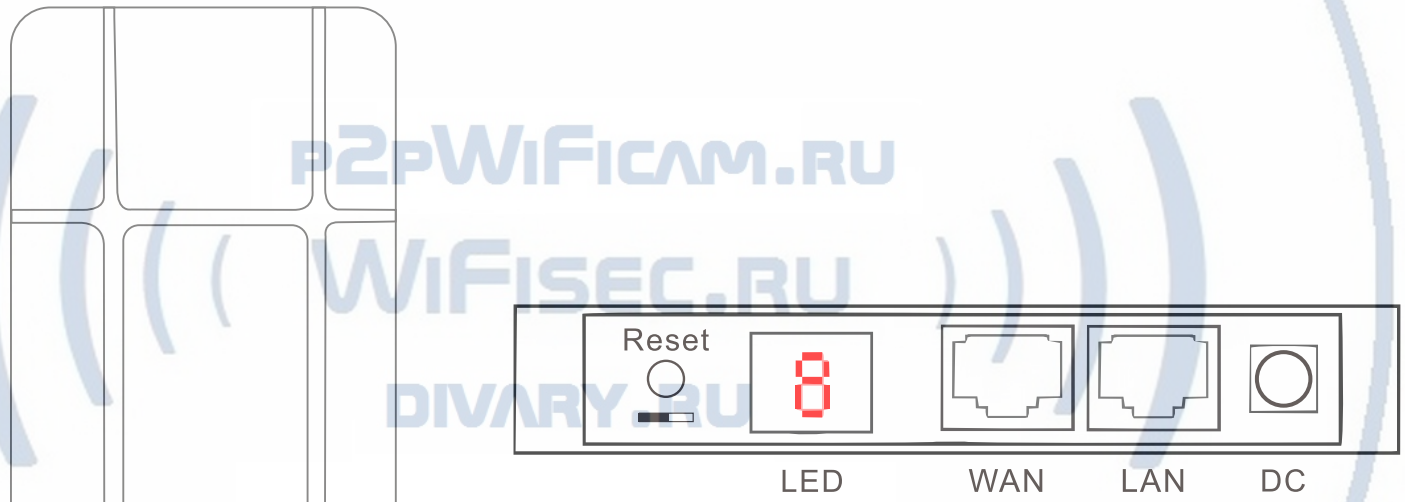
Outdoor CPE User Manual



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V2020.06.18

This is the User Manual of Outdoor Bridge with Qualcomm Chipset, which will approximate guide you how to set and apply this product. It provide a convenient graphical interface for network construction and maintenance person, as well as a user through a simple and accurate operation.
Attention:

1. Check box contents:

Outdoor CPE
PoE Power adapter (for 24V Passive PoE device)
LAN cable
User Manual
Installation Accessory

2.Warning:

·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.

Contents

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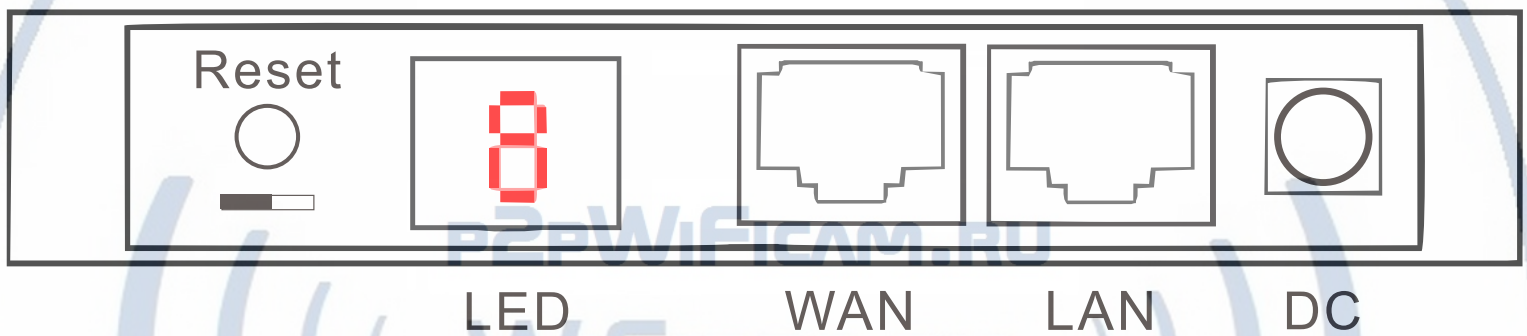
CPE interface:



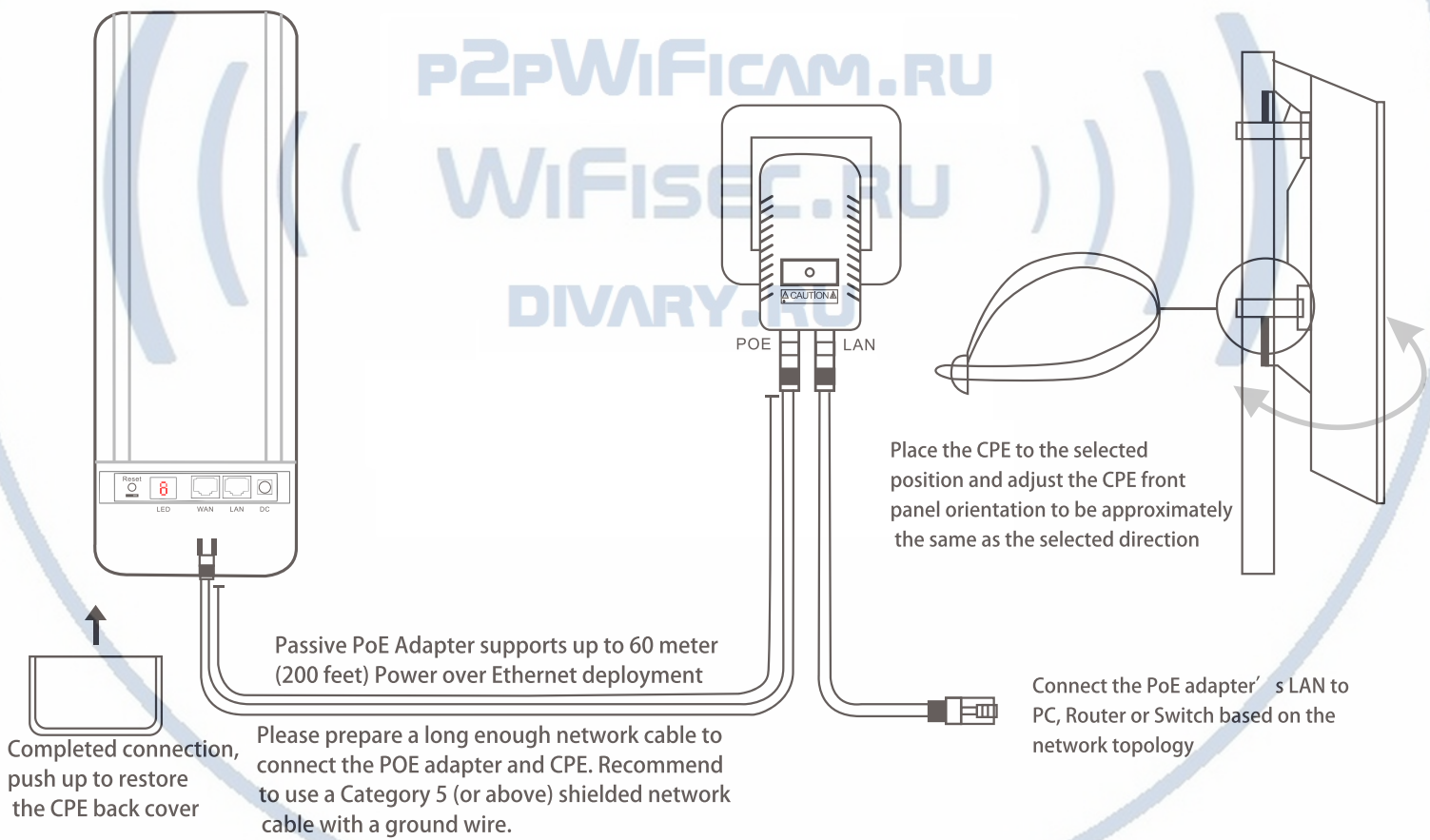
Reset: Short press to switch the digital display number (that is, press to release), long press to restore the factory settings.
LED frequency: display paired numbers, master and slave lights.
WAN port: connect to external network.
Toggle switch: switch the working mode, the left is AP mode, the light is off, the right is the client mode, the light is on.
LAN port: LAN network port, can connect LAN equipment.
DC: power interface.

1.1Installation flow chart

Hardware connection 》 Set up your computer 》 Login management interface 》 Set up your CPE 》 Test wireless 》 Erection and installation

1.2Hardware installation

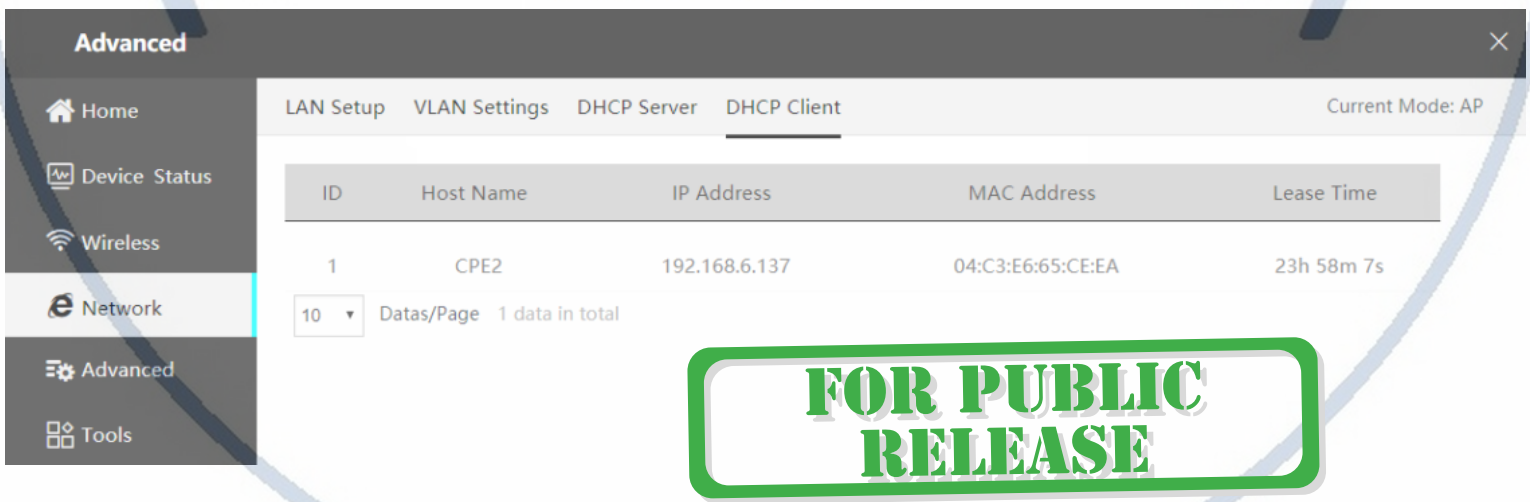
PoE Power Connection and Installation
There is a PoE adapter and Installation Accessory in the box, then pls install and power the outdoor CPE as following pictures:



The POE network port of the POE power supply is connected to the WAN port of the outdoor CPE through a network cable, and the power supply is plugged into the socket to supply power to the CPE through the network cable. Note that the POE power supply needs to match the voltage and current supported by the CPE. Here the power supply supports 24V 0.5A/1A.

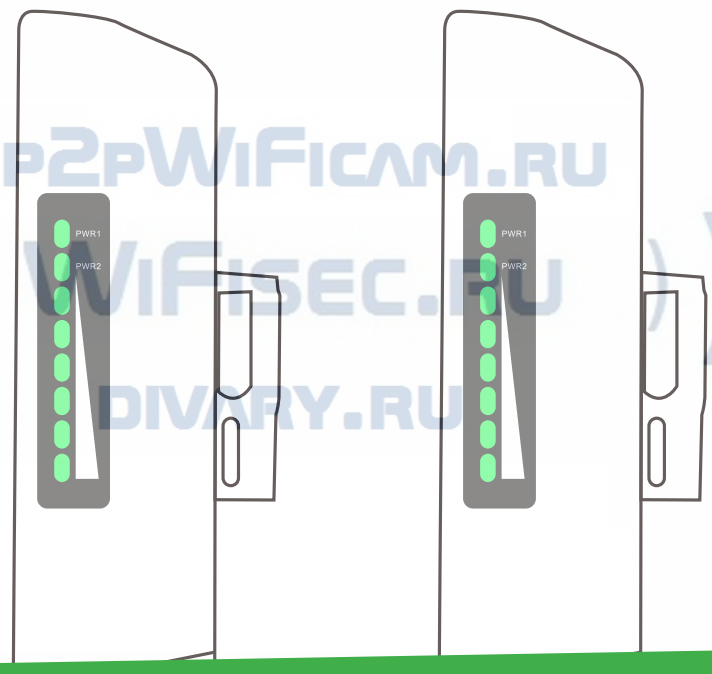
Chapter 2: Digital display bridge

1.The default digital display of the device is 0. Short press the Reset key to switch the digital display digits.
2.The default switch of the device is AP mode (left).
3.Toggle the two devices into AP mode (left) and client mode (right), the devices will automatically pair.
4.After the pairing is successful, the IP of the AP mode (left) is: 192.168.6.1, and the IP of the client mode (right) is issued by the AP, as shown in the following figure.



Chapter 3: LED signal light

PWR1/PWR2: system light of the device. After the device starts normally, the system light is always on.
Signal light: After the device is successfully paired, the 6 signal strength lights are always on

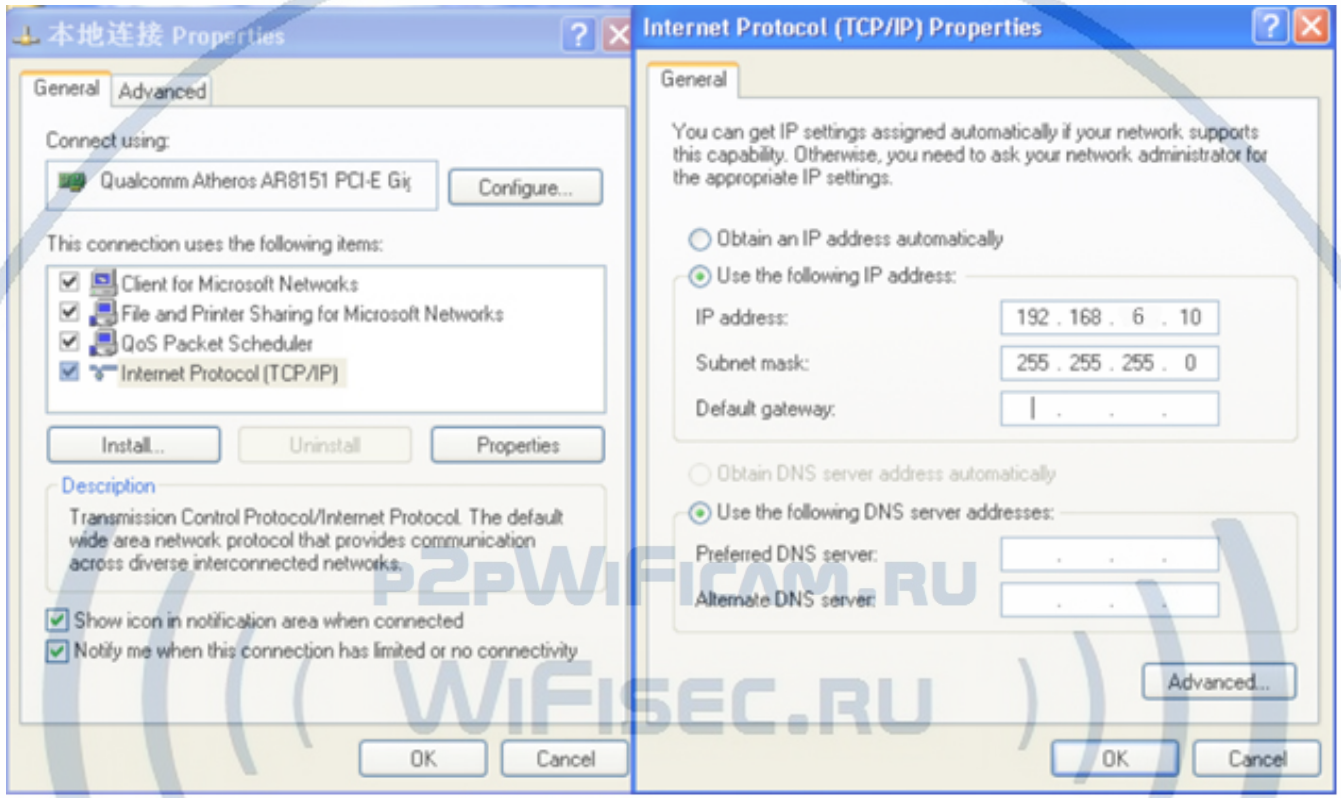


Chapter 4: WEB GUI Login

1）Connect the Outdoor CPE with computer by wired or wireless

2）The default IP address of this outdoor CPE is 192.168.6.1, Configure the PC's local connection IP address as 192.168.6.X (X is number from 2 to 254), subnet mask is 255.255.255.0, follow P4 and P5 to finish.

P4 Setting of computer's IP address



P5 Setting of computer's IP address

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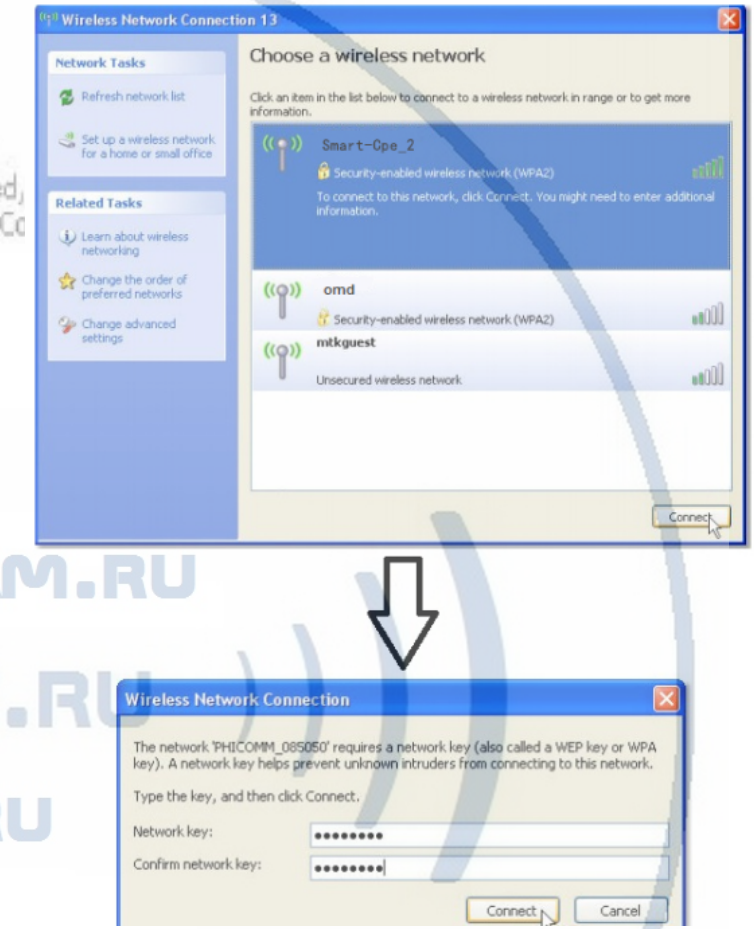
If you want to connect our CPE by wireless after IP address configuration, pls right click Wireless networking Connection, then View Available Wireless Networks, our CPE's default SSID is Smart-Cpe_X, passwords: 88888888, Click Refresh network list , double click the correct SSID and input the passwords, if have, then connect, pls refer to P6 and P7

P6 CPE Wireless Connection

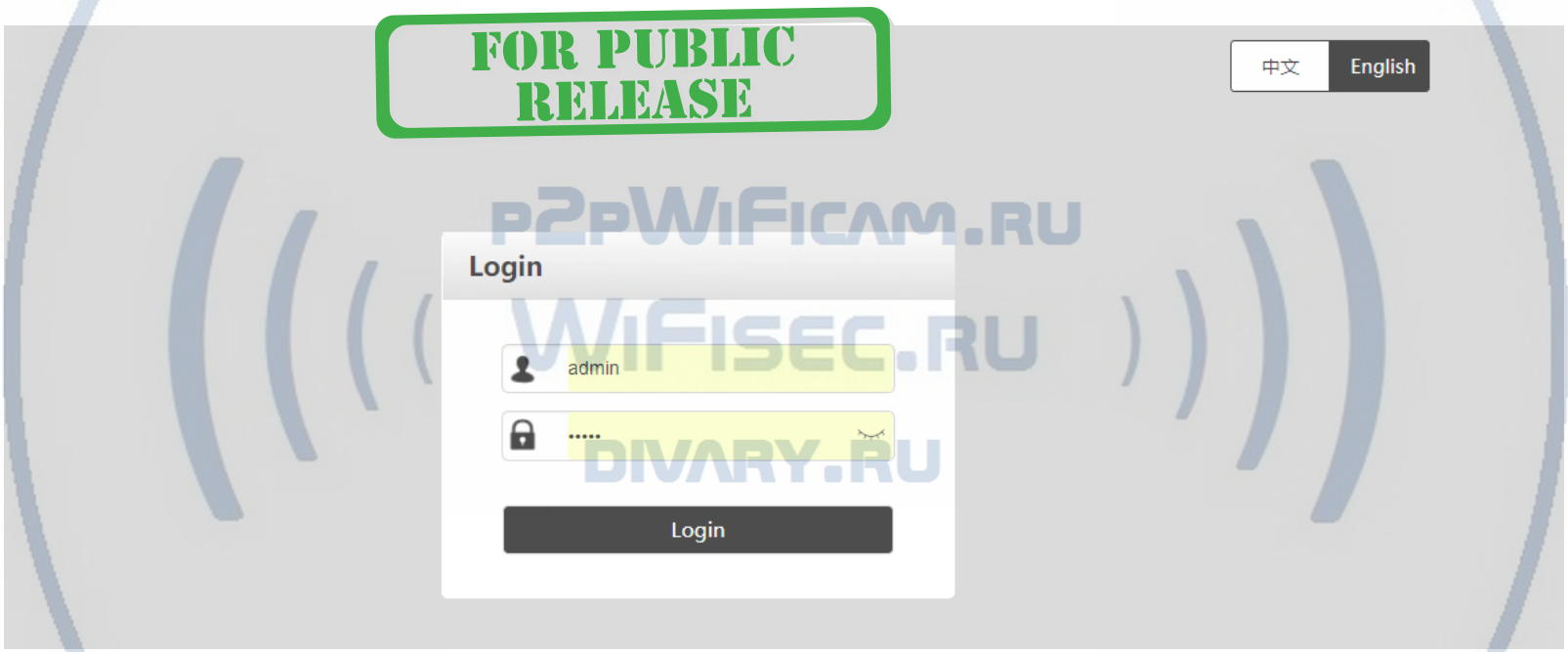


P7 CPE Wireless Connection

Chapter 5 : WEB GUI interface Setting:

Log into the CPE system

CPE management page login default IP address: 192.168.6.1 account/password: admin



5. 1 User Login Page:

After Login in the user, then will pop up the CPE working mode picture showed as follow:

In this page, show the AP's five working mode: Router, Universal Repeater, WISP, AP and Repeater.
1. Router Mode:router function, WAN port connection modem (ADSL cat or fiber cat) dial-up Internet or WAN port dynamic, static IP address mode.

2. Universal Repeater Mode:Enables wireless repeater and forwarding without matching with the upper device.

3. WISP Mode:Wireless WAN client wirelessly connects to the Operator's wireless base station for local LAN network sharing.

4. AP Mode:In this mode, NAT, DHCP, firewall and all WAN-related functions are turned off. All wireless interfaces and wired interfaces are bridged together, without distinguishing between LAN and WAN.

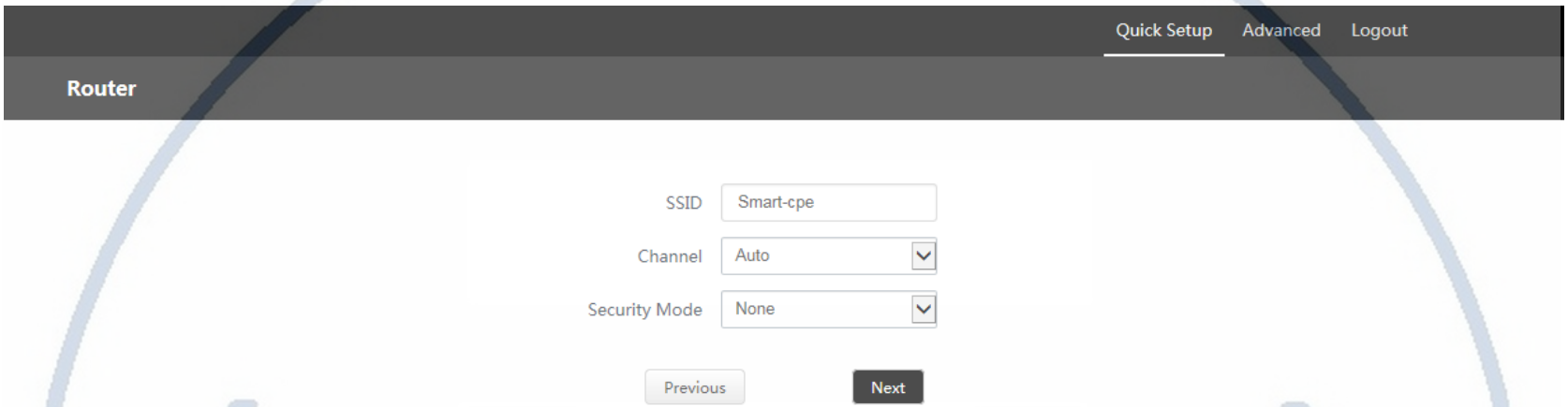
5. Repeater Mode： In this mode, it usually refers to the point to point situation. The wireless CPE at both ends of the bridge only communicates with the wireless CPE at the other end. The device can add the MAC address of the other party by scanning the available network, and the encryption mode of both devices must be consistent.

Please confirm the operation mode first before configuration starting.

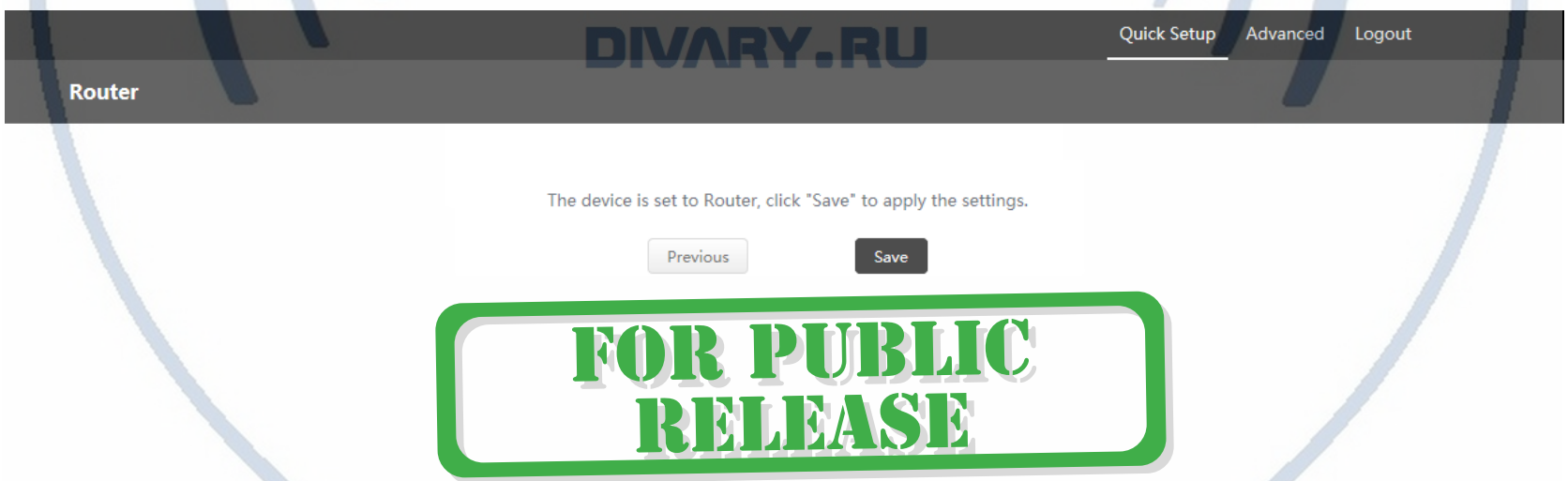
5.1.1 Router Mode:

Before Click Router mode, confirm your internet will be static IP, PPPoE, or DHCP:

Please choose the right WAN setting mode, then click next to continue.

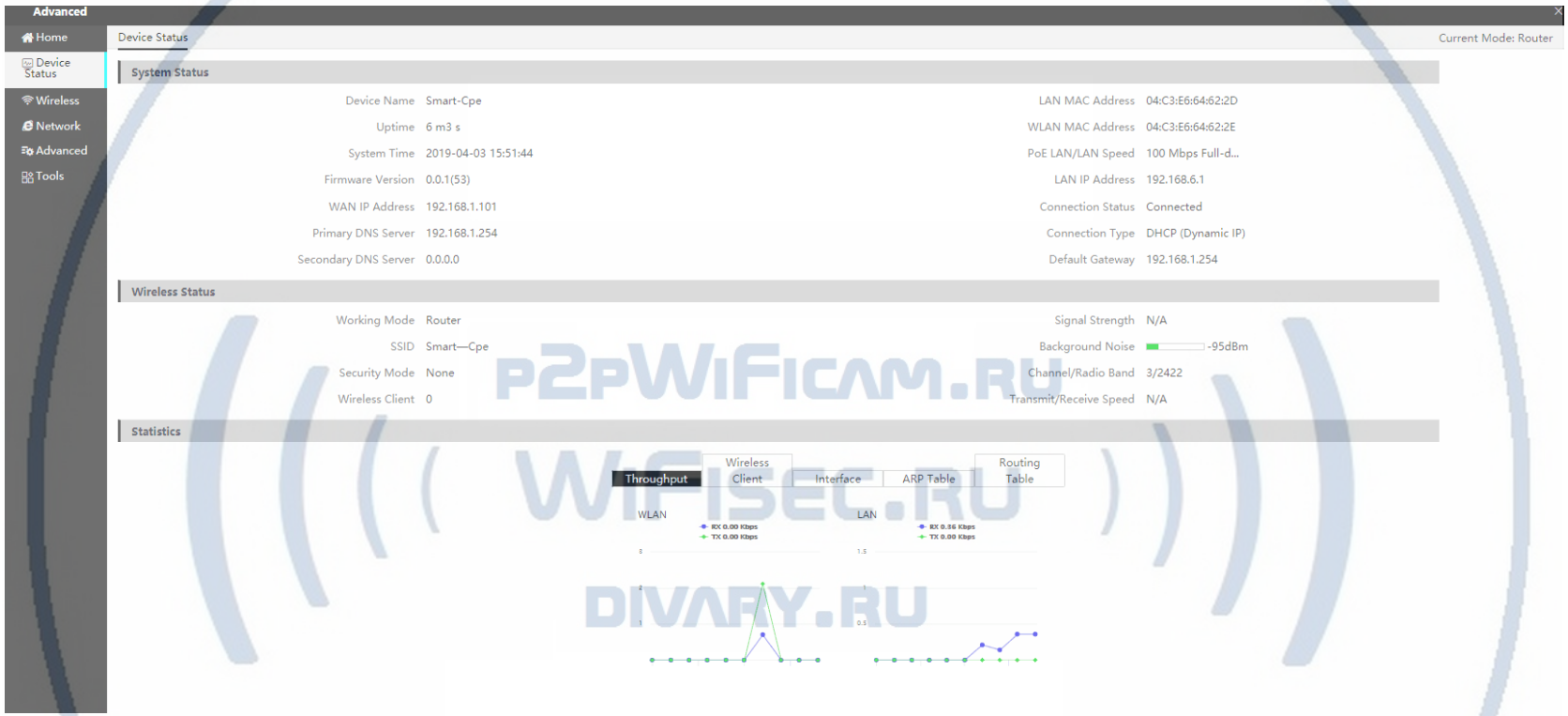


When click Next, then will complete the Router mode setting and show following picture:



Complete the setting in Router Mode

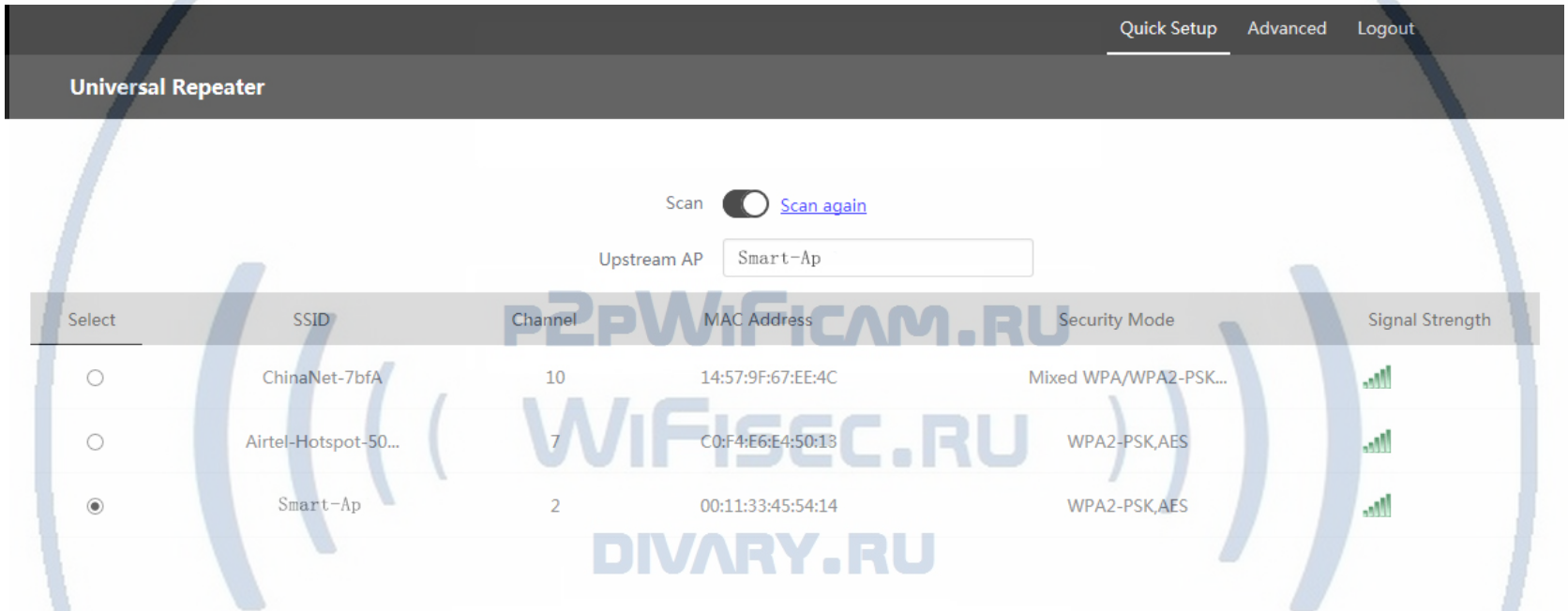
When in Advanced setting, you can check Device Status, will show wireless router's SSID, internet connection, LAN connection status showed as follow:



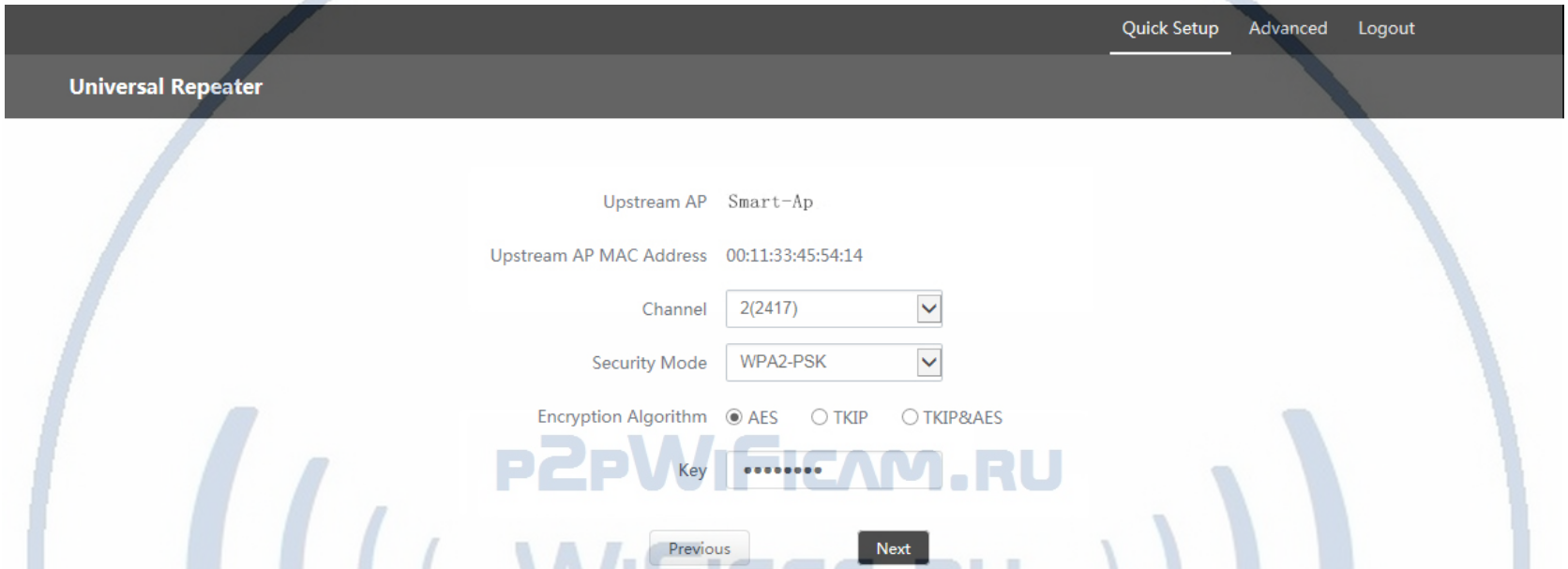
Status in Router

5.1.2 Universal Repeater mode

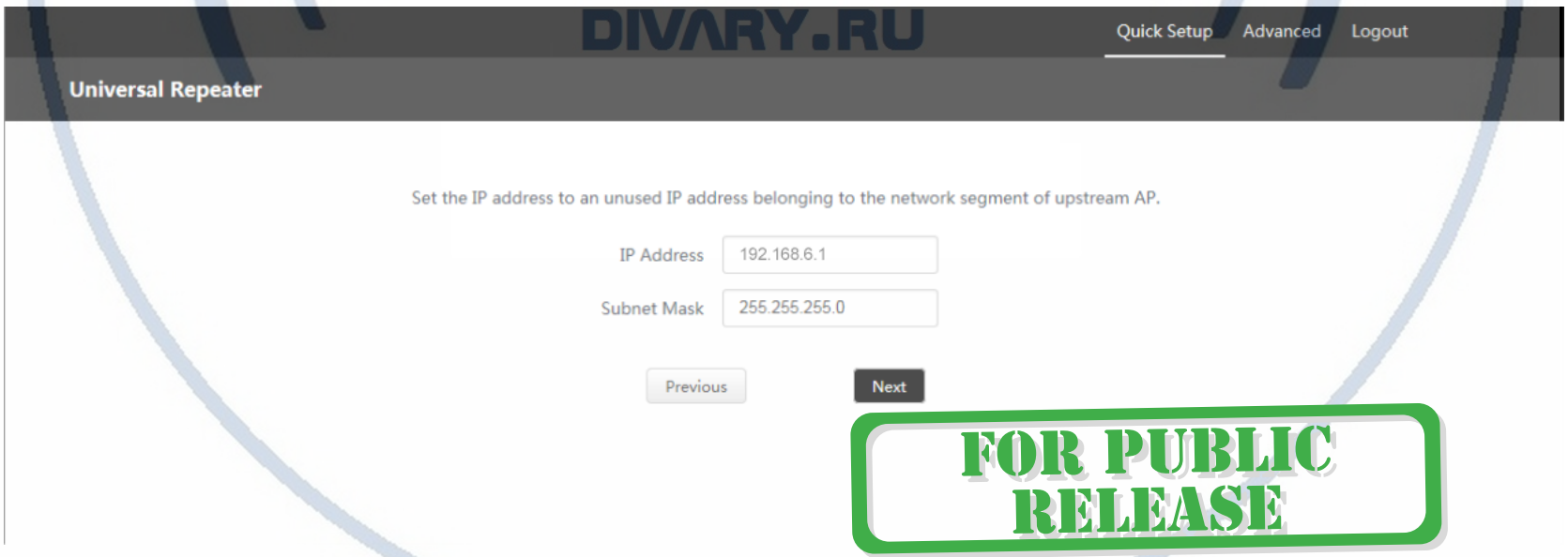
A. Login the Web management page, click “Universal Repeater”
B. Select the AP’s SSID want to bridge, take “Smart-AP” for example, Select “Smart AP” as Upstream AP, then click Next.



Input the AP’ s key, click next.

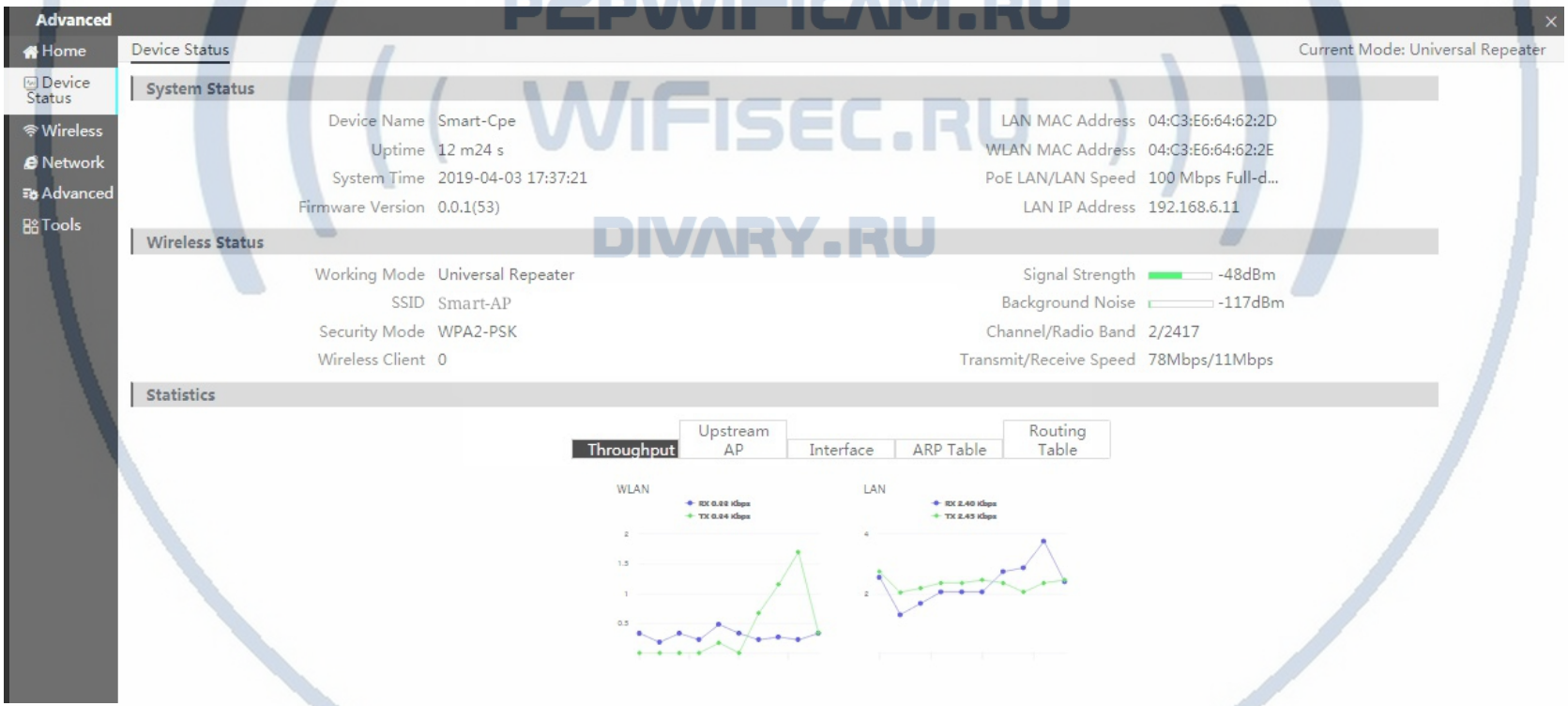


Set the IP address to an unused IP address. Click Next.



Click Save to complete setting.

After the system is rebooting, login with new IP address, enter Device Status in Advanced Setting, show Universal Repeater mode data, show fail or success, and user can configure this data in this page if required.

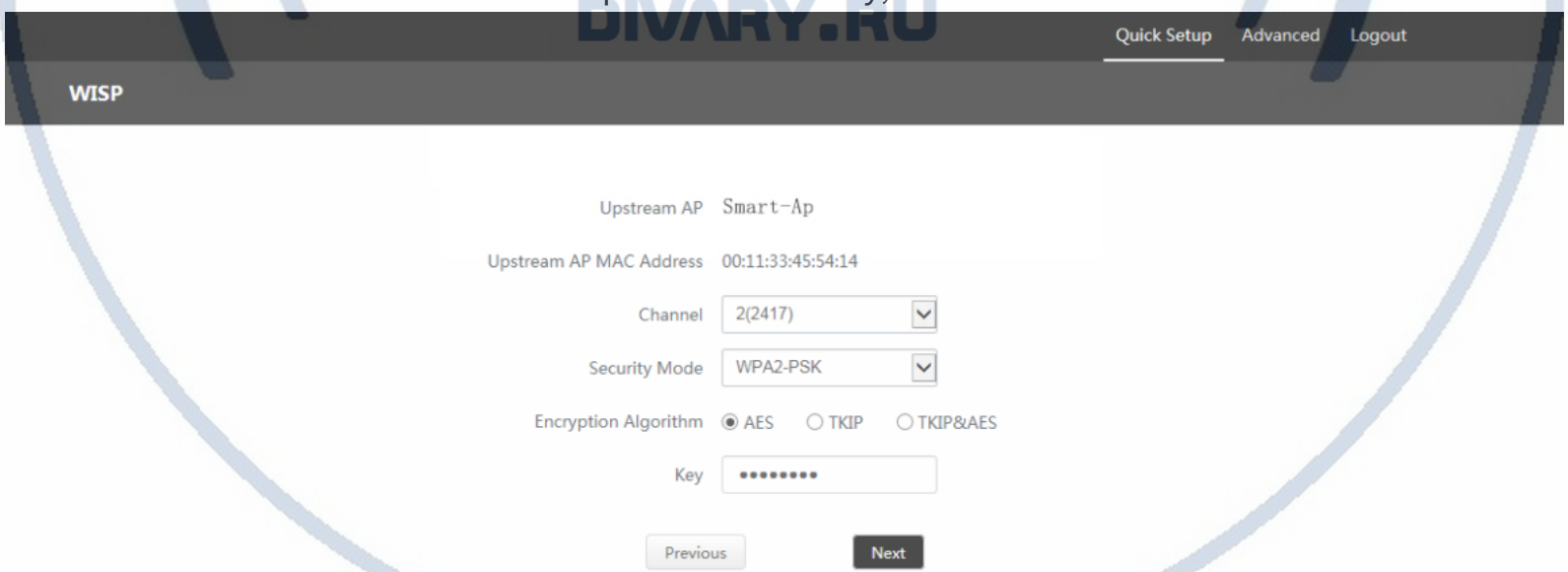


P29 Status in Repeater Mode

5.1.3 WISP Operation mode:

Click WISP operation mode in Quick Setup, then will pop up the configure page, pls set the WISP operation mode based on the steps showed in picture:
take “Smart-AP” for example, Select “Smart AP” as Upstream AP, then click Next.

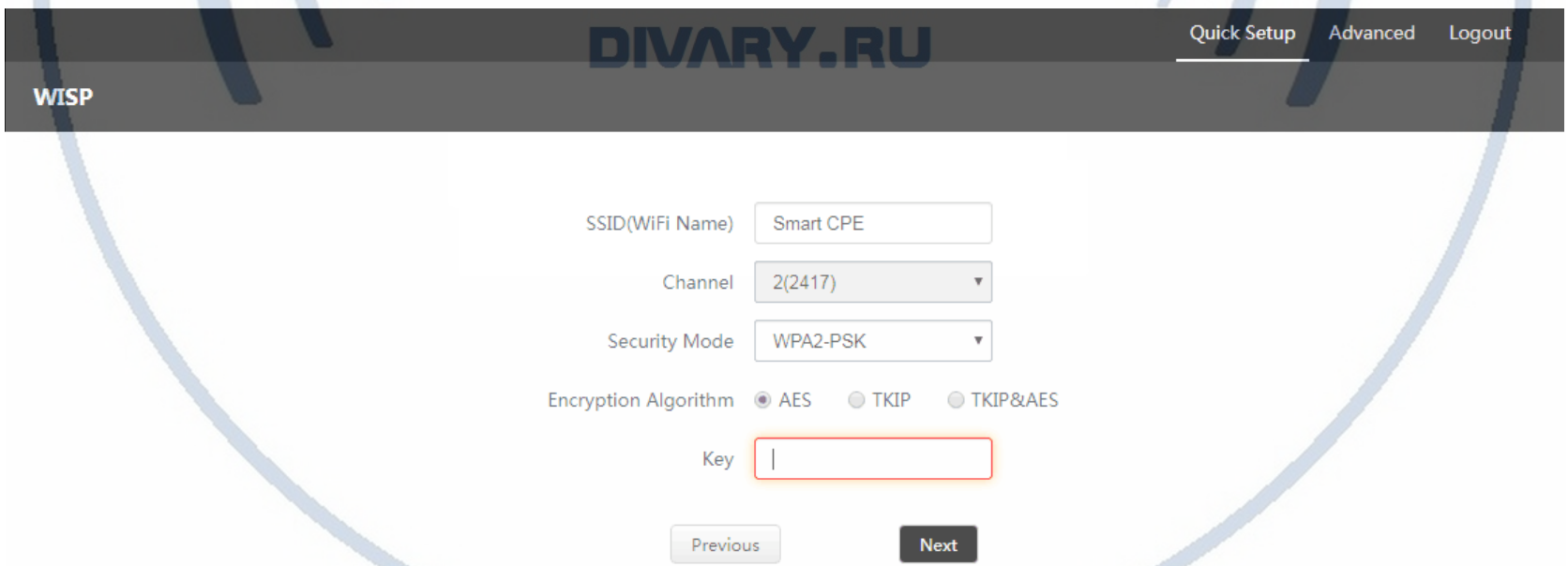
Input the AP’ s key, click next.



Configure the right WAN setting in WISP operation mode, click Next.
Remark: When click WAN Setting, will pop up following picture to ask you choose PPPoE, DHCP or Static IP

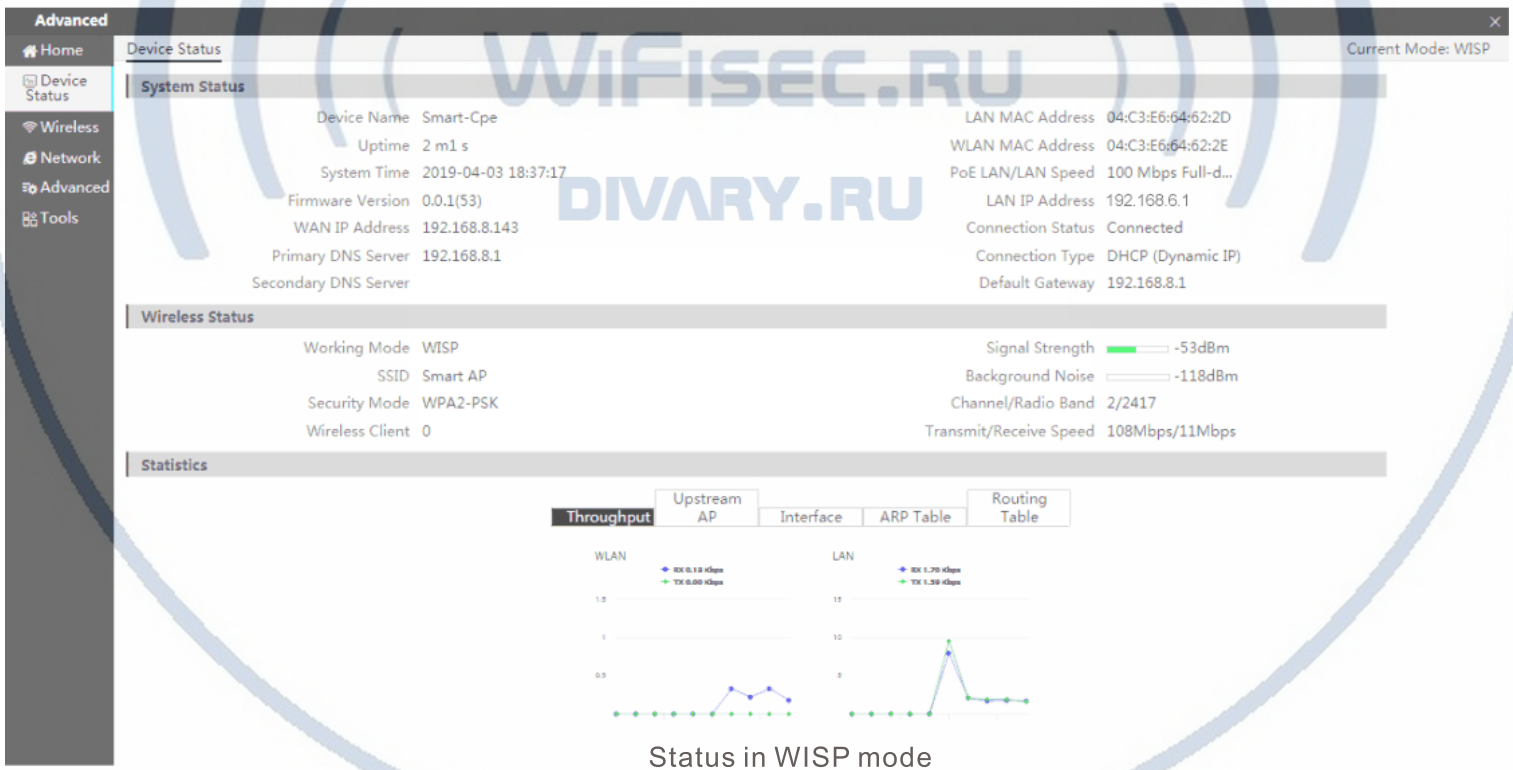
WAN setting in WISP mode

Input SSID and Key, then Next.



Set the IP address to an unused IP address. Click Next.

After the system is rebooting, login with new IP address, enter Device Status in Advanced Setting will show the connection fail or success, then can configure the data based on request:



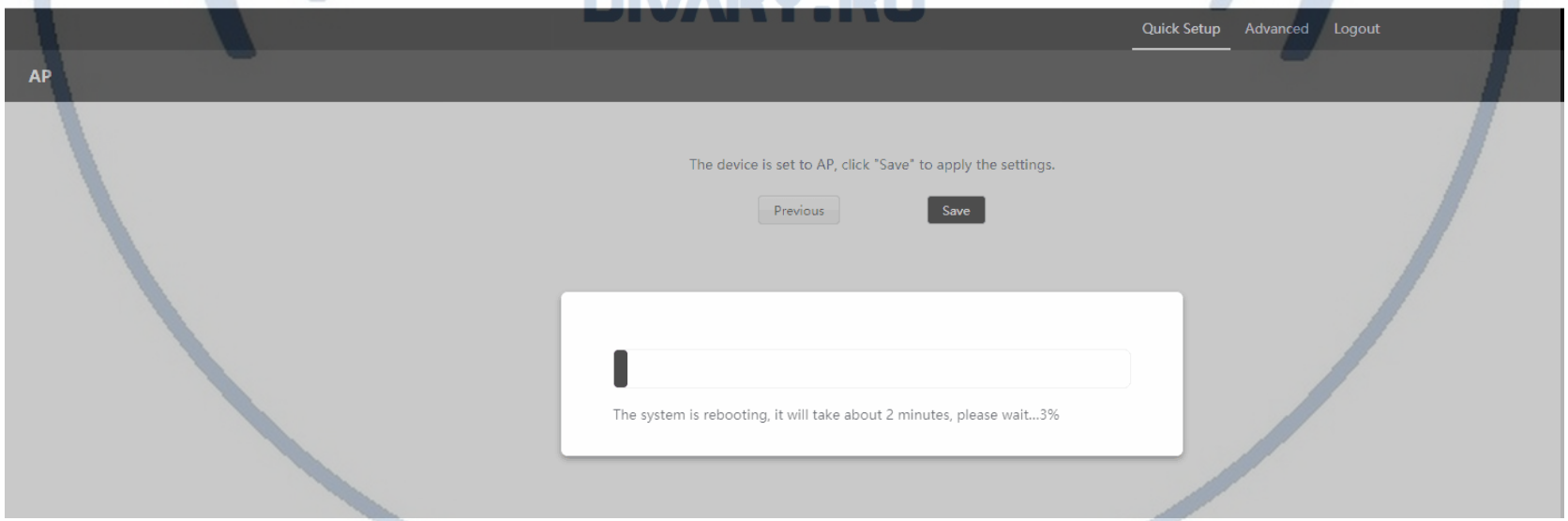
Status in WISP mode

5.1.4 AP Operation mode:

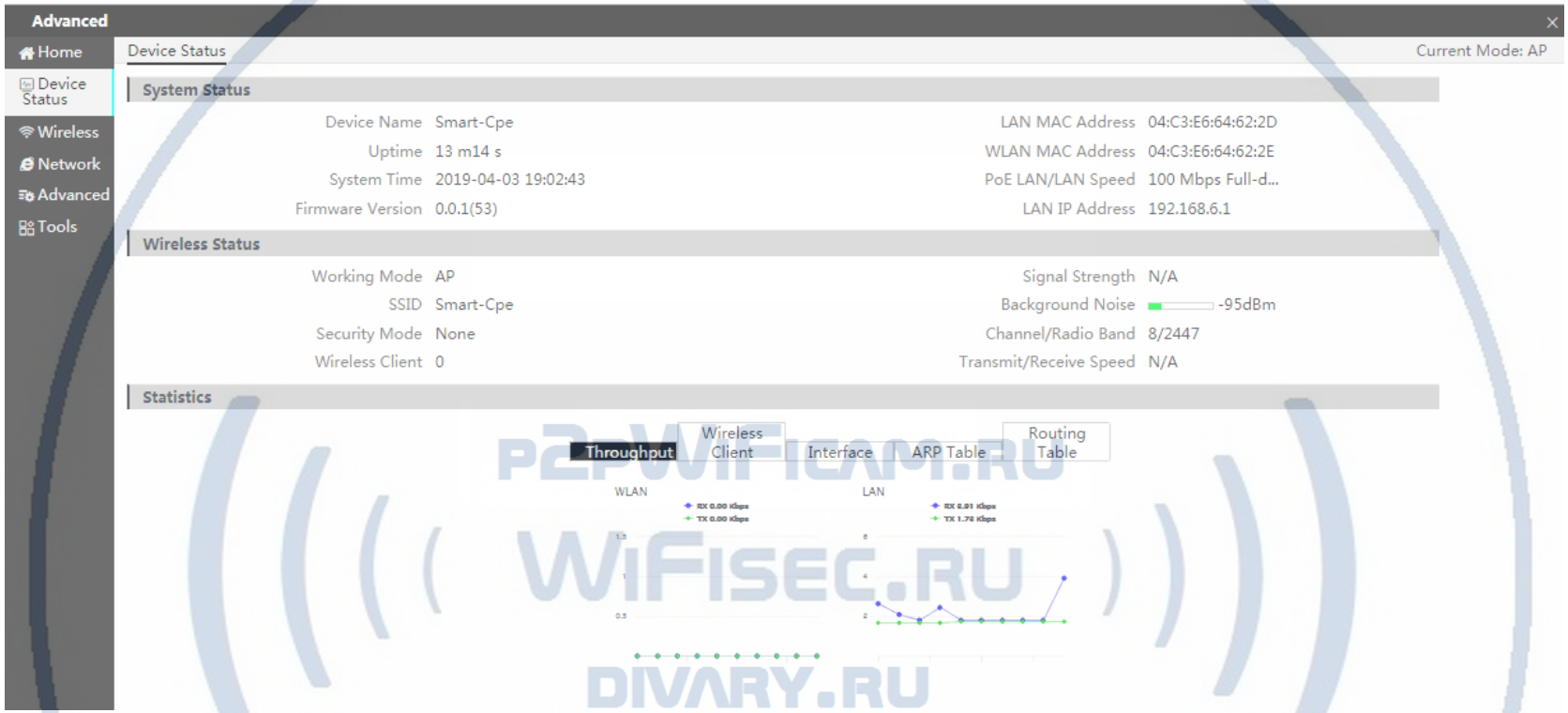
Set SSID, Channel, Key as required, then click next.

Wireless setting in AP Mode

Click save to complete setting



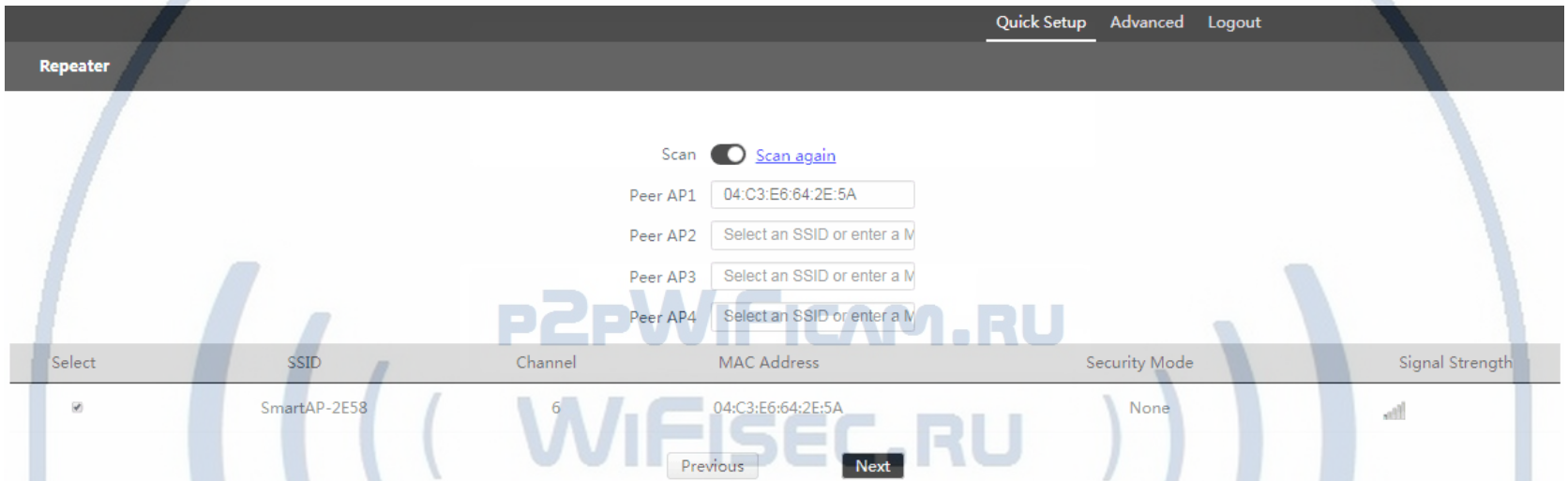
Complete the AP mode configuration and enter to Device Status:



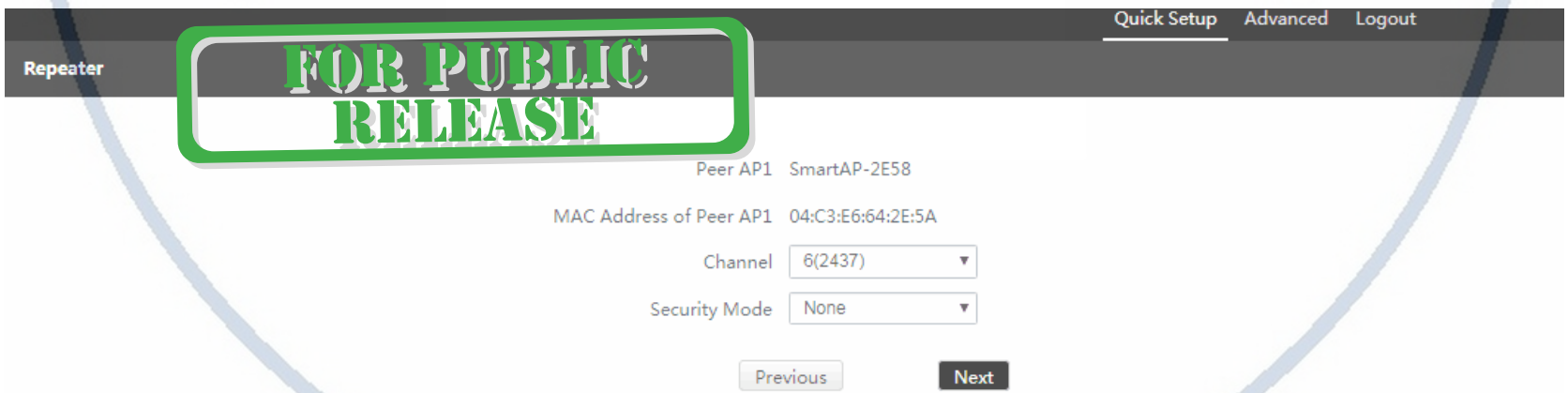
Status in AP Mode

5.1.5 Repeater mode:

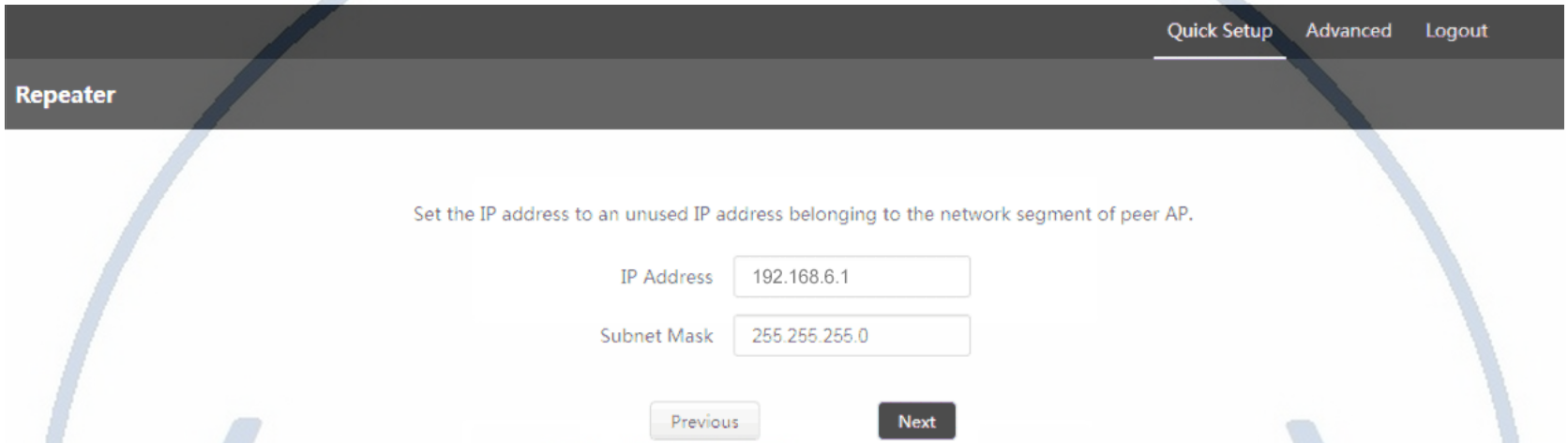
Click Repeater mode in Quick settings, will pop up following picture:
Scan and select the slave AP, max can banding with 4PCS slave wireless AP, click next.



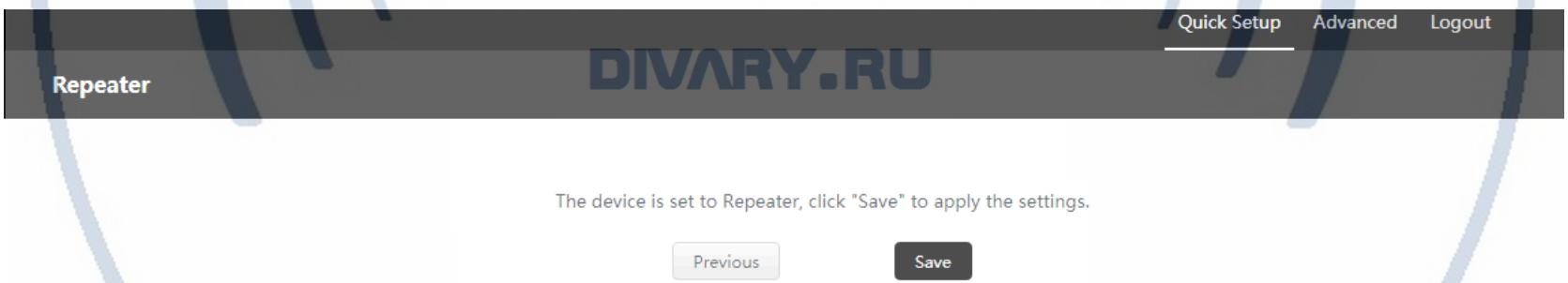
Make the master AP work in best channel, click Next.



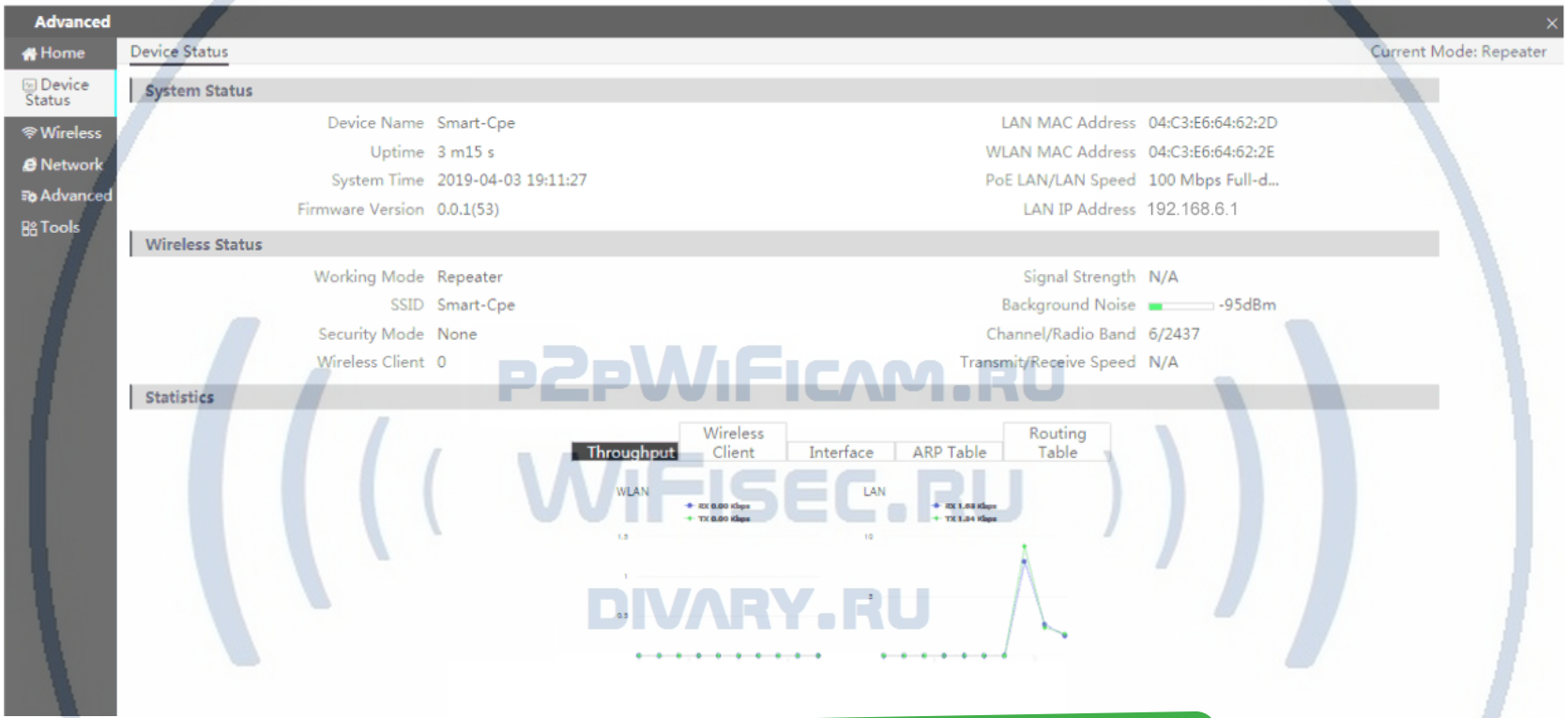
Set the IP address, then Next.



Save to complete setting.



After the system is rebooting, login with new IP address, enter Device Status in Advanced Setting will show the connection fail or success, then can configure the data based on request:

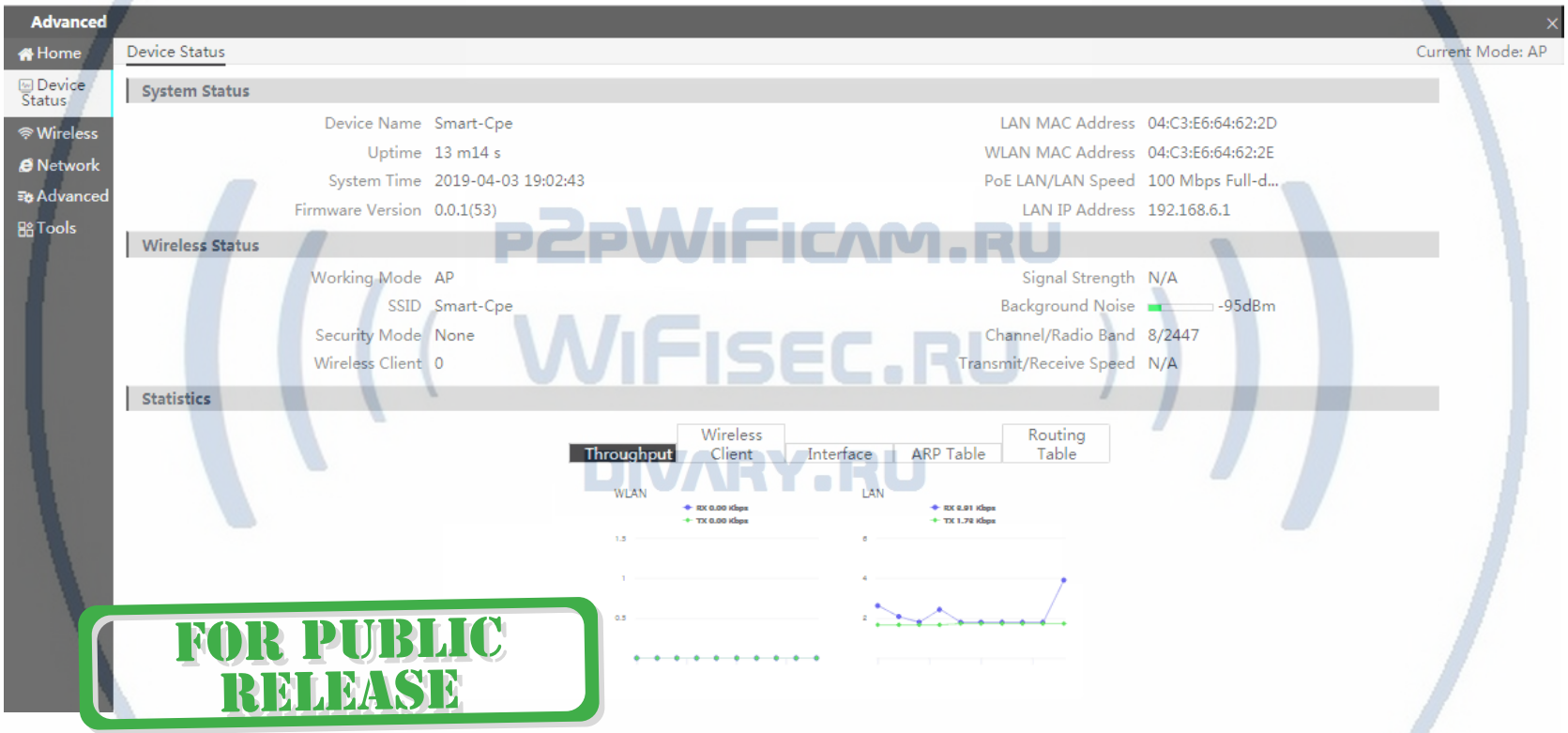


5.2 Advanced Setting:

In advanced setting, mainly for outdoor CPE's device status, wireless setting, Networking setting and management configuration.
Let's shown more in Device Status, Wireless, Network and Management in following pages:

5.2.1 Device Status

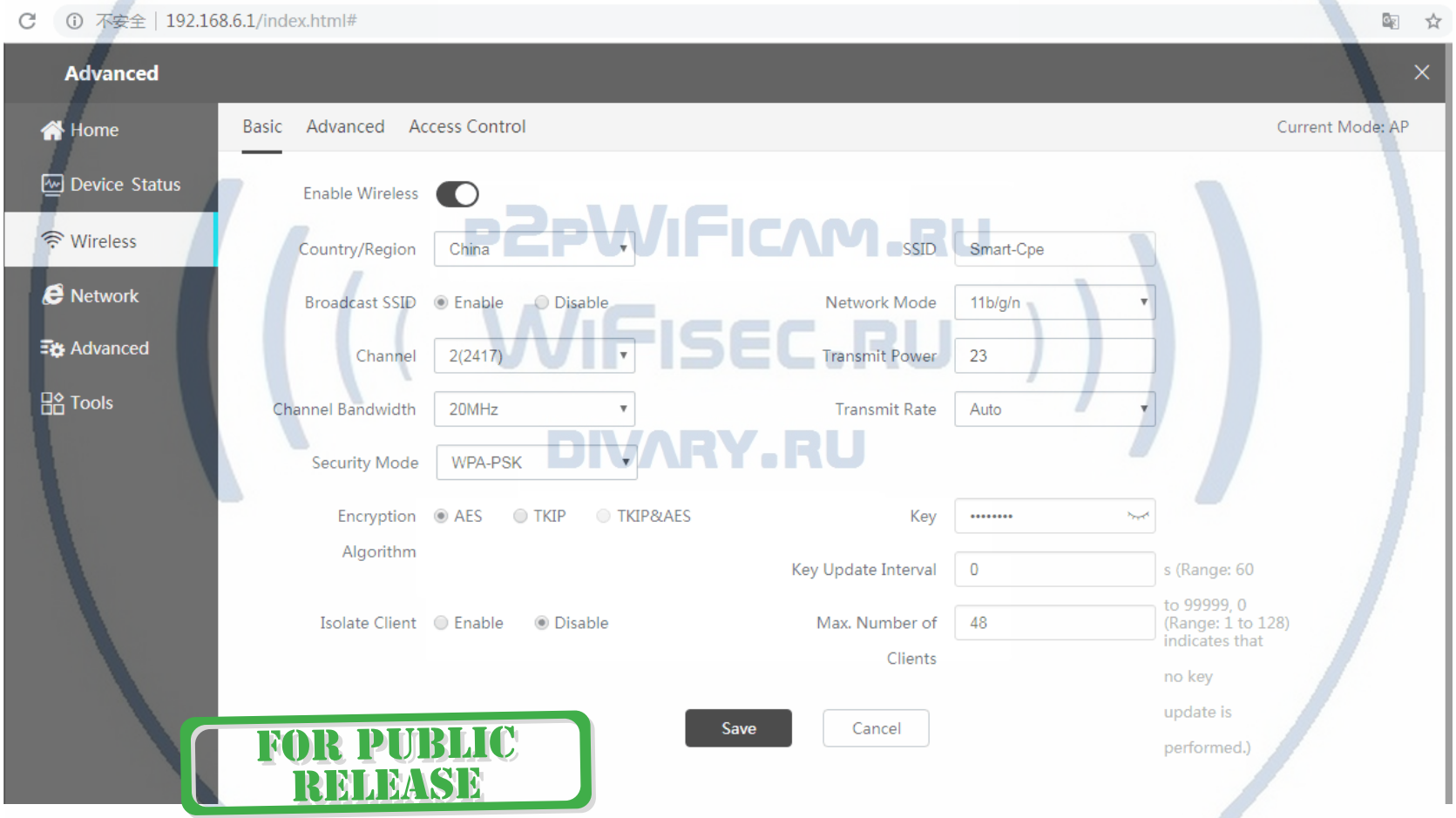
After login, the home page displays the current device status information of the system, such as IP address, working mode, connection status, channel, throughput, terminal information.... Let the management determine the operation of the CPE through the status information.



Device Status

5.2.2 Wireless:

Basic Settings: This interface can modify the CPE country code, channel, SSID, power, encryption and other wireless information.
Channel: between adjacent devices, the channels will interfere with each other and different channels need to be used.



Basic Setting in Wireless

Advanced Setting:

WMM:WMM is a wireless QoS protocol used to ensure that high-priority packets have priority to send, thus ensuring better quality of service for voice and video applications in wireless networks. It is recommended to keep it open.

APSD:Automatic Power Save Delivery,Automatic power saving mode. It is the WMM power-saving authentication protocol of the Wi-Fi Alliance. After enabling WMM, turning on "APSD" can reduce the power consumption of the bridge. Disabled by default.

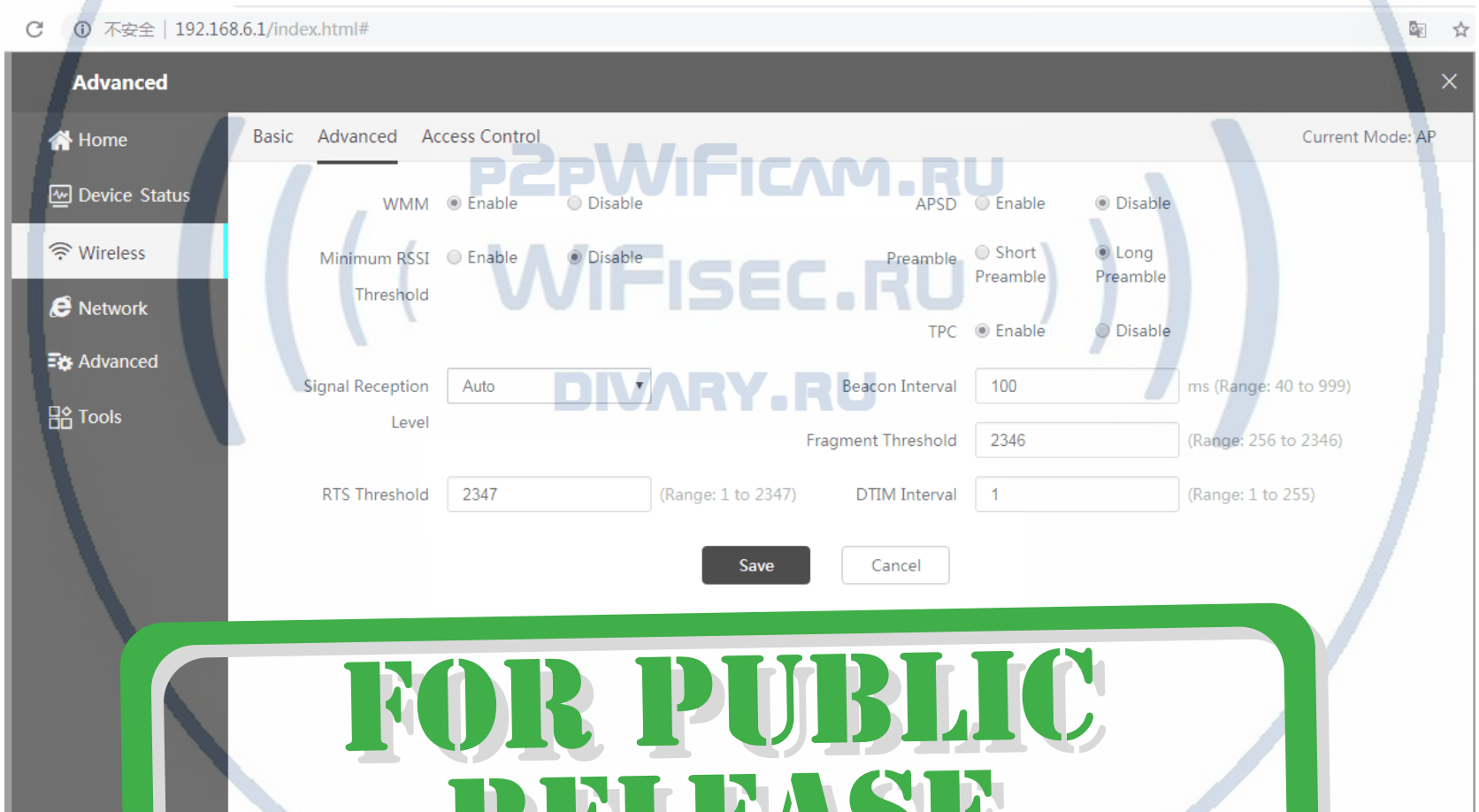
Preamble:It is a set of bits at the beginning of the packet, and the receiver can synchronize and prepare to receive the actual data. The default is a long preamble, which is compatible with some older client NICs on the network. If you want to make the network synchronization performance better, you can choose a short preamble.

Signal Reception Level:Used to adjust the signal reception capability of the bridge. The higher the level, the stronger the signal reception capability of the bridge, and the more wireless signals are scanned.

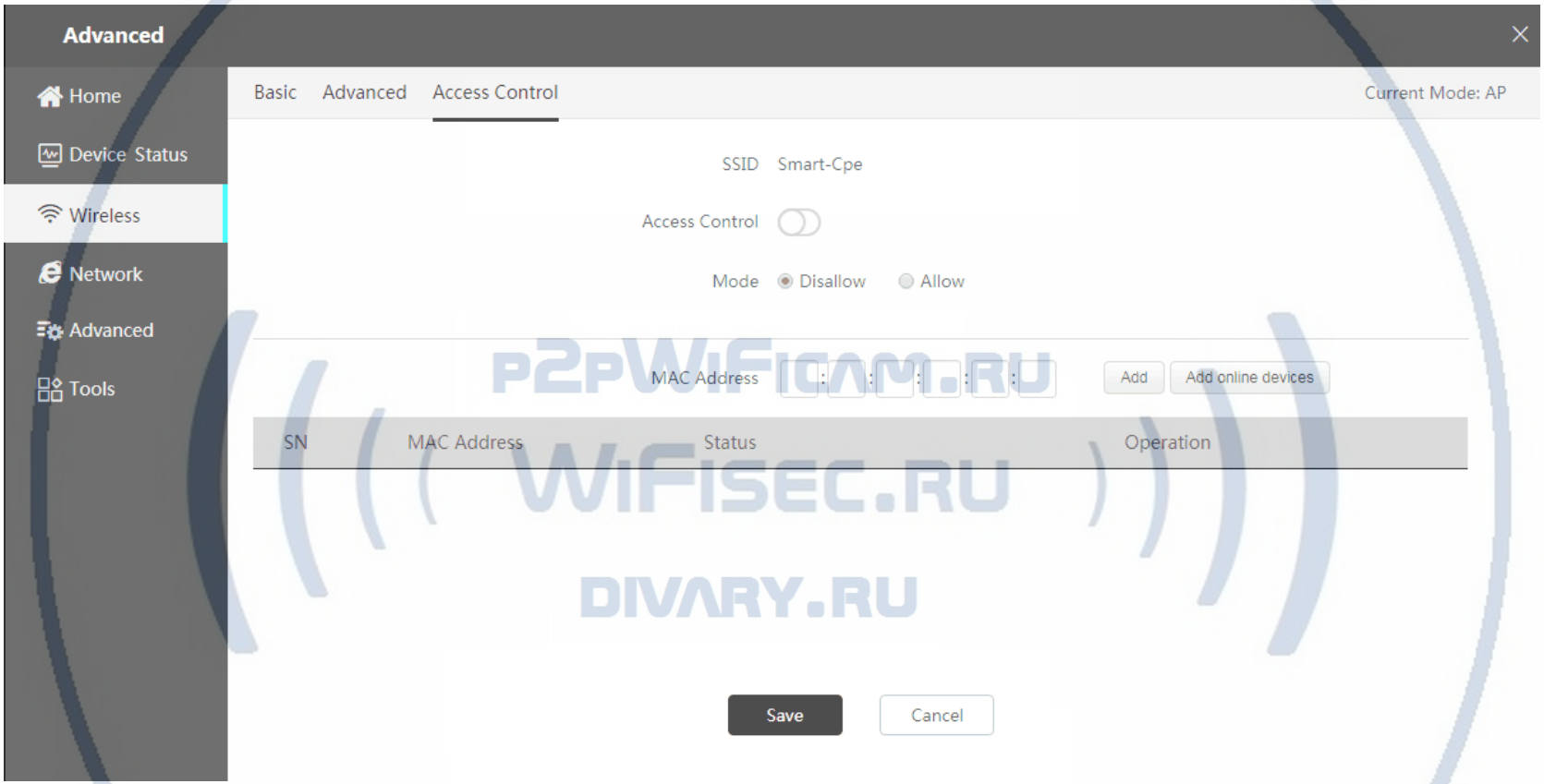
Beacon Interval:Set the interval at which the bridge sends Beacon frames. Beacon frames are periodically sent at regular intervals to announce the presence of the wireless network. Generally speaking, the smaller the interval, the faster the wireless client accesses the bridge; the larger the interval, the higher the efficiency of wireless network data transmission.

Fragment Threshold:Set the fragment threshold of the frame.
The basic principle of sharding is to divide a large frame into smaller shards, each of which is transmitted and acknowledged independently. When the actual size of the frame exceeds the specified fragmentation threshold, the frame is fragmented.

In an environment with a high bit error rate, the fragmentation threshold can be appropriately lowered. Thus, if the transmission fails, only the unsuccessfully transmitted portion needs to be retransmitted, thereby increasing the throughput of the frame transmission.
In a non-interference environment, appropriately increasing the fragmentation threshold can reduce the number of acknowledgment frames to improve the throughput of frame transmission.



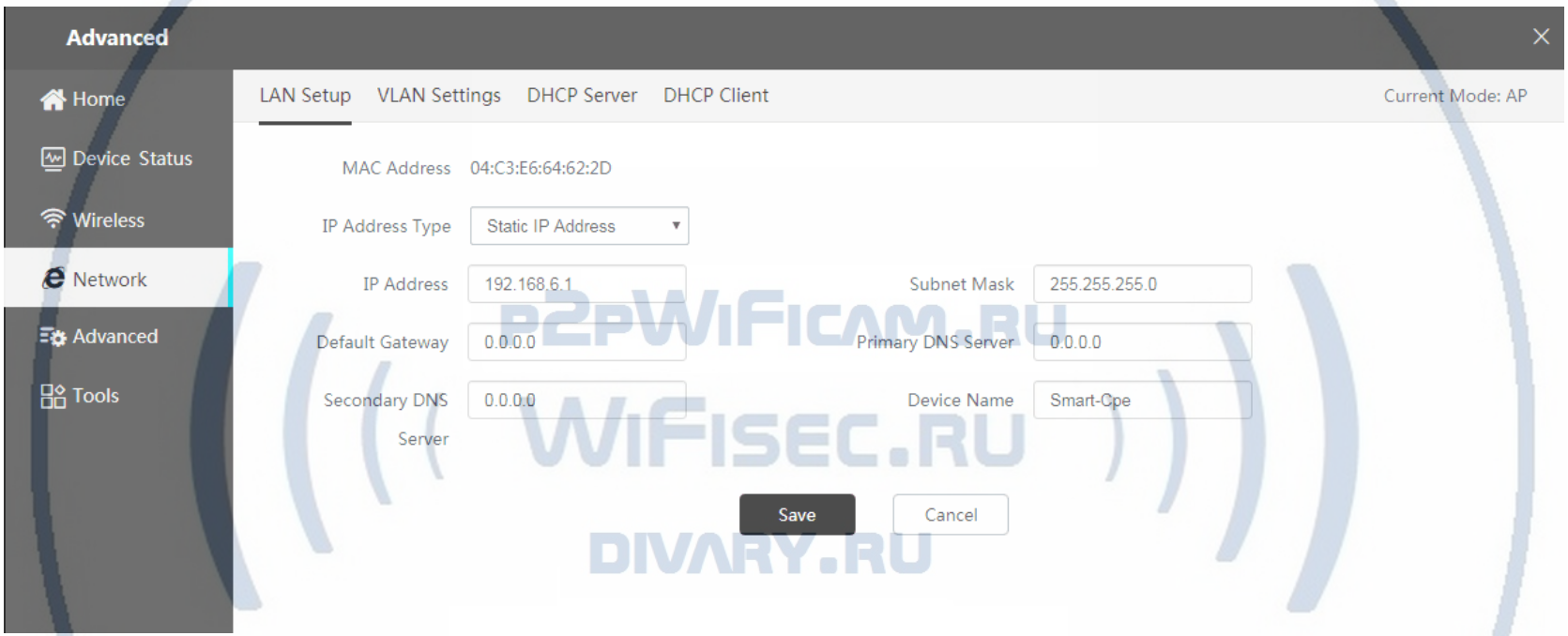
Access Control:
The black and white list function allows only one device to access, or only one device is prohibited from accessing.



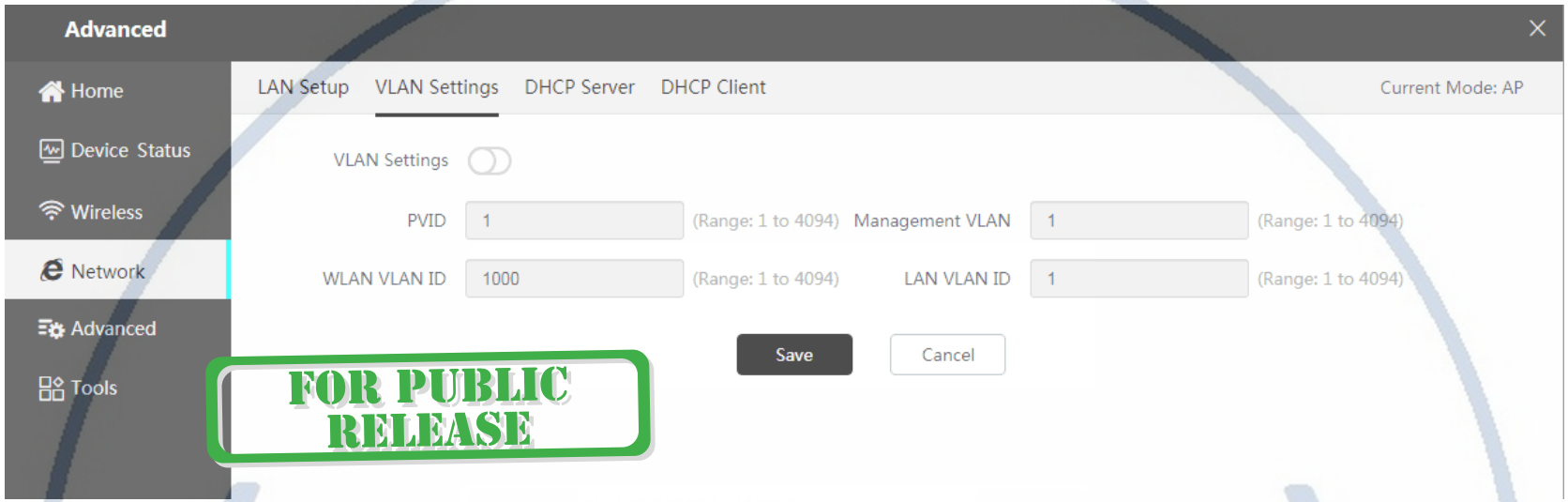
MAC Access Control

5.2.3 Network:

In network, mainly to show the LAN setting, VLAN setting, DHCP Server and DHCP Client as follow:
In LAN Settings, mainly including static IP and DHCP.

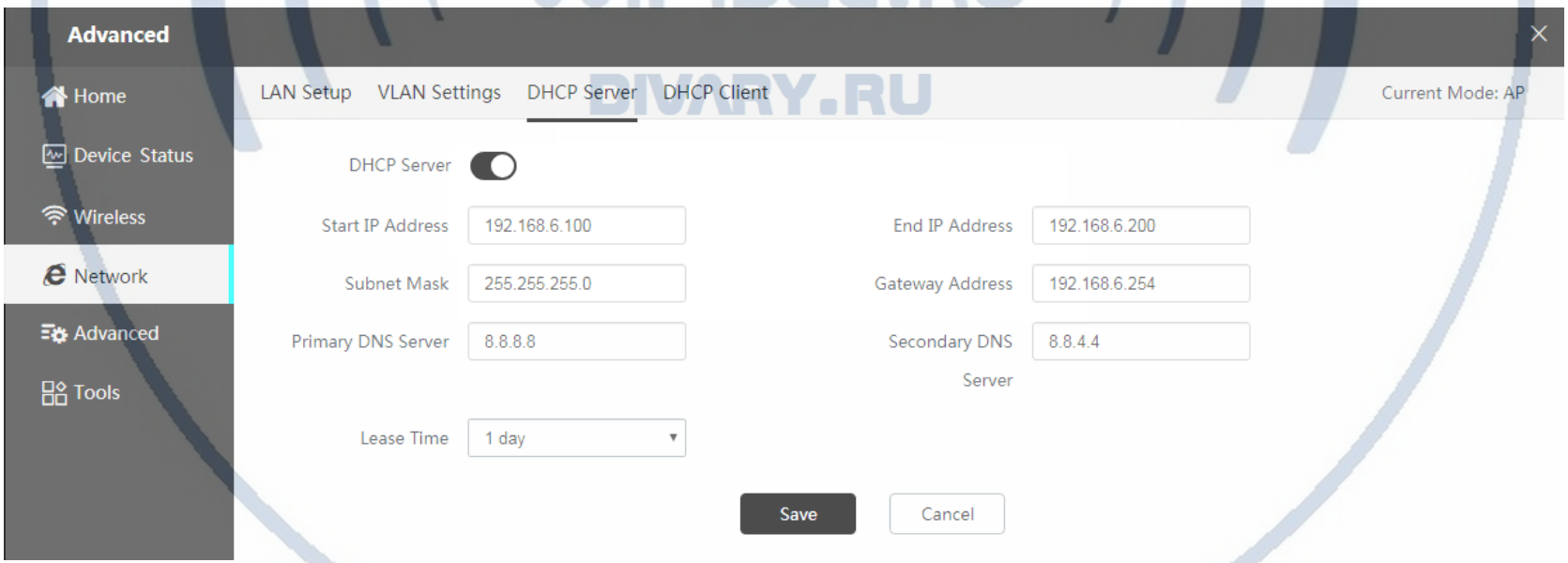


Network Setting
In VLAN part, need an VLAN switch and make sure the multi SSID is enable, then input the VLAN ID to different SSID.

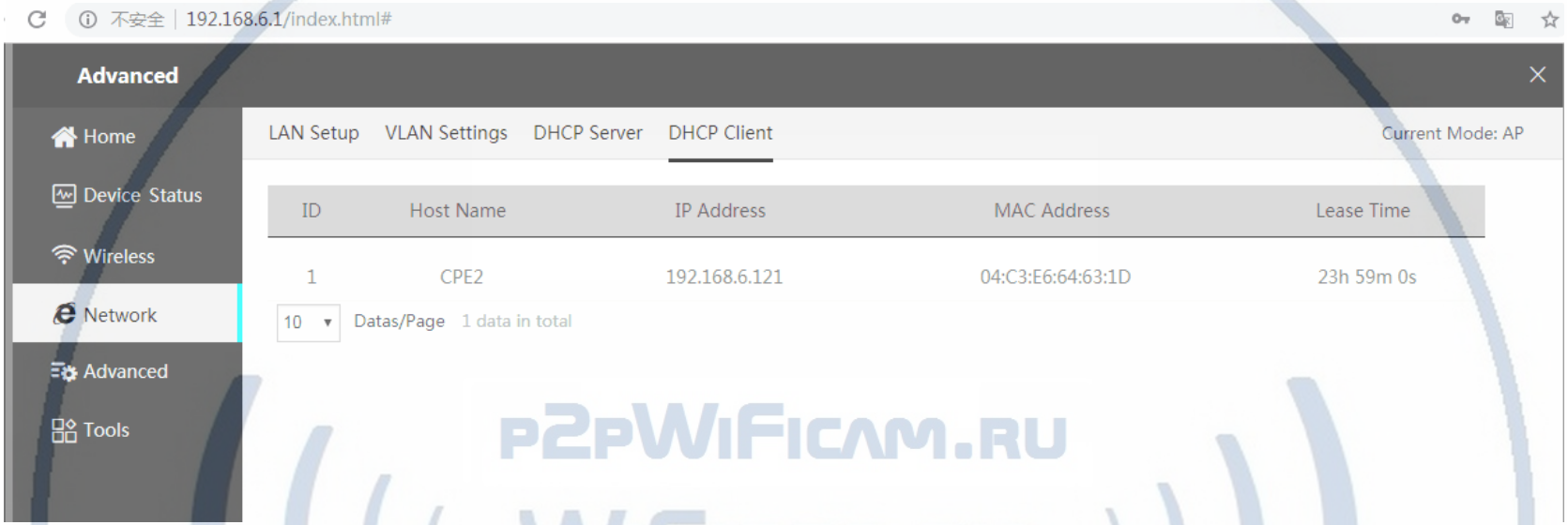


Tag VLAN Setting

DHCP Server, Open DHCP and send the IP address to the terminal.

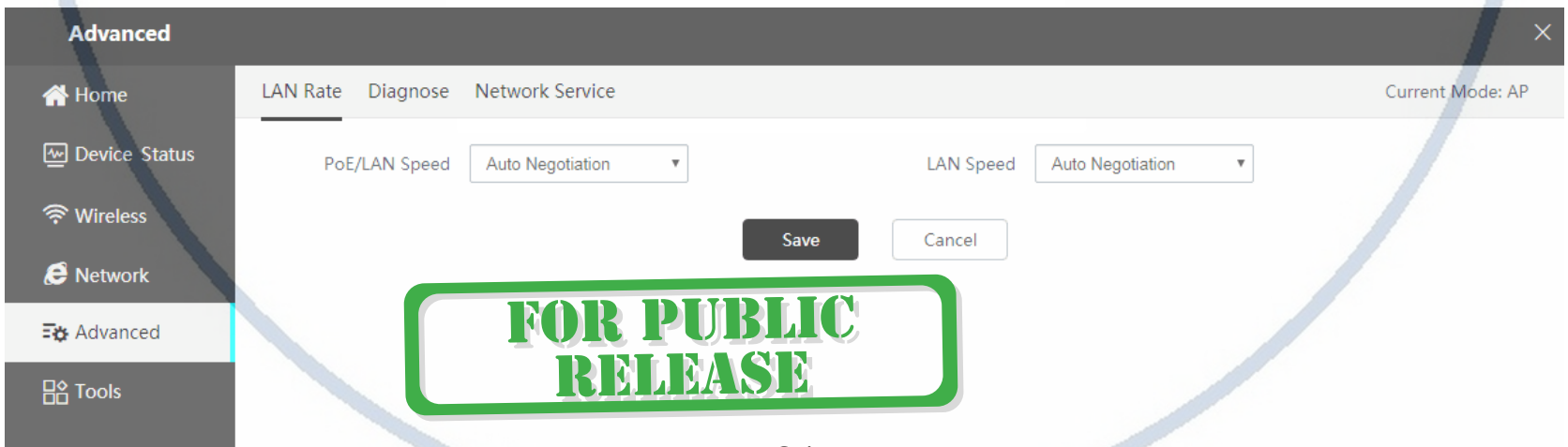


DHCP Client, CPE wireless bridging mode, connecting the the device to the peer CPE, MAC address, IP address, etc.

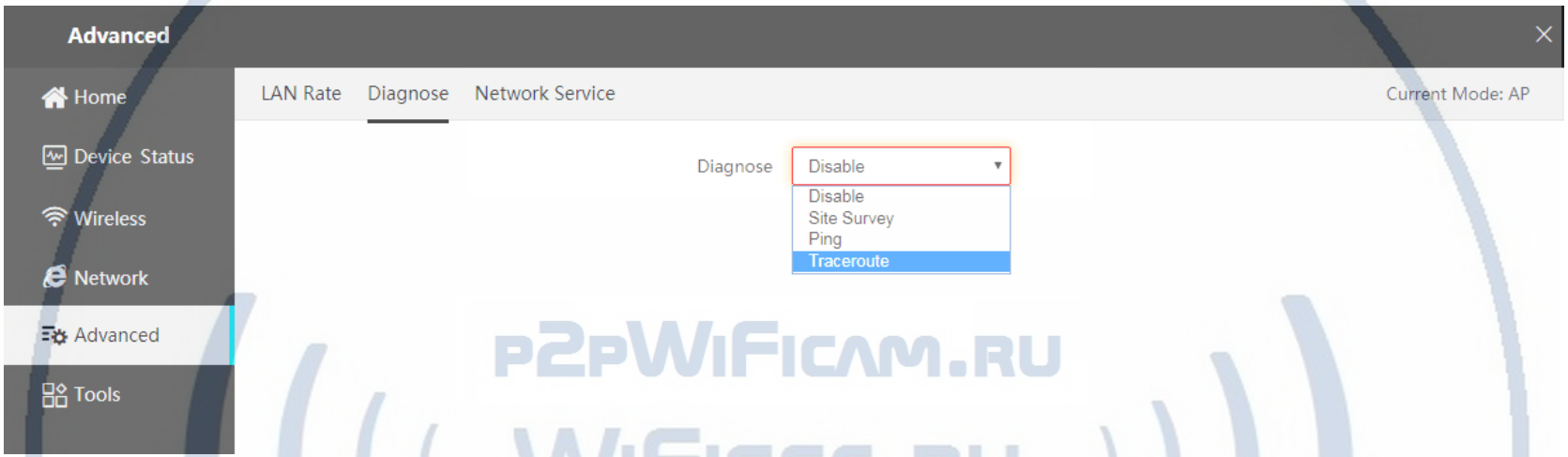


5.2.4 Advanced:

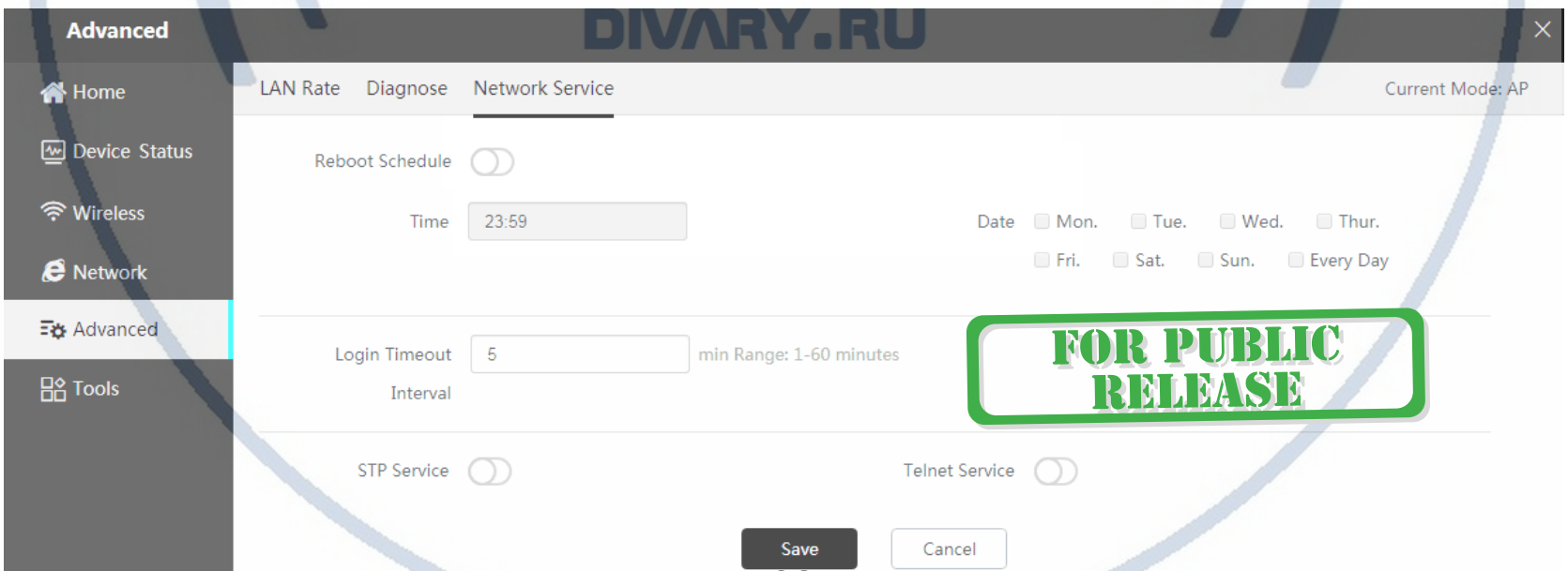
In this part, show the LAN rate, Diagnose and Network Service.
LAN rate: WAN port and LAN port, 10M/100M full-duplex and half-duplex rate optional, default auto-negotiation



In Diagnose, Site Survey: scan the surrounding WIFI signals to check the signal strength
Ping: IP address ping packet test, you can select the number of ping packets and bytes to verify the transmission effect.



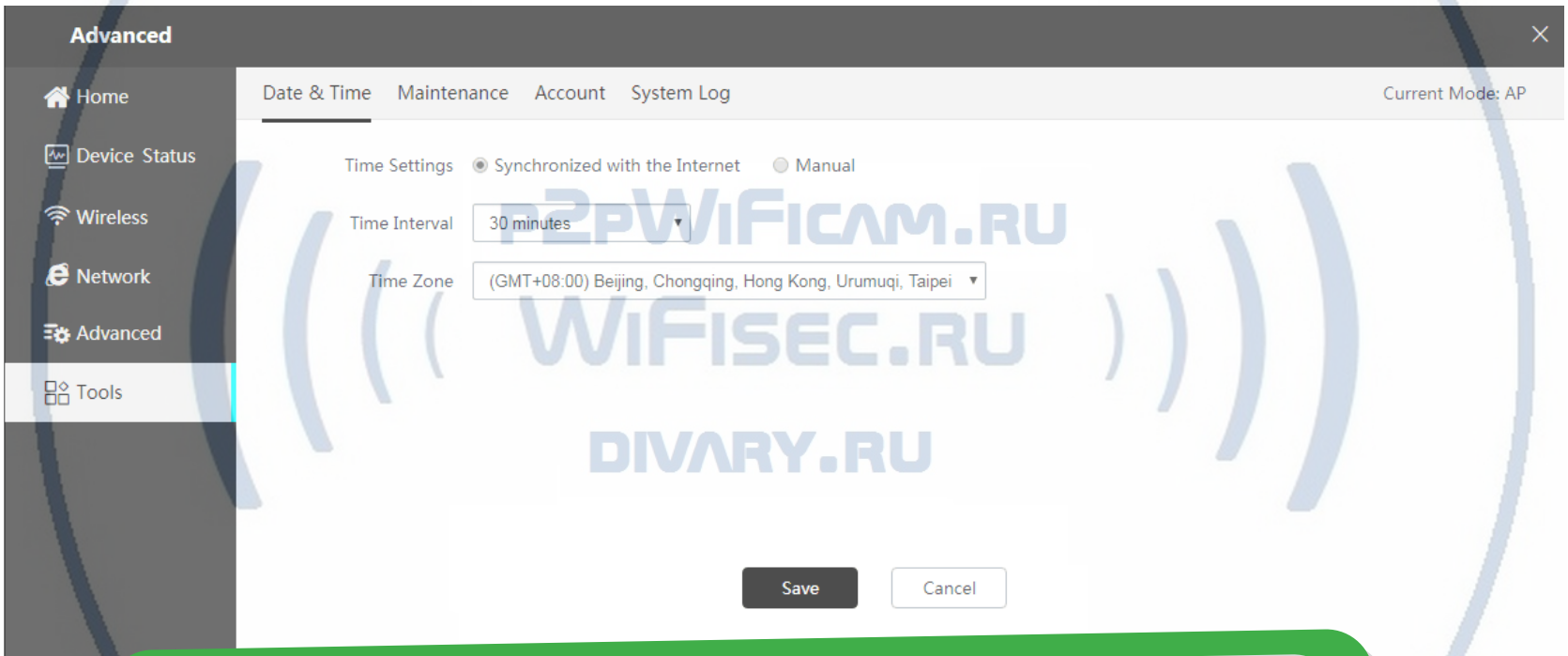
Network Service: Can set the device to reboot regularly, clear the cache.



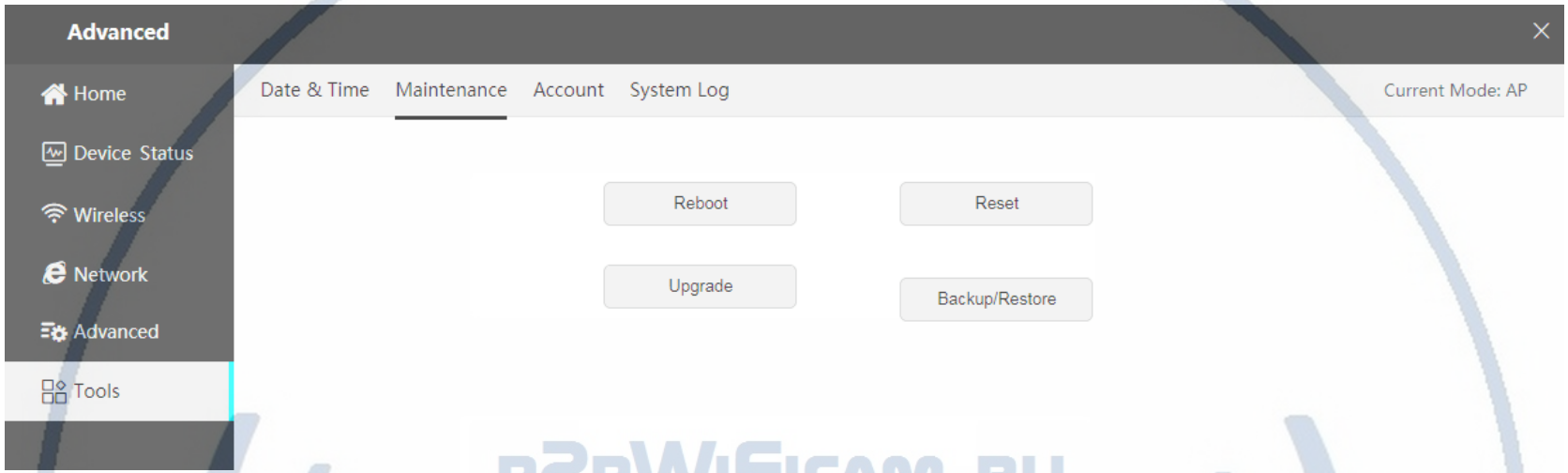
5.2.5 Tools:

In this part, show the system time, Logs, upgrade firmware, system, user info.
And we show System time, how to upgrade firmware and system page to users:

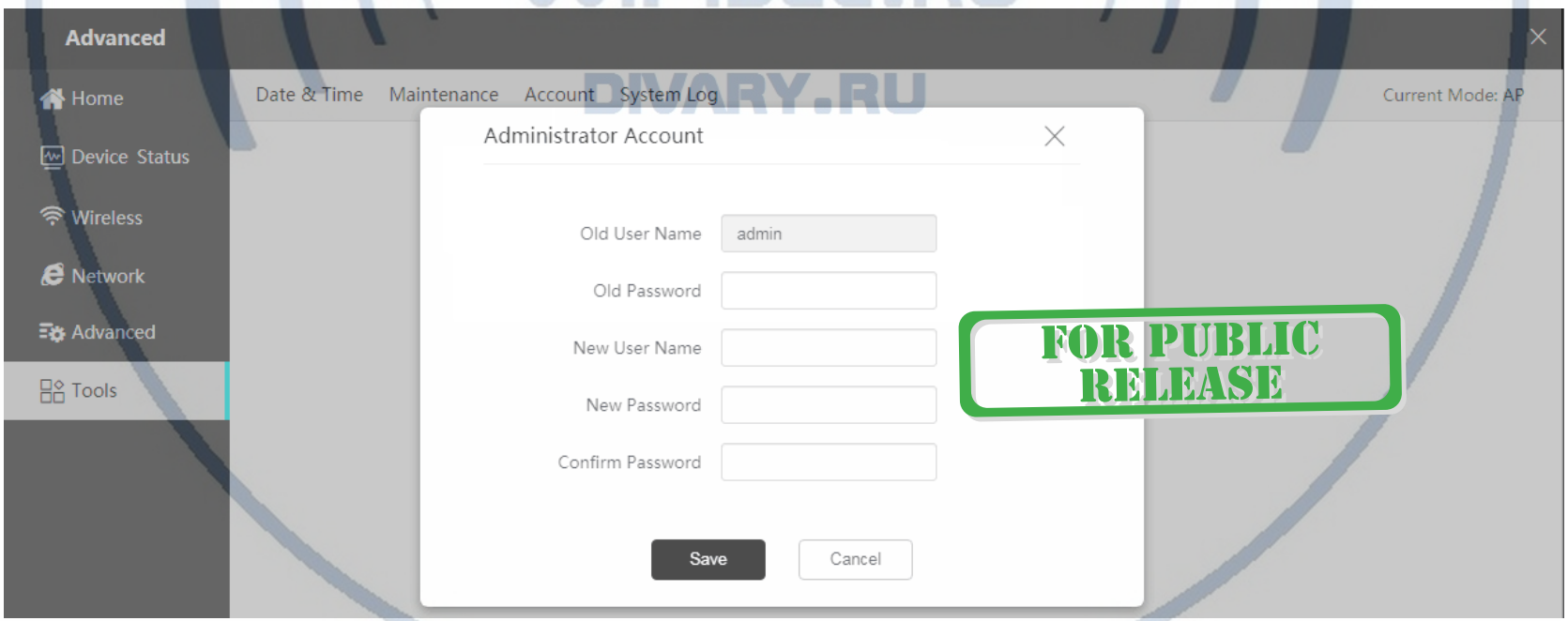
In Date & Time, can set time through Network timing and manual calibration, and time zone selection.



In Maintenance page, you can choose to Reboot, Reset, Upgrade, Backup/Restore.



Account: user can change the login password based on their needs:



System Log : to show the outdoor CPE's operation logs, useful for problem solved.