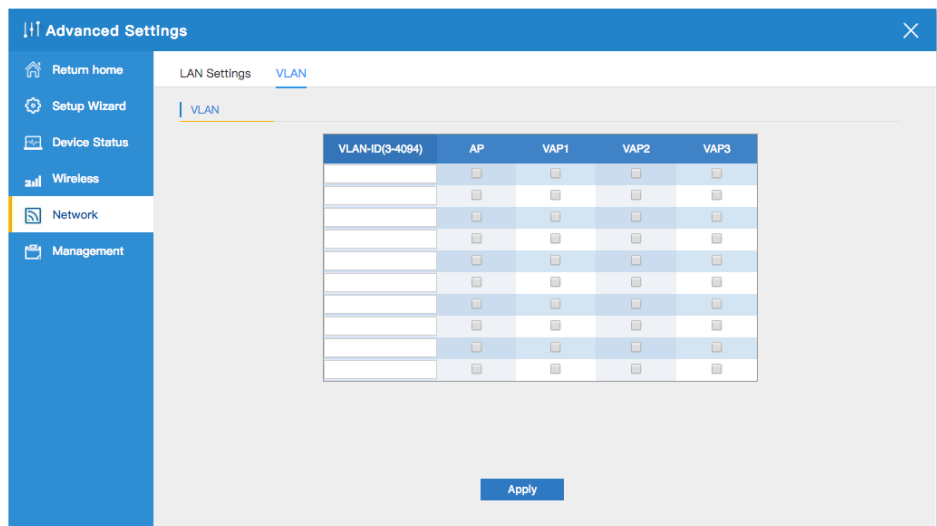
1.LAN Settings: The network default value is DHCP.



2. If you want to manage the WAP-6221 conveniently, you can set it to Static IP mode, but it needs to cooperate with the front-end network architecture. For example, the front-end network architecture is 192.168.188.x /24 ; Gateway 192.168.188.21. WAP-6221 Network can be set to the same network segment.

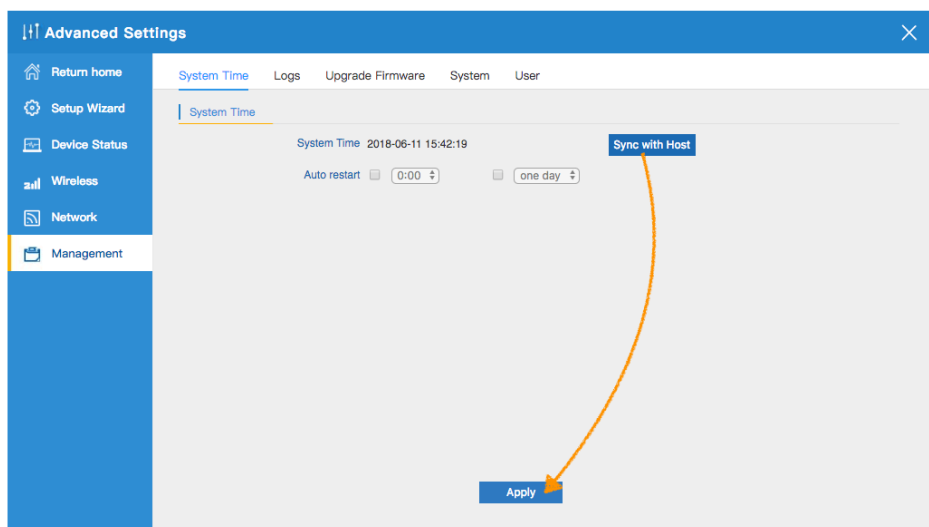


3. **VLAN** : Need Supports 802.1Q Managed Switch and enter the corresponding VLAN ID

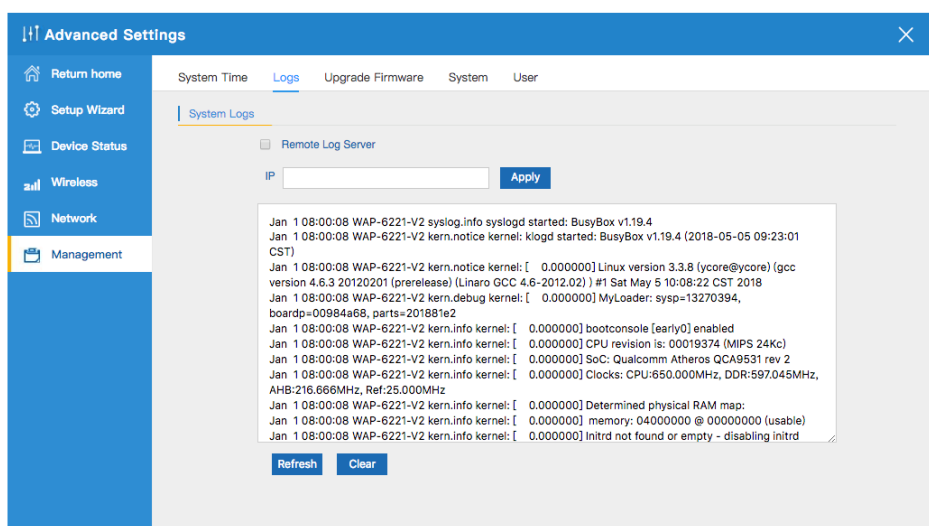


## 4.6 Management

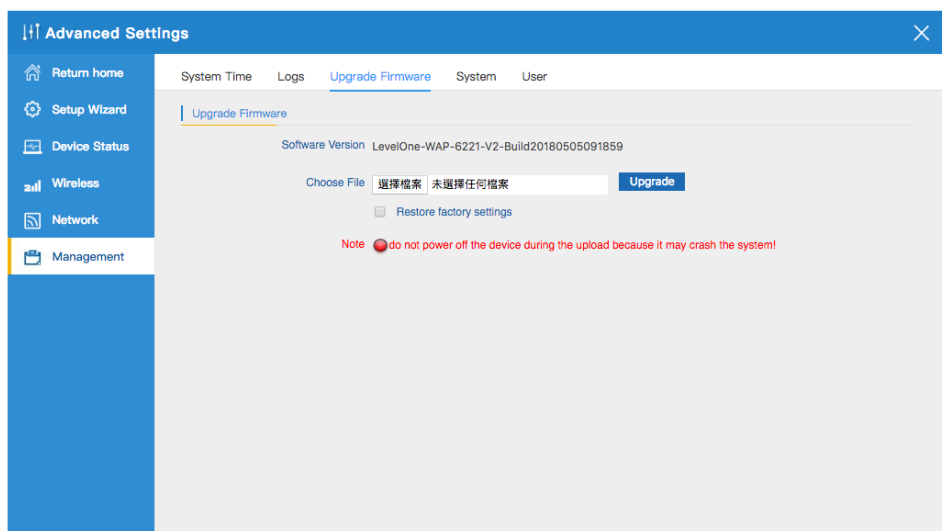
**1.System Time** : You can click sync with host: to automatically synchronize the current system time, or click auto restart to manually set the time



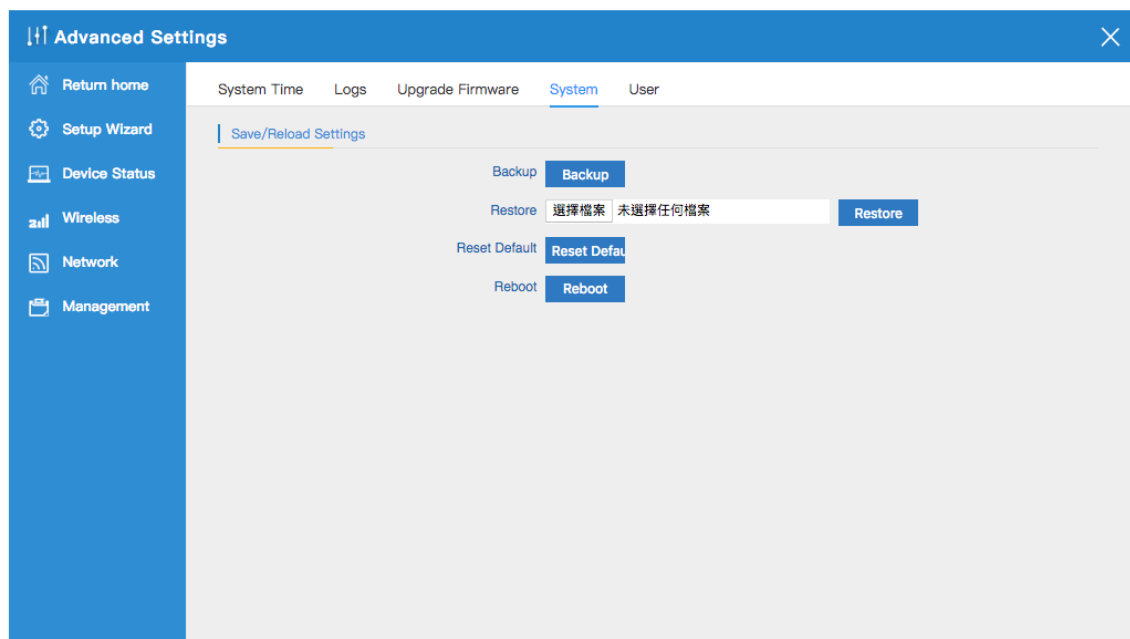
**2.Logs** :In Logs part, you can copy the running history of the device to consult the engineers when you have any trouble



**3.Upgrade Firmware** : Allows you to browse the new firmware in your computer and upgrade. Please do not power off the device during upgrade. ( **Note** : The update firmware is recommended to use the connection Network Cable update . Not recommended to use the wireless connection method to update the firmware.)

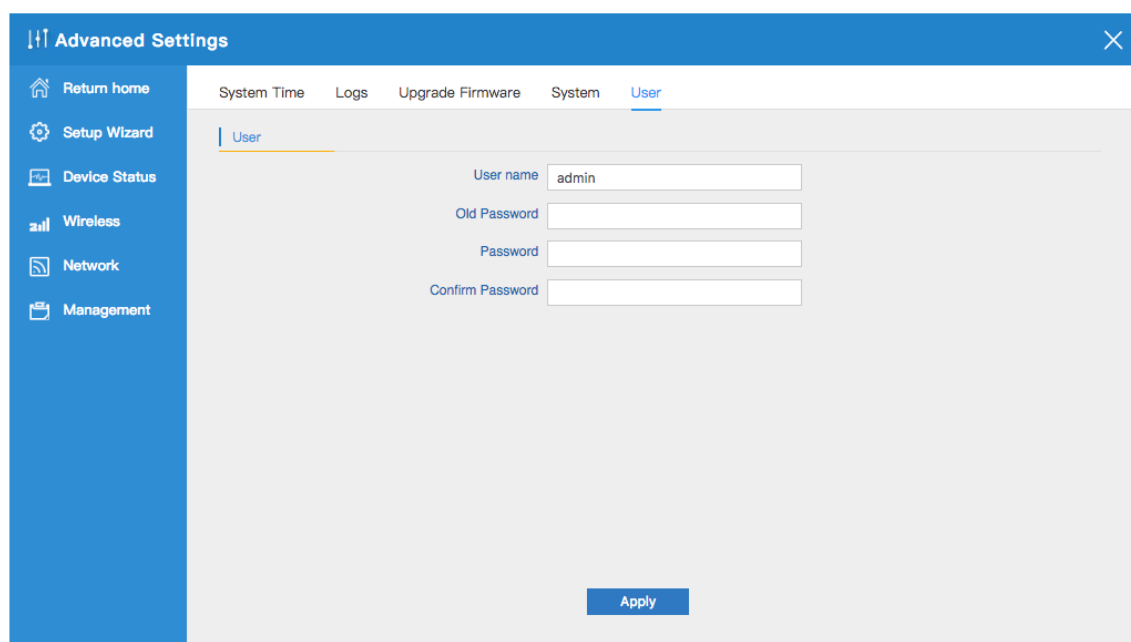


**4.System** :You are able to backup the current configuration to your PC and restore by applying the configuration file from your PC. And you can Reset and Reboot the device with just one click



The screenshot shows the 'Advanced Settings' window with the 'System' tab selected. The left sidebar contains links: Return home, Setup Wizard, Device Status, Wireless, Network, and Management. The main content area has tabs for System Time, Logs, Upgrade Firmware, System, and User. Under the 'System' tab, there is a 'Save/Reload Settings' link. Below it, there are four action buttons: 'Backup', 'Restore', 'Reset Default', and 'Reboot'. The 'Restore' button is disabled, and a message '未選擇任何檔案' (No file selected) is displayed next to it.

**5.User** : Management and change the password for Log in



The screenshot shows the 'Advanced Settings' window with the 'User' tab selected. The left sidebar is the same as in the previous screenshot. The main content area has tabs for System Time, Logs, Upgrade Firmware, System, and User. Under the 'User' tab, there is a 'User' link. Below it, there are four input fields: 'User name' (containing 'admin'), 'Old Password', 'Password', and 'Confirm Password'. At the bottom right, there is an 'Apply' button.



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