KyAir110-2GE1D-L5 Industrial Wireless Router Web Operation Manual

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KYLAND

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1 Preface

This document provides a guide to configuring the functions of the industrial wireless router system.

This document is intended for network engineers responsible for configuring and managing the router. You should be familiar with Ethernet fundamentals and have extensive experience in network deployment and management.

1.1 Product Version

The product version corresponding to this document is as follows.

Product Name	Software Version	Applicable Product Model	Supported Work Modes
Industrial Wireless Router	All Versions	KyAir110-2GE1D-L5	Fat AP Mode/Slim AP Mode/Gateway Mode/Bridge Mode/Client Mode

1.2 General Formatting Conventions

Format	Instructions
Song font	Text using song typeface representation
bold	Primary headings, secondary headings, tertiary headings,.

1.3 GUI Description Formatting Conventions

Format	Description
【 】	Represents a menu or submenu name
>	Represents the WEB system configuration path, for example, System Services > Services, indicating the Service menu under System Services
<>	Represents an option or button name in a window

2 Getting Started

2.1 AP System Overview

To facilitate the maintenance and use of the AP, the AP has a built-in Web server that can be accessed via a Web browser from an AP terminal (hereafter referred to as a PC). It also supports local connections for debugging and maintenance via SSH and serial port (for APs with serial ports).

For a serial connection, the PC and AP need to be directly connected via a local serial port.

The operating environment for Web and SSH connections is shown below:

2.2 Logging into the Device

1、You can log into the device using the following methods.

PC terminal connects to the AP’s LAN port and accesses the AP through the default address 192.168.0.2:

- PC terminal and AP device are network-connected.
- PC terminal is configured with local network DHCP.
- Browser software is installed on the PC terminal.

2、The login process screenshots are as follows:

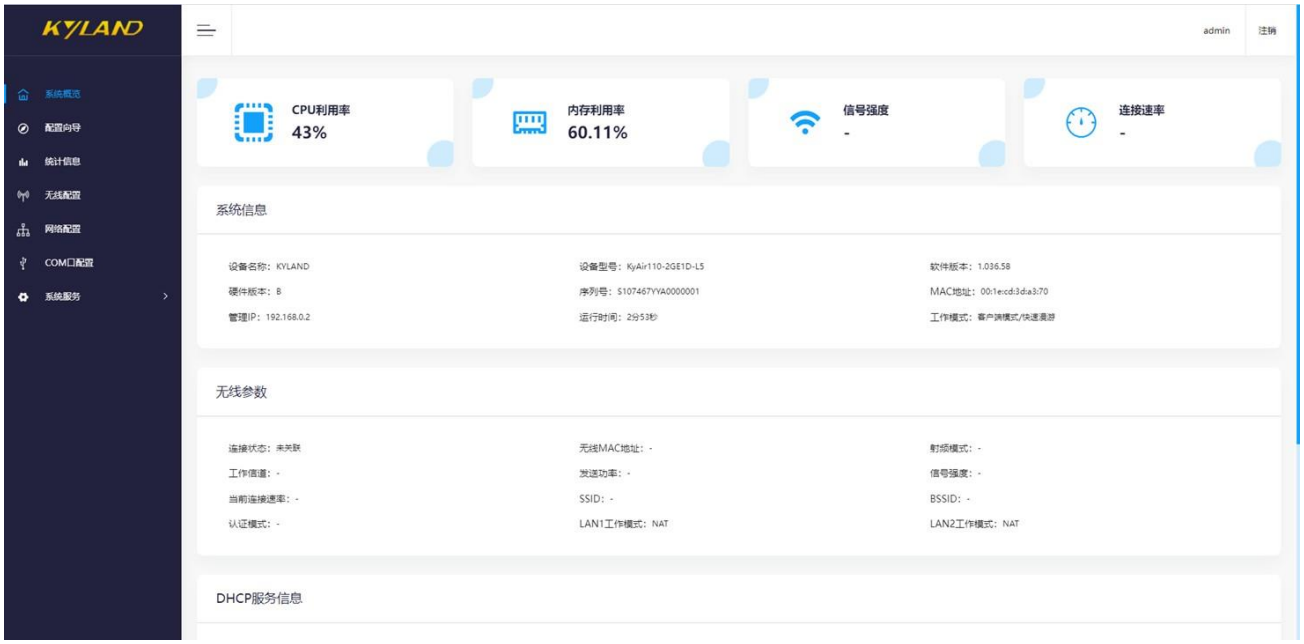
a) Open the browser software on the PC (e.g., Google Chrome), enter the AP IP in the address bar, and press Enter to navigate to the web login page.

b) Enter the username and password (admin/123).

c) Click “Login” to enter the operation page.

d) On the first login to the Web system, for security purposes, you may modify the password and then log in again.

If login fails, the message “Login failed, please confirm the username and password are correct” will appear, indicating incorrect username or password. Verify and re-enter the credentials.

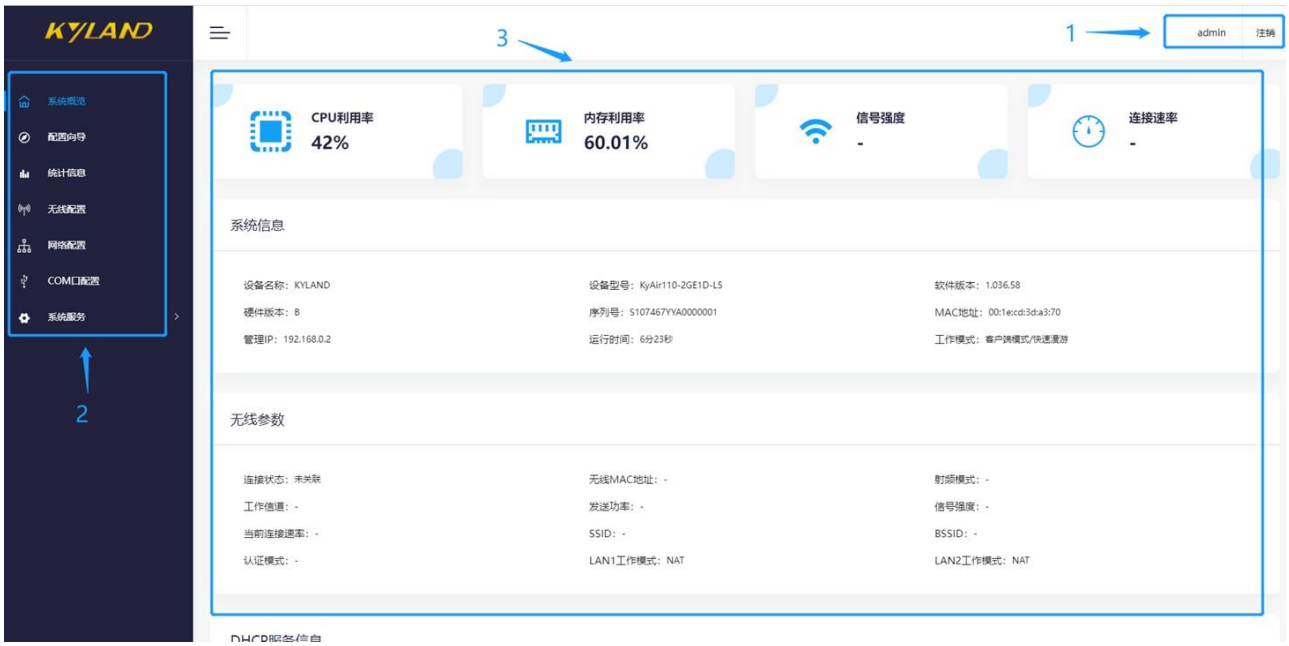


Screenshot of successful login homepage

3、Exit the current login, click “Logout” in the upper right corner of the page to return to the login page.

2.3 Interface Area Division

The menu bar is divided into seven menu pages: System Overview, Configuration Guide, Statistics, Wireless Configuration, Network Configuration, COM Port Configuration, and System Services, as shown below:



Interface Area Table:

Area	Name	Description
1	User Login Status Area	The user can click < logout > to exit the login state.

2	Main Menu Navigation	Displays specific feature categories for each tab in a navigation tree format.
3	Function Operation Area	Users can configure specific features or view feature statuses in this area.

2.4 User Login Status Area

Click 【Logout】 to return to the login page, as shown below:

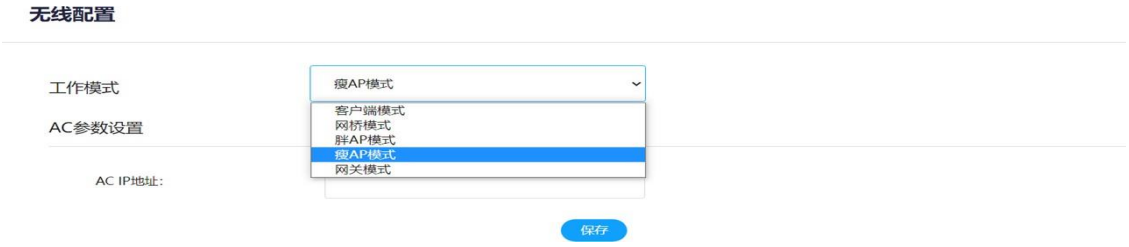
3 Working Mode Configuration

3.1 Switching AP to Client Mode

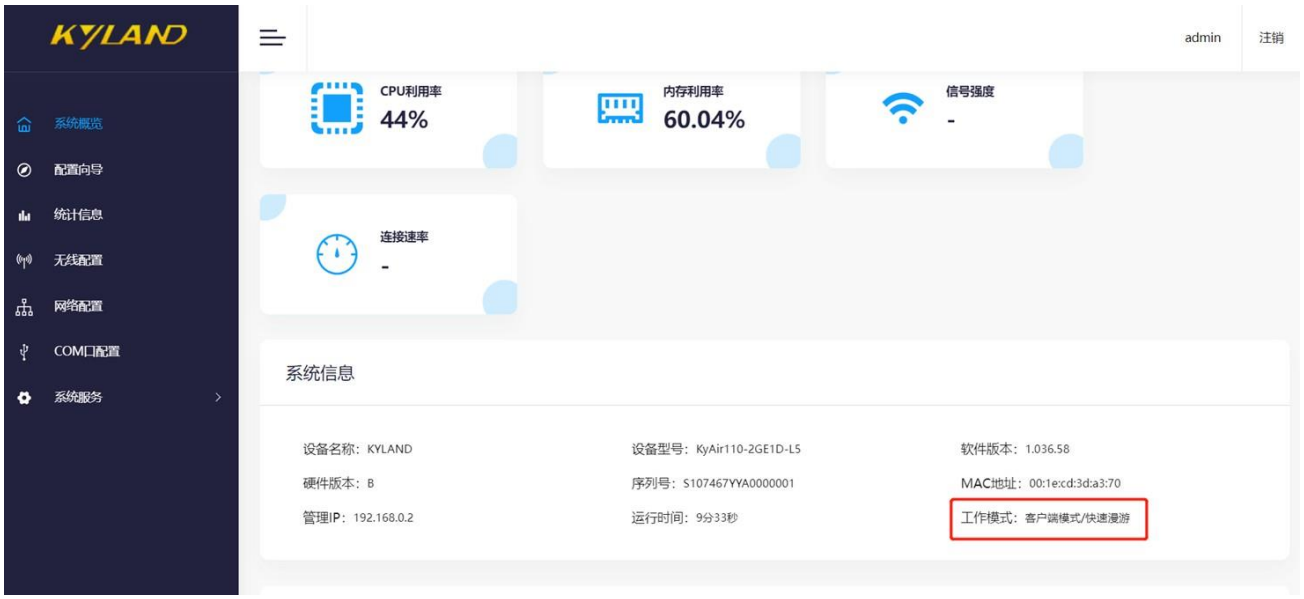
Client mode is used to connect wired terminals, link to an upstream wireless SSID, and enable wired terminals to achieve wireless connections. In routing mode, the device can manage its internal network independently and supports port mapping functionality.

By default, the AP is set to client mode at the factory. In other working modes, you can switch the AP to client mode via the 【Wireless Configuration】 page.

Path: 【Wireless Configuration】 > Click the dropdown box, select “Client Mode,” and confirm in the pop-up dialog box by selecting “OK.”



Wait for the AP to finish rebooting, then log in to the web page again, and you will see that the AP has switched to client mode.

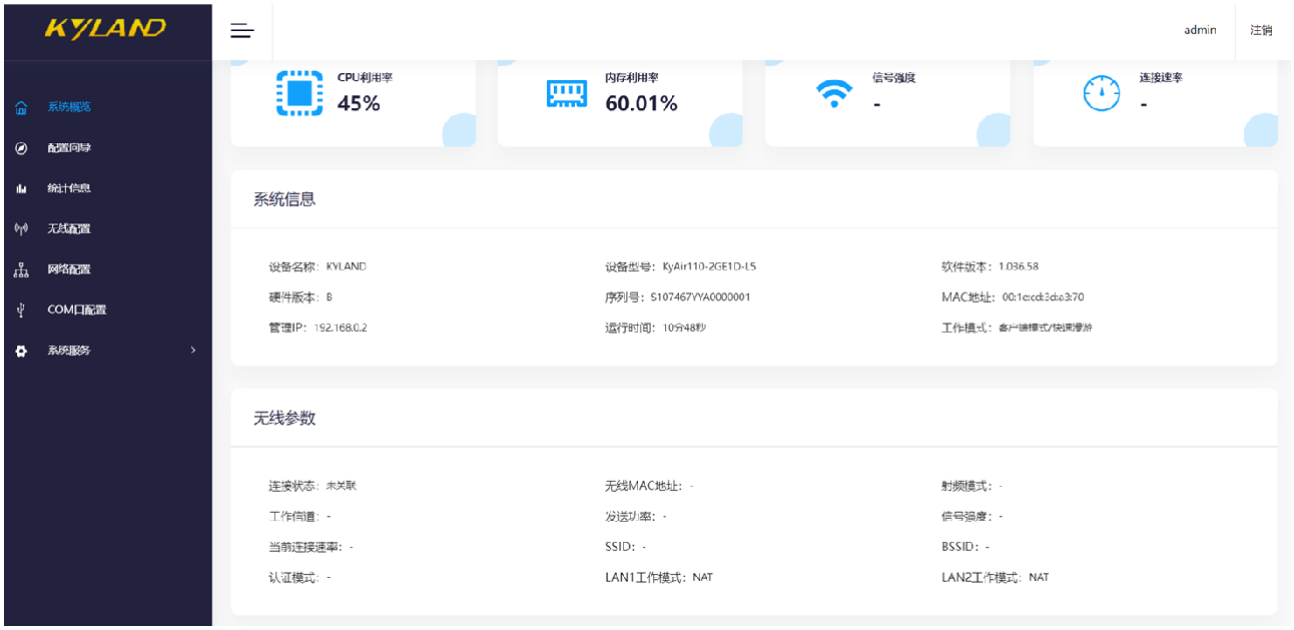


3.1.1 Main Menu Navigation

3.1.1.1 System Overview

After successful login, the system homepage is the [Overview] menu.

The system overview page in client mode is shown below:



The client status information is explained in the following table.

Serial Number	Name	Description
1	Realtime Status	Displays the current CPU utilization, memory utilization, signal strength of the currently connected SSID, and the current connection speed.
2	System Information	Displays device model, software version, hardware version, serial number, MAC address, management address, runtime, and other information.
3	Wireless Parameters	Displays the current working mode, connection status, associated SSID, wireless-side IP address, radio frequency, channel, and encryption authentication mode, i.e., the upstream network of the bridge.
4	DHCP Service Information	Displays the current DHCP server status on the wired network side, current number of users, address pool range, and DNS information, i.e., the downstream network DHCP configuration information.
5	WAN Port Information	Displays the current WAN port information, including internet connection type, IP address, subnet mask, gateway, DNS, etc.

3.1.1.2 Configuration Wizard

After clicking the [Configuration Wizard] button, it navigates to the configuration wizard page, which helps you easily complete the basic network setup.

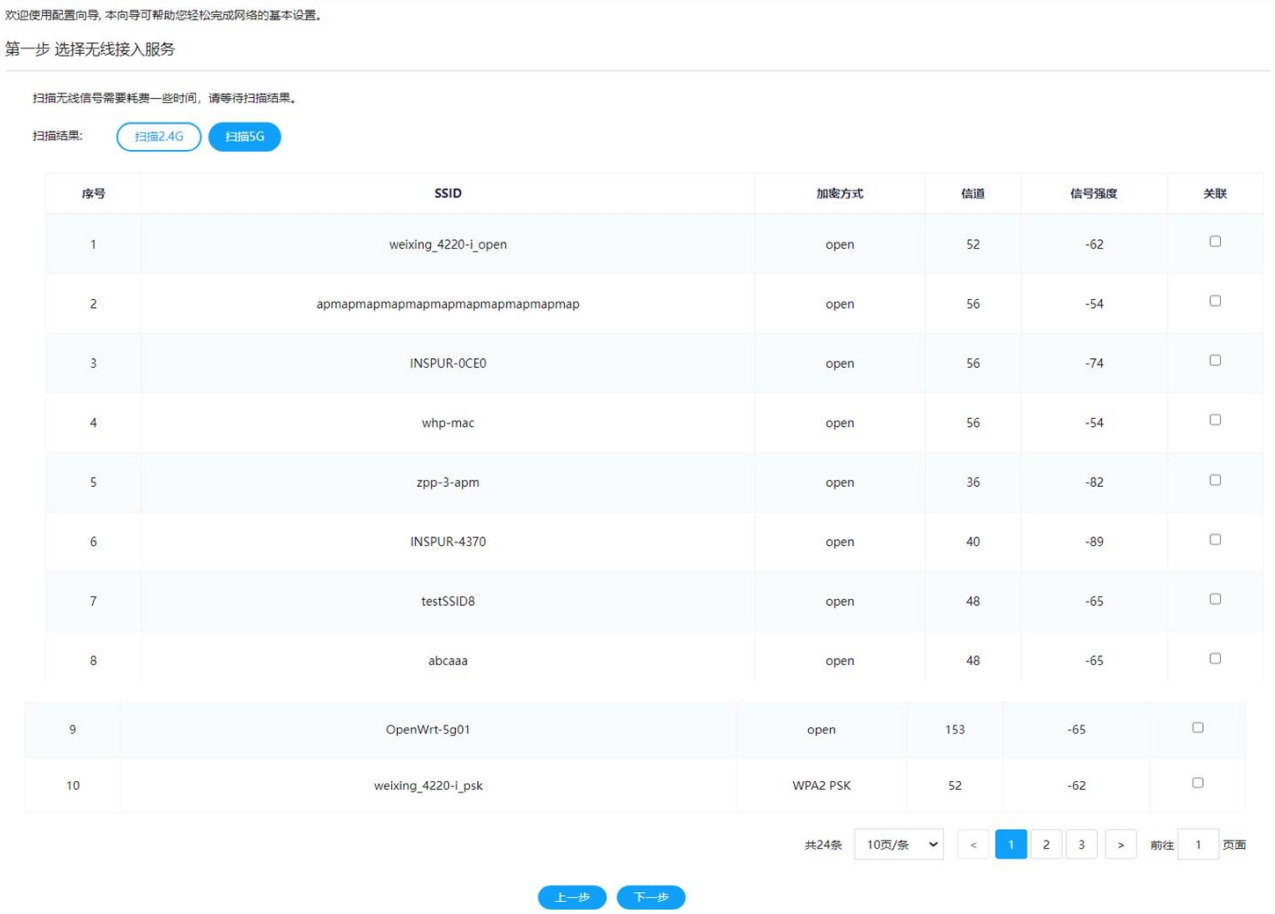
Current Working Mode

Displays the current working mode. Click to continue.

Note: To modify the working mode, please make changes on the wireless configuration page.

Step 1: Select Wireless Access Service

You can choose 2.4G access or 5G access. Take 5G access as an example: click Scan 5G, wait for the scan to complete, and a list of 5G scan results will appear. Select the association option behind the corresponding SSID and click to continue.



Step 2: Establish Wireless Connection

Enter the password of the SSID you wish to connect to. The wired port working mode can be selected as NAT, Clone, or Proxy.

After configuration is complete, click to continue.

Wired port working mode descriptions are shown in the table below:

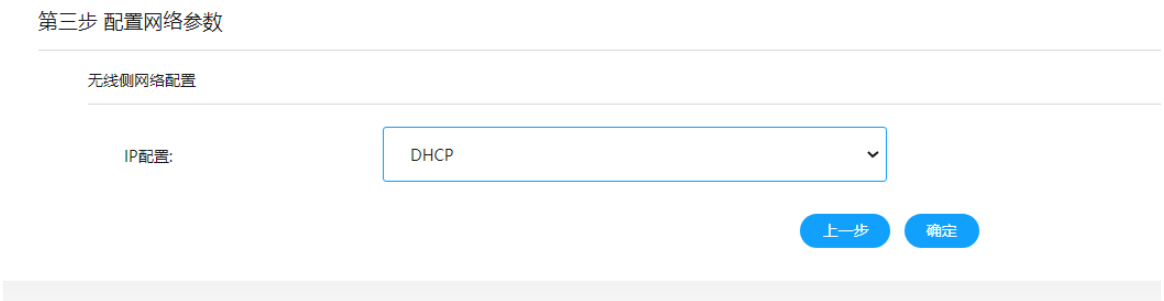
Serial Number	Name	Description
1	NAT	Wireless and wired perform three-layer NAT forwarding, default to NAT.
2	Clone	When Clone is selected, the wireless port will clone the MAC of the terminal under LAN1. Only LAN1 supports cloning. After selecting Clone, LAN1 can only connect to a single terminal.
3	Proxy	Wireless and wired perform two-layer forwarding. Proxy mode can be used when the associated AP does not support WDS mode.

Step 3: Configure Network Parameters

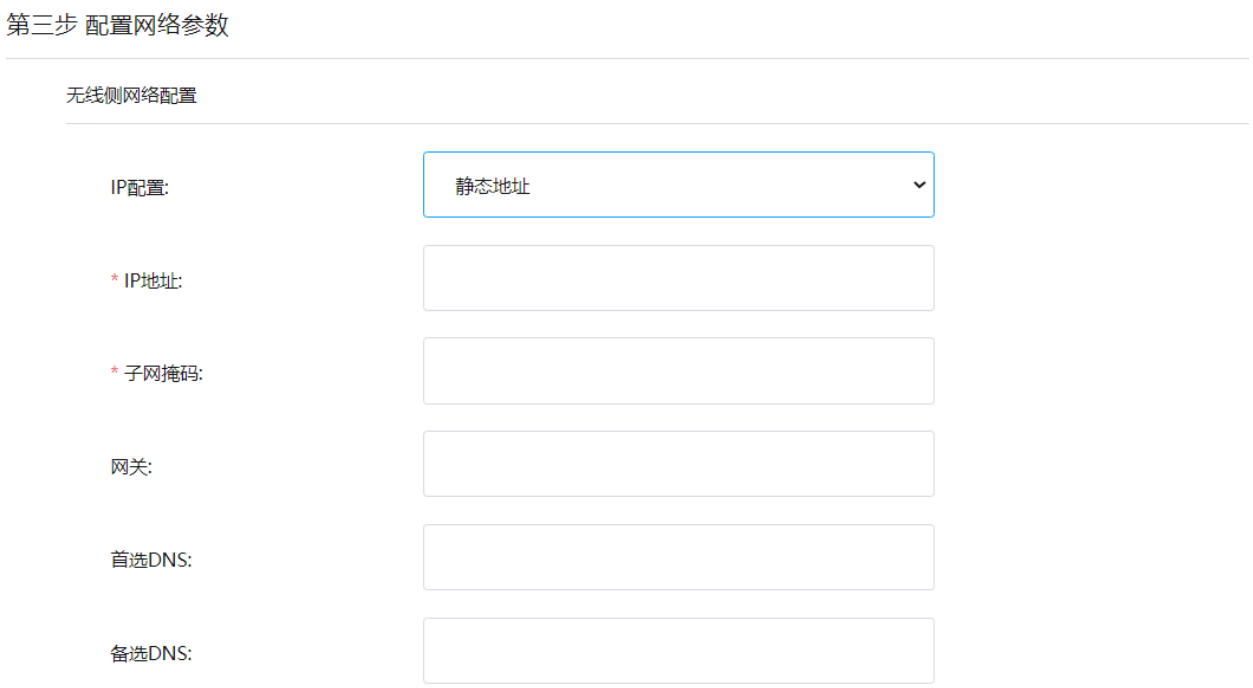
Wireless-side IP address, management IP configuration, and DHCP server configuration can be set.

Wireless-side IP address can be configured as DHCP or a static address.

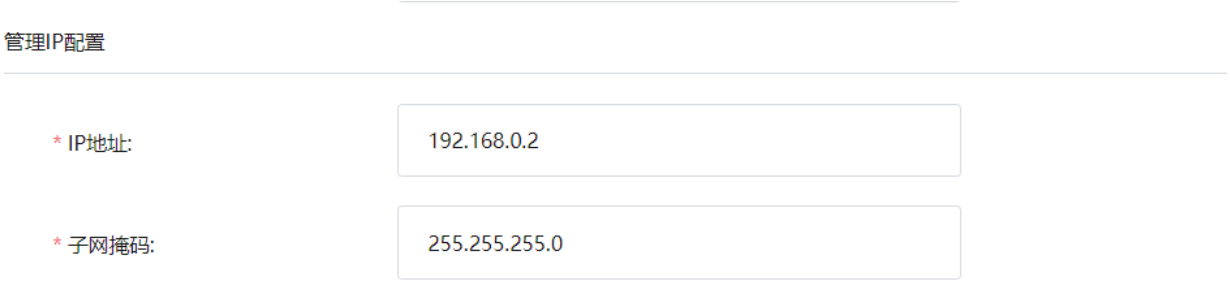
DHCP obtains the IP address from the DHCP server, as shown in the figure below.



A static address involves manually configuring the IP address, subnet mask, gateway, DNS, and other information, as shown in the figure below.



Configure the management IP address, default to 192.168.0.2, and subnet mask to 255.255.255.0. Change according to on-site requirements, as shown below.



Configure the DHCP server, including enabling DHCP services, start address, end address, and DNS address, as shown below.

3.1.1.3 Statistical information

Click the [Statistical Information] menu as shown below:

Function description: Displays the DHCP assigned address list.

3.1.1.4 Click the [WireWireless Configuration

less Configuration] menu,as shown below:

Function description:

Wireless configuration is divided into working mode, basic parameter configuration, roaming parameter configuration, and wired-side working mode.

Working mode: The AP mode can be switched, supporting client mode, fat AP mode, thin AP mode, bridge mode, and gateway mode. The AP will reboot after switching the working mode.

Basic parameter configuration: Can configure the SSID, authentication mode, key, and frequency band for the uplink bridge.

Detailed explanations of basic parameter configurations are as follows:

Parameter Name	Description
SSID	The uplink wireless network’s SSID, which can be manually entered or selected after scanning.
Authentication Mode:	The uplink wireless network’s authentication encryption mode can be manually selected or automatically selected after scanning the SSID.
Key:	The access password for the uplink wireless network must be manually entered.
Frequency Band:	Choose between 2.4G or 5G based on the uplink network’s SSID frequency band.

arameter configuration: Configures the automatic roaming switch, scanning channels (based on the radio frequency selected in the basic parameters), channel scanning cycle, scanning time interval, trigger scanning RSSI, keep-alive interval, maximum keep-alive attempts, roaming trigger threshold. Detailed parameter explanations are as follows:

Parameter Name	Value Range (Unit Marked)	Description
Automatic Roaming Switch:	Enable/Disable.	Whether to enable automatic roaming. When enabled, roaming parameters cannot be configured, and system-optimized parameters are used.
2.4G Scanning Channel:	Refer to the figure for available 2.4G channels.	The scanning duration for each channel should be configured based on the uplink network’s channel coverage.
5G Scanning Channel:	Refer to the figure for available 5G channels.	The scanning duration for each channel should be configured based on the uplink network’s channel coverage.
Channel Scanning Period:	100～5000 ms,	The duration of the RF channel scan. Can be modified when automatic roaming is disabled.
Scanning Interval:	10～300, seconds	The interval at which RF automatically scans. Default is 120s. Can be modified when automatic roaming is disabled.
Trigger Scanning RSSI:	20-80, Default is 20.	The RSSI value that triggers scanning. Can be modified when automatic roaming is disabled.

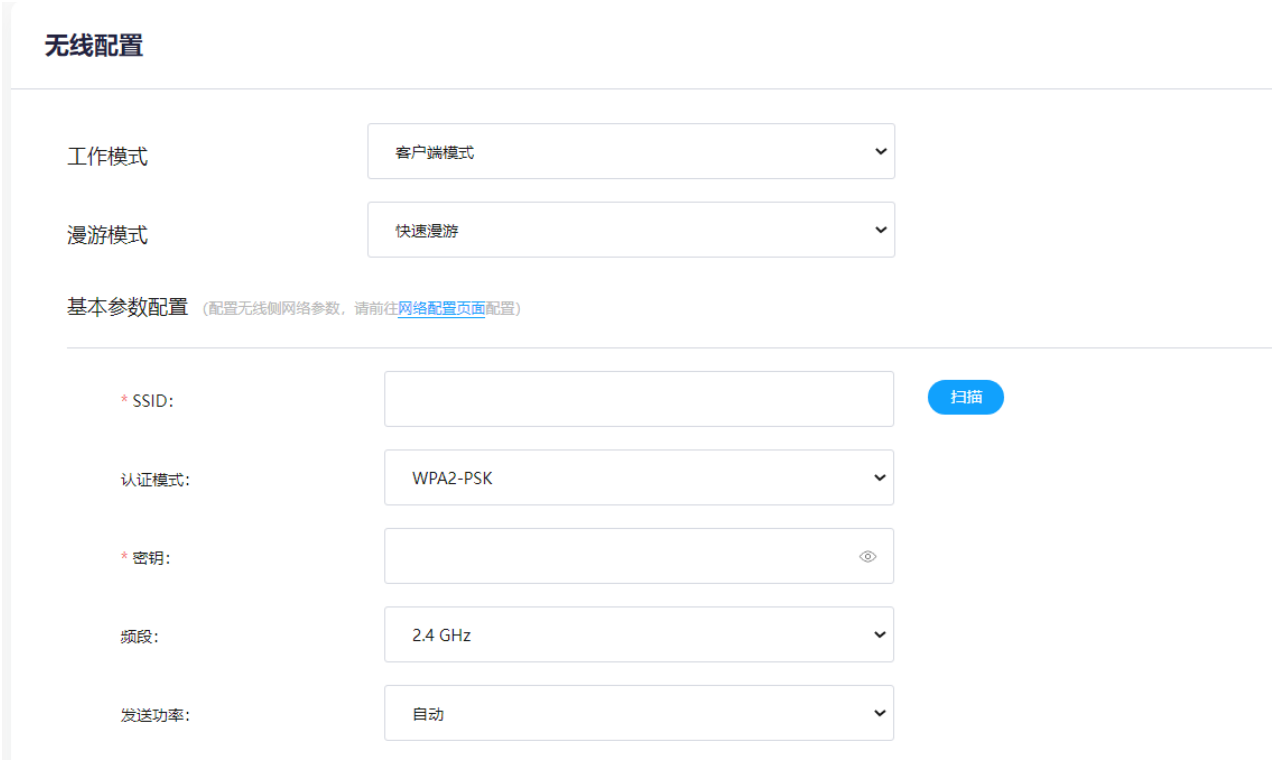
Keep-Alive Interval:	100-1000 ms, Default is 200.	The interval at which the AP sends keep-alive packets to the uplink device. Can be modified when automatic roaming is disabled.	Roaming
Maximum Keep-Alive Attempts:	3-10 Default is 5.	The maximum number of times keep-alive packets can timeout. If the limit is reached after a successful link connection, the link is considered disconnected. Can be modified when automatic roaming is disabled.	
Roaming Trigger Threshold	15-50 (default is 25)	The threshold for triggering roaming. Can be modified when automatic roaming is disabled.	

Wired-Side Operating Mode: Configurable wired port operating modes include NAT, Clone, and Proxy. Detailed parameter explanations are as follows:

Serial Number	Name	Description
1	NAT	Wireless and wired perform Layer 3 NAT forwarding. Default is NAT.
2	Clone:	After selecting Clone, the wireless port will clone the MAC of the terminal under LAN1. Only LAN1 supports cloning, and after selecting Clone, LAN1 can only connect to a single terminal.
3	Proxy:	Wireless and wired perform Layer 2 forwarding. Proxy mode can be used when the associated AP does not support WDS mode.

3.1.1.4.1 Fast Roaming

Click the [Wireless Configuration] menu as shown below:



Function description:

Wireless configuration is divided into working mode, basic parameter configuration, roaming parameter configuration, and wired-side working mode.

The AP mode can be switched, supporting client mode, fat AP mode, thin AP mode, bridge mode, and gateway mode. The AP will reboot after switching the working mode.

Basic parameter configuration: Can configure the SSID, authentication mode, key, and frequency band for the uplink bridge.

Detailed explanations of basic parameter configurations are as follows:

Parameter Name	Description
SSID	The uplink wireless network’s SSID, which can be manually entered or selected after scanning.
Authentication mode	The uplink wireless network’s authentication encryption mode can be manually selected or automatically selected after scanning the SSID.
Key	The access password for the uplink wireless network must be manually entered.
Frequency band	You can choose 2.4G or 5G based on the frequency band of the uplink network’s SSID.

Roaming parameter configuration: Configures the automatic roaming switch, scanning channels

(based on the radio frequency selected in the basic parameters), channel scanning cycle, scanning time interval, trigger scanning RSSI, keep-alive interval, maximum keep-alive attempts, roaming trigger threshold. Detailed parameter explanations are as follows:

Parameter Name	Value Range (Unit Marked)	Description
Automatic Roaming Switch:	Enable/Disable.	Whether to enable automatic roaming. When enabled, roaming parameters cannot be configured, and system-optimized parameters are used.
2.4G Scanning Channel:	Refer to the figure for available 2.4G channels.	The scanning duration for each channel should be configured based on the uplink network's channel coverage.
5G Scanning Channel:	Refer to the figure for available 5G channels.	The scanning duration for each channel should be configured based on the uplink network's channel coverage.
Channel Scanning Period:	100～5000 ms,	The duration of the RF channel scan. Can be modified when automatic roaming is disabled.
Scanning Interval:	10～300, seconds	The interval at which RF automatically scans. Default is 120s. Can be modified when automatic roaming is disabled.
Trigger Scanning Rssi:	20-80,Default is 20.	The RSSI value that triggers scanning. Can be modified when automatic roaming is disabled.
Keep-Alive Interval:	100-1000 ms, Default is 200.	The interval at which the AP sends keep-alive packets to the uplink device. Can be modified when automatic roaming is disabled.
Maximum Keep-Alive Attempts:	3-10 Default is 5.	The maximum number of times keep-alive packets can timeout. If the limit is reached after a successful link connection, the link is considered disconnected. Can be modified when automatic roaming is disabled.
Roaming Trigger Threshold:	15-50. Default is 25.	The threshold for triggering roaming. Can be modified when automatic roaming is disabled.

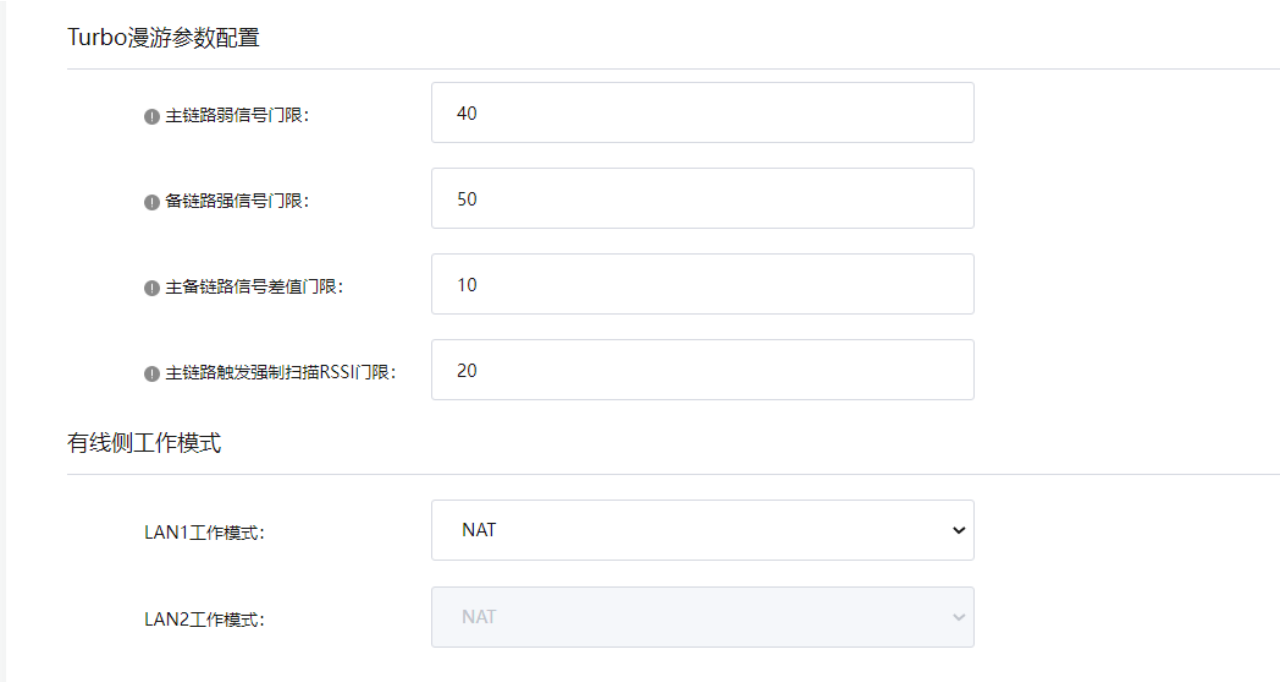
Operating Mode: Configurable wired port operating modes include NAT, Clone, and Proxy. Detailed parameter explanations are as follows:

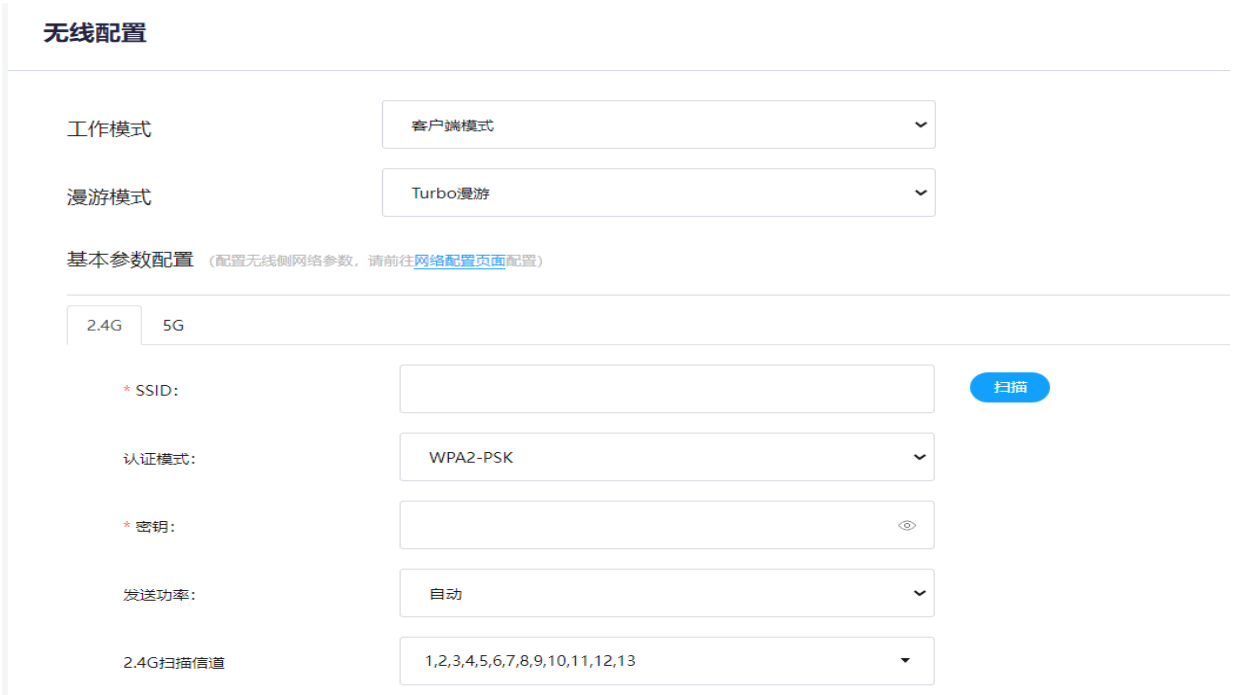
Serial Number	Name	Description
1	NAT	Wireless and wired perform Layer 3 NAT forwarding. Default is NAT.

2	Clone	After selecting Clone, the wireless port will clone the MAC of the terminal under LAN1. Only LAN1 supports cloning, and after selecting Clone, LAN1 can only connect to a single terminal.
3	Proxy	Wireless and wired perform Layer 2 forwarding. Proxy mode can be used when the associated AP does not support WDS mode.

3.1.1.4.2 Dual-Link Roaming

Select Turbo Roaming in Wireless Configuration to configure it, as shown below





Function Description: Turbo roaming associates the 2.4G and 5G signals of the AP and distinguishes the active and standby links. During the movement, the active and standby links are switched, including bridge parameter setting, Turbo roaming parameter setting, and wired working mode

Bridge parameters: You can configure the SSID, authentication mode, and key for bridge connection. The detailed parameters are described as follows:

Parameter Name	Description
<2.4G>/<5G>	The 2.4G and 5G bands can be configured to connect to the same SSID or different SSID
SSID	The uplink wireless network's SSID, which can be manually entered or selected after scanning.
Authentication mode	The uplink wireless network's authentication encryption mode can be manually selected or automatically selected after scanning the SSID
Key	The access password for the uplink wireless network must be manually entered.

Turbo Roaming parameter Settings: Set the threshold parameters for active/standby switchover during Turbo roaming. The parameters are described as follows:

Parameter Name	Description
Weak signal threshold of the primary link	When the active link is weaker than the specified value, active/standby switchover is triggered. The value ranges from 10 to 40
Strong signal threshold of the standby link	When the standby link is stronger than the set value, a switchover is triggered. The value ranges from 30 to 60
Signal difference threshold of the active and standby links	When the signal difference between the active and standby links is higher than the specified value, an active and standby link switchover is triggered. The value ranges from 2 to 35
The primary link triggers the threshold for forcibly scanning RSSI	When no standby link is available and the signal of the active link is lower than the set value, the SSID of the active link is scanned. The value ranges from 10 to 40
2.4G Scanning Channel:	The scanning duration for each channel should be configured based on the uplink network's channel coverage.
5G Scanning Channel:	The scanning duration for each channel should be configured based on the uplink network's channel coverage.

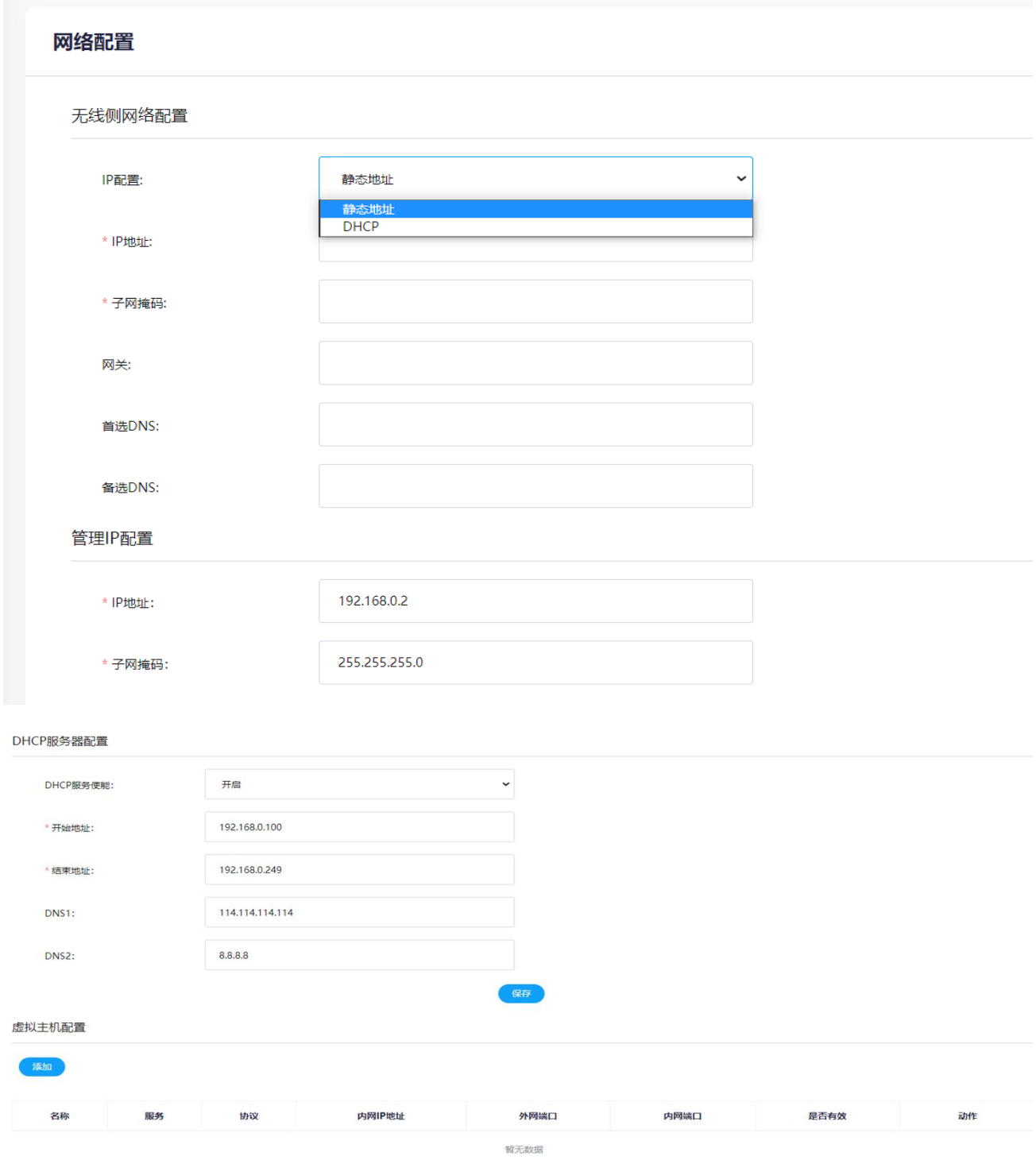
The wired-side working mode: The wired port working mode can be configured as NAT, Clone, or Proxy. Detailed parameter descriptions are as follows:

Serial Number	Name	Description

1	NAT	Wireless and wired perform Layer 3 NAT forwarding. Default is NAT
2	Clone	After selecting Clone, the wireless port will clone the MAC of the terminal under LAN1. Only LAN1 supports cloning, and after selecting Clone, LAN1 can only connect to a single terminal.
3	Proxy	Wireless and wired perform Layer 2 forwarding. Proxy mode can be used when the associated AP does not support WDS mode.

3.1.1.5 Network Configuration

Click the [Network Configuration] menu as shown below:



Function Description:

Network configuration is divided into wireless side network settings, management IP configuration, DHCP server configuration, and virtual machine host configuration.
Wireless Side Network Configuration: Set the IP address as DHCP or static address after associating with the uplink wireless network, the detailed parameters are as follows:

Parameter Name	Description
Internet access mode	Select a DHCP or static address. After DHCP is selected, the system automatically obtains an IP address assigned by the DHCP server

IP address	This parameter is optional when selecting a static address. The static address on the wireless side of the bridge must match the wireless network
Subnet mask	This parameter can be configured when a static address is selected. The subnet mask on the wireless side of the bridge must match that on the wireless network
Gateway	This parameter can be configured when a static address is selected. The gateway on the wireless side of the bridge must match the wireless network
Preferred DNS	This parameter can be configured when a static address is selected. The DNS on the wireless side of the bridge must match the wireless network
Alternate DNS	This parameter can be configured when a static address is selected. The DNS on the wireless side of the bridge must match the wireless network

Management IP address: Configure the management IP address of the device, which is also the gateway assigned by the DHCP server. The parameters are described as follows:

Parameter Name	Description
IP address	This IP address is the gateway address of the wired network. You can log in to the web page using this IP address. You can modify the IP address based on the actual project situation
Subnet mask	The default mask is 24 bits. You can change the mask based on site requirements

HCP server configuration: The device acts as a DHCP server to assign IP addresses to terminals. The details are as follows:

Parameter Name	Description
DHCP service enabled	Enable/disable the DHCP service
Start address	Start IP address of the DHCP address pool
End address	End IP address of the DHCP address pool
DNS1	Address of the active DNS server
DNS2	Address of the standby DNS server

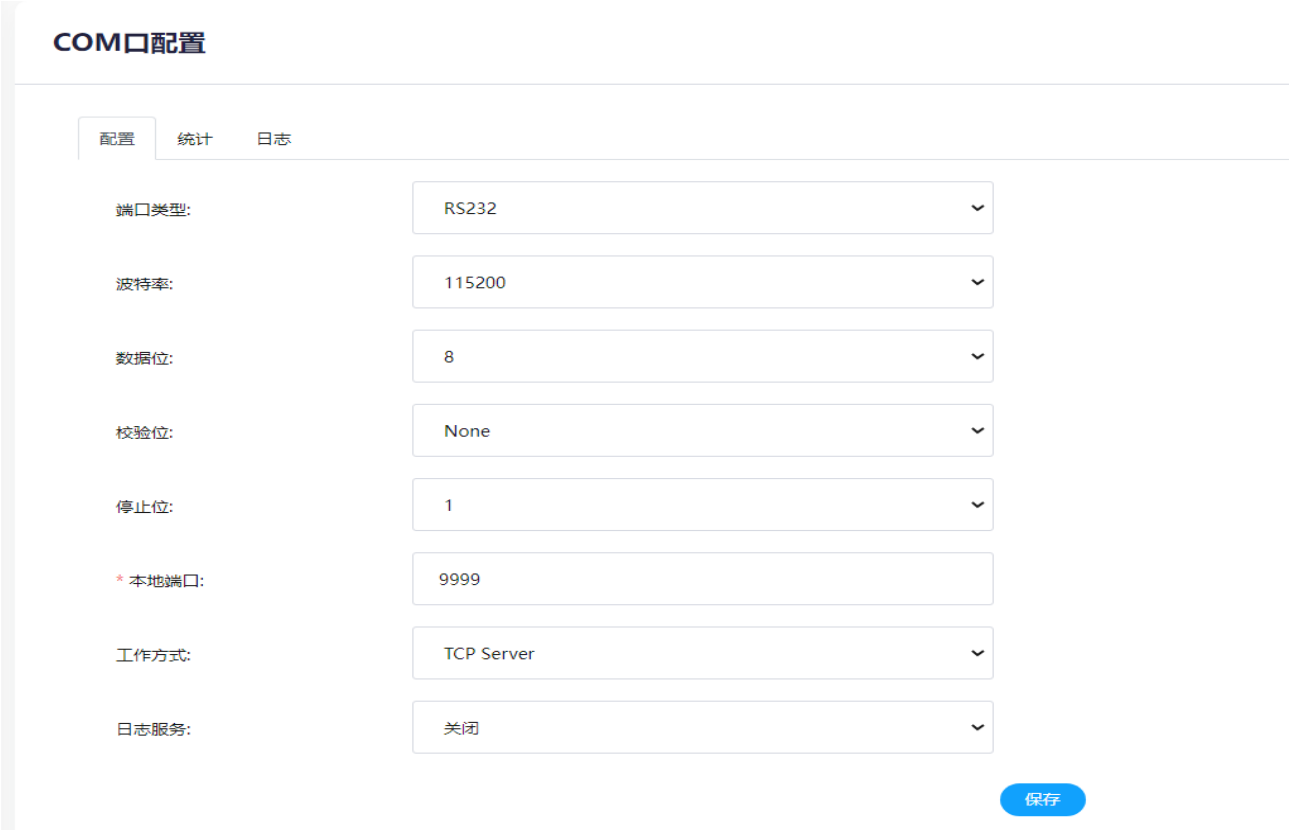
Virtual host configuration: Add virtual hosts to implement port mapping. The page for adding virtual hosts is shown in the following figure

The details are as follows:

Parameter name	Description
Name	Identifies the virtual host service.
Service	Identifies the service of the virtual host. If the default ssh, http, telent, or ftp is selected, the following protocols and Intranet ports cannot be modified. If other services or protocols and Intranet ports need to be modified, leave this parameter blank
Protocol	The value can be TCP,UDP, or TCP+UDP
Intranet IP Address	The internal IP address of the virtual host, that is, the IP address obtained by the DHCP server or the static address configured by the host, needs to be used
External network port	Port number used for external access to the virtual host
Intranet port	The port number of a service used by the virtual host itself

3.1.1.6 COM Port Settings

Click the "COM port Configuration" menu, as shown in the figure below:



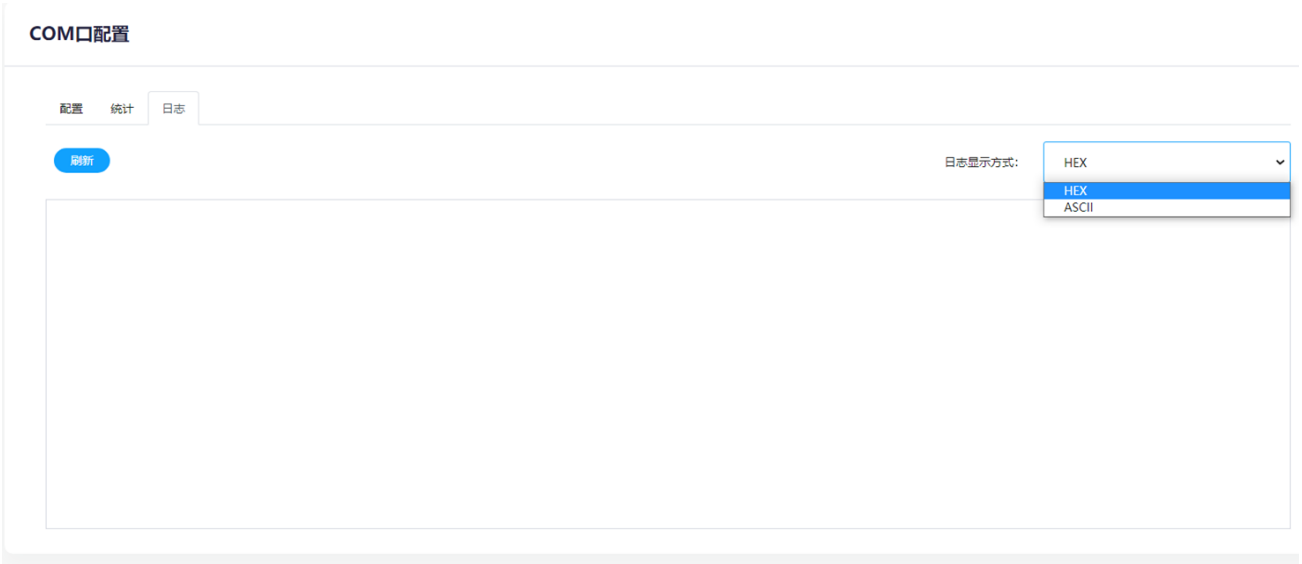
Function Description:
The COM port configuration is divided into <Configuration>, <Statistics> and <Log> to enable the communication between the serial device and the device on the network side.
The <Configuration> page allows you to configure the serial port of the device, the detailed description is as follows

Parameter Name	Description
Port Type	RS232 and RS485 can be selected, according to the actual scene to connect RS232 or RS485 selection
Baud Rate	The baud rate of the serial port must be the same as that of the serial port on the terminal
Data Bits	The serial port data bit must be consistent with the serial port data bit on the terminal
Check Bit	The serial port check bit must be the same as the serial port check bit on the terminal
Stop Bit	The serial stop bit must be the same as the serial stop bit on the terminal
Local Port	TCP or UDP port on the local network Configure the TCP or UDP Server port on the network.
Remote Port	Configure the IP address of the TCP or UDP Server in the network, which can be configured when the working mode is UDP Client and TCP Client.

Working mode	The UDP Client, TCP Client, UDP Server, and TCP Server can be configured
Remote server address	The IP address of the TCP or UDP Server on the network can be configured when the working mode is UDP Client or TCP Client
Log service	You can enable or disable this function. After this function is enabled, you can view logs on the < Log > TAB page

The < Statistics > page counts the number of bytes sent and received, as shown in the figure below

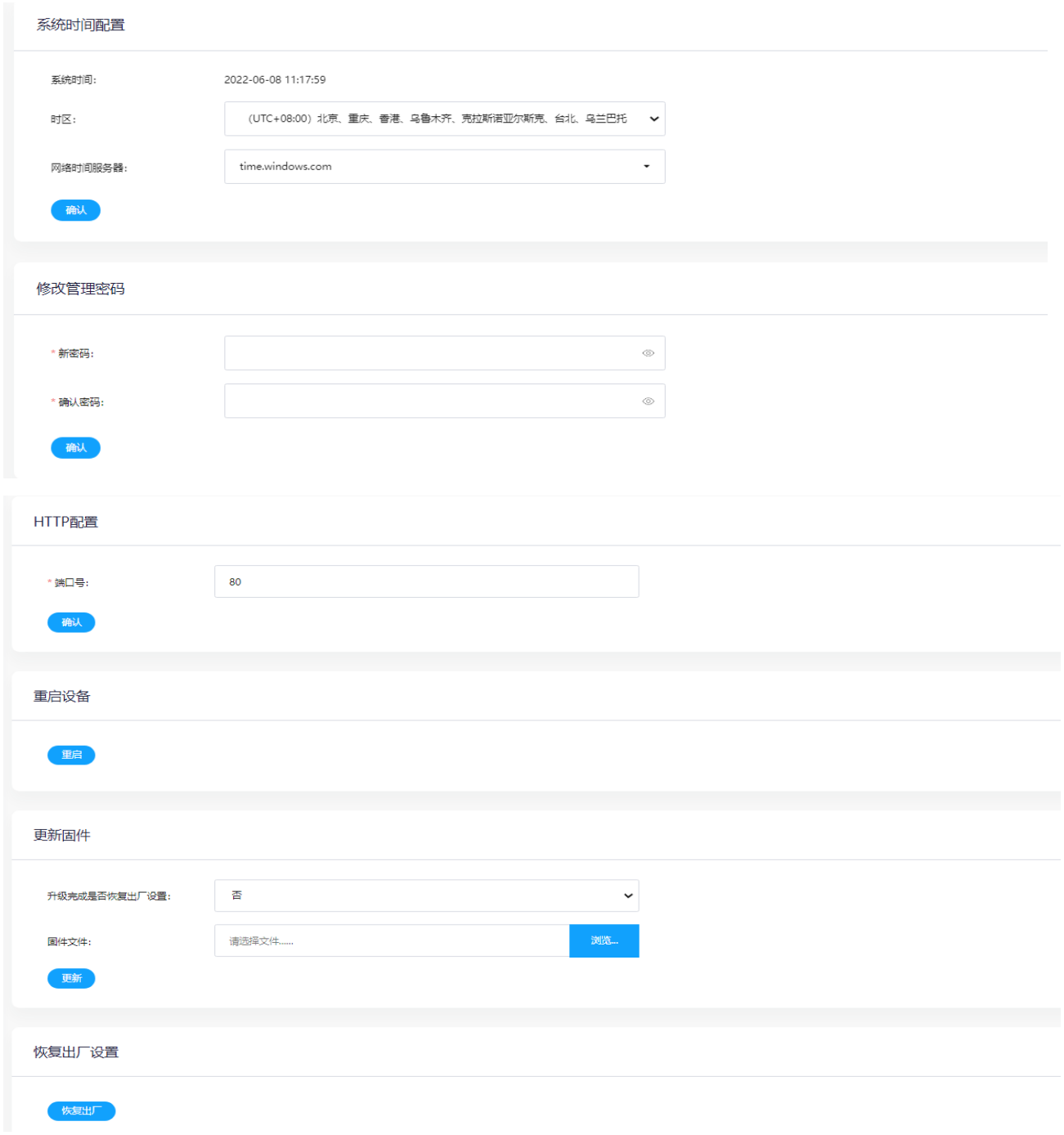
< Log > page When the log service is enabled, the content transmitted through the serial port can be displayed in HEX or ASCII mode, as shown in the following figure



3.1.1.7 System services

3.1.1.7.1 Service

Click the "Service" menu, as shown in the figure below:



Function Description: This page provides system functions, including setting the system time, changing the management password, configuring the HTTP port number, restarting the device, updating the firmware, and restoring factory Settings.

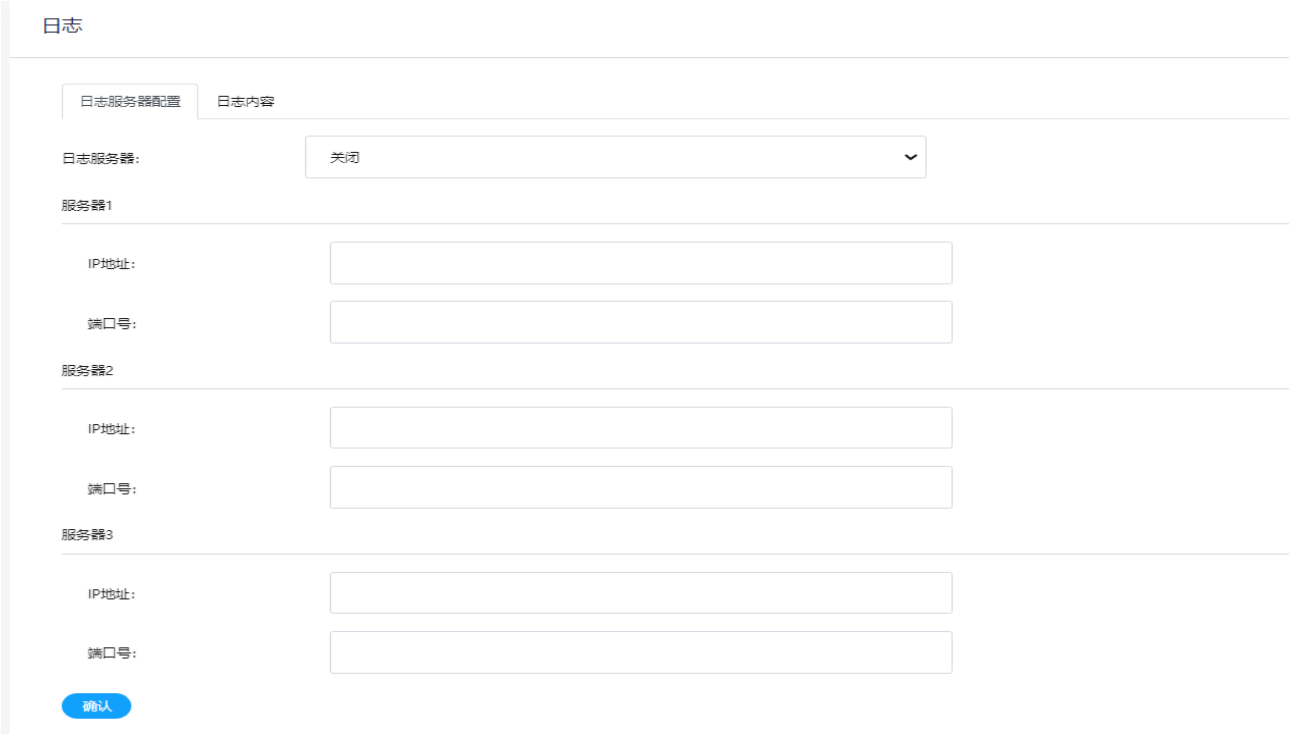
The detailed description is as follows:

Configuration item	Description
System time configuration	The time zone and network time server can be configured. The system time can be synchronized when the network is normal
Change Admin Password	The password for logging in to the WEB page can be changed based on actual project requirements

HTTP configuration	Configure the port for accessing the web page of the device, the default port is 80. After modifying other ports, when logging into the web page, you need to enter: IP:xxxx (IP is the ip address of the AP, and xxxx is the port number) in the address bar of the browser.
Restart the device	The device will restart after clicking Reboot
Update firmware	To upgrade the software version of the device, click <Browse> to select the local version file, click <Update> and the device will be upgraded, Do not power off during the upgrade process. Note: If "Yes" is selected for "Restore factory settings after upgrading", the AP will be restored to factory settings after upgrading.
Restore Factory Settings	Click "Factory Reset" and the device will restart and clear all configurations

3.1.1.7.2 Logs

Click the [Log] menu, as shown in the figure below:

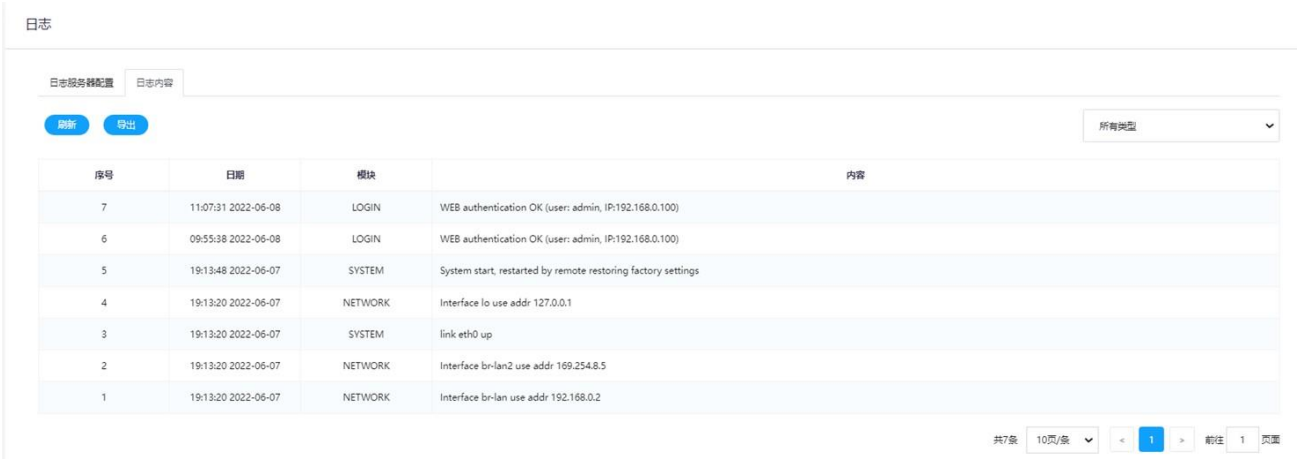


Function Description: 【 Log 】 Includes log server configuration and log content. This page allows you to configure the address and port of the external log server. The details are as follows:

configuration item	Description
Log server	Enable or disable the function of connecting to an external log server.

IP address	The IP address of the log server must ensure that the logical link is unblocked. A maximum of three log servers can be configured
Port number	Log server port number, the port number of the log server used to receive logs, up to 3 log servers can be configured

The log content displays the device's event log, as shown below



Log types are described as follows:

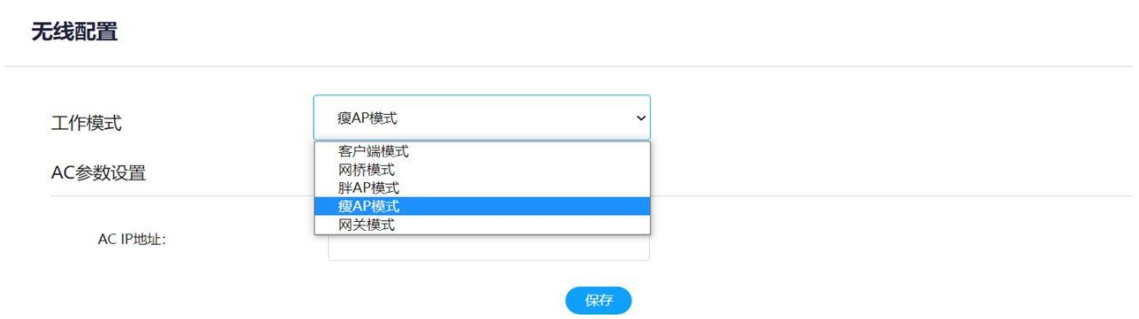
Log type	Description
All types	Displays all types, default selections
WLAN	Displays logs of the wireless module, including terminal association logs, terminal disassociation logs, and PSK authentication Logs
SYSTEM	Displays device startup logs and port status logs
CAPWAP	CAPWAP tunnel status logs of the thin AP are displayed
DHCP	Displays DHCP assigned address logs and terminal RELEAS IP logs
LOGIN	Display web login logs and SSH login logs
NETWORK	Displays a log of the port's use of an IP address

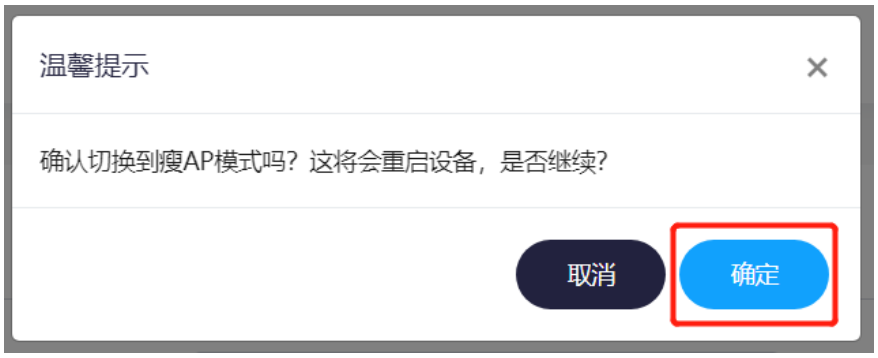
3.2 Switching the AP to Thin AP Mode

Thin AP mode requires the use of an AC controller. This web page is primarily used to configure the AP's IP address and the AC address the AP needs to connect to. RF configuration is implemented through the AC.

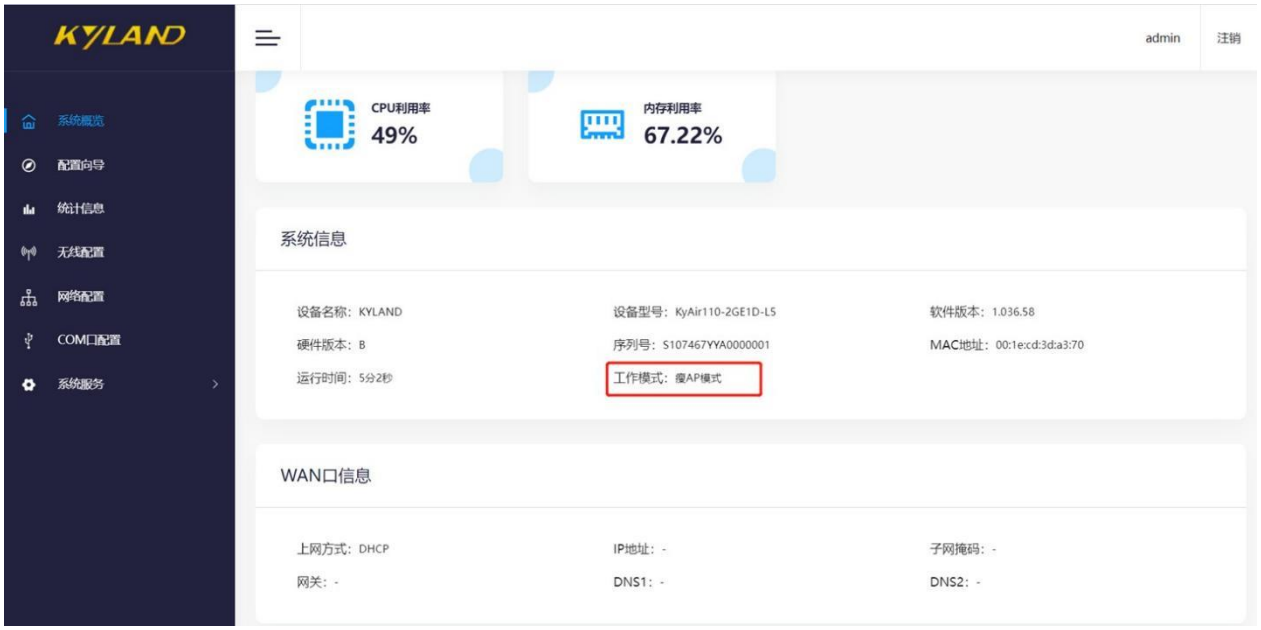
The AP defaults to client mode at the factory and can be switched to thin AP mode via the [Wireless Configuration] page.

Path: [Wireless Configuration] > Click the dropdown, select "Thin AP Mode," and click "OK" in the popup dialog.





After the AP restarts, log in to the web page again to see that the AP has switched to thin AP mode.

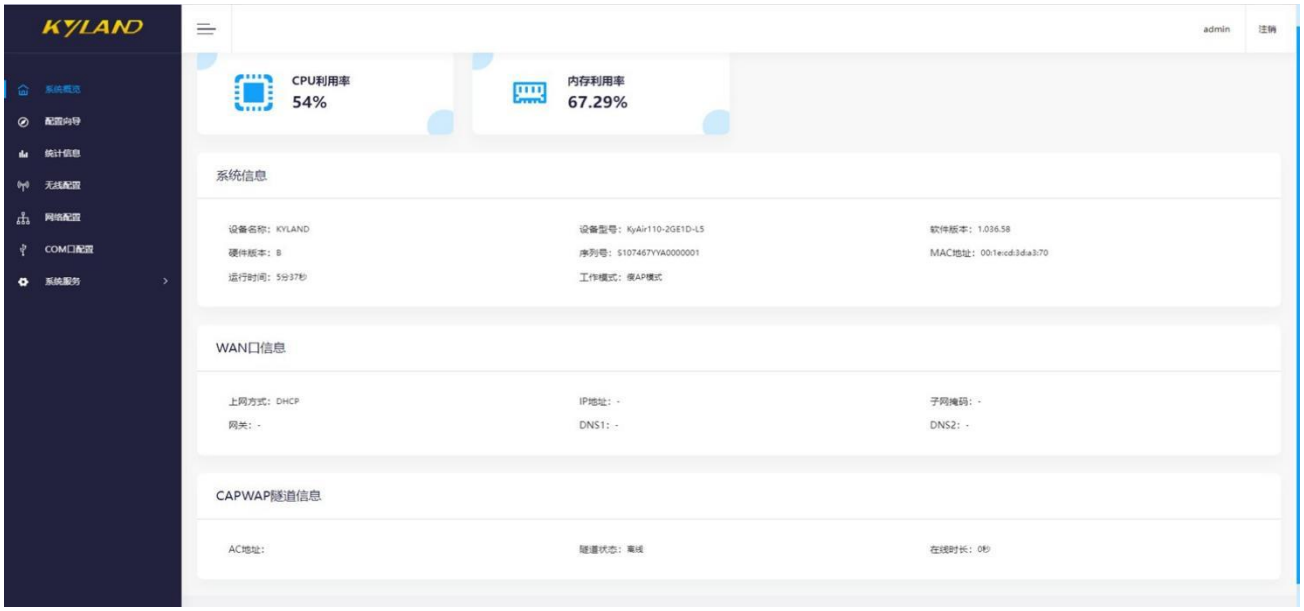


3.2.1 Main Menu Navigation

3.2.1.1 System Overview

After a successful login, the system's homepage is the [Overview] menu, defaulting to thin AP mode.

The thin AP system overview page is shown below:



Function Description: The [System Overview] menu provides an overview of the current system status, including CPU and memory utilization, system information, WAN port information, and CAPWAP tunnel information.

Thin AP status information is described in the following table:

Serial Number	Name	Description
1	Realtime Status	Realtime Status Displays the current CPU and memory utilization.
2	System information	System Info Displays device model, software version, hardware version, serial number, MAC address, runtime, working mode, and more.
3	WAN port information	Displays Internet connection type and IP information.
4	CAPWAP tunnel information.	Displays the AC address, tunnel status, and online duration.

3.2.1.2 Configuration Wizard

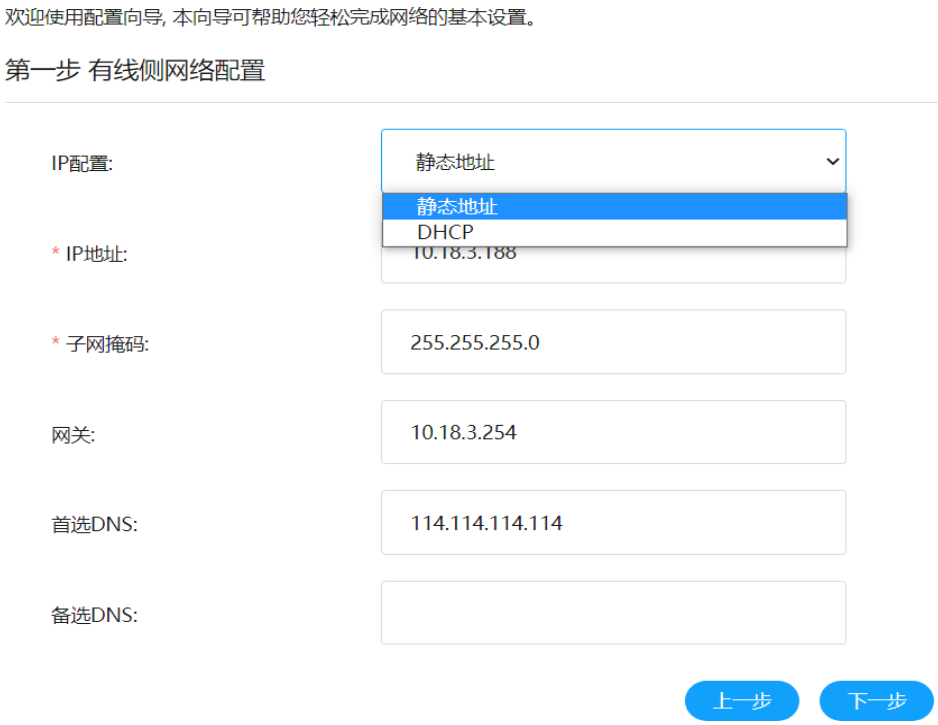
Click the [Configuration Wizard] button to navigate to the wizard page, which helps you easily complete basic network settings.

Current Working Mode

Displays the current working mode. Click to continue.

Note: To modify the working mode, change it on the wireless configuration page.

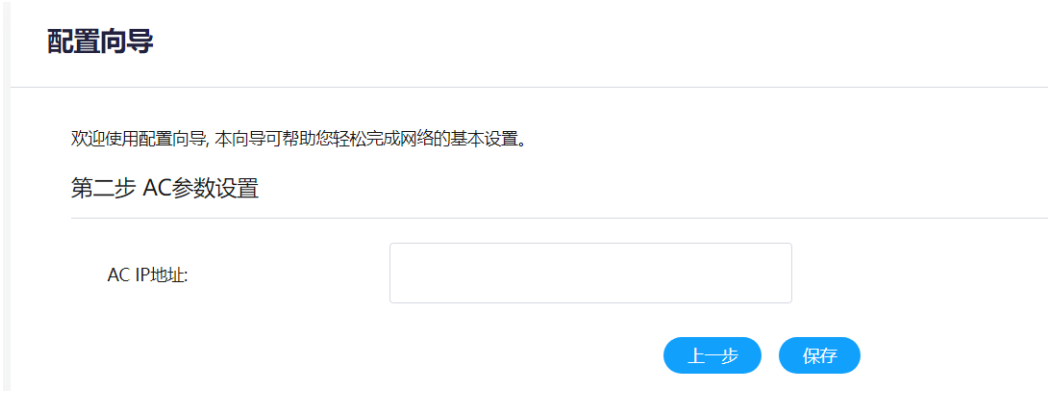
Step 1: Wired-Side Network Configuration



The connection type can be static IP or DHCP. If DHCP is selected, the AP can automatically obtain an IP address assigned by the DHCP server in the wired network, and the AP's IP address must be queried in the DHCP server's assignment records.
If static IP is selected, you need to manually configure the device's IP address, subnet mask, gateway, DNS, etc.click <Next> after the configuration is complete.

Step 2: AC Parameter Configuration

Configure the AC's IP address. Generally, in a Layer 2 network environment, the AP can broadcast to discover and associate with the AC. In a Layer 3 network environment, the AP can associate with the AC using the option43 field provided by the DHCP server.
Only when the AP and AC are in a Layer 3 network and the DHCP server does not support option43 is the AC's IP address manually configured.
After configuring the AC's IP address, the AP automatically restarts for the changes to take effect.



After completing the settings, click the button.

3.2.1.3 Statistical Information

Click the [Statistics] menu as shown below:

Function Description: Displays information about the wireless client list.

3.2.1.4 Wireless Configuration

Click the [Wireless Configuration] menu as shown below:

Function Description:

The wireless configuration includes working mode and AC parameter configuration.

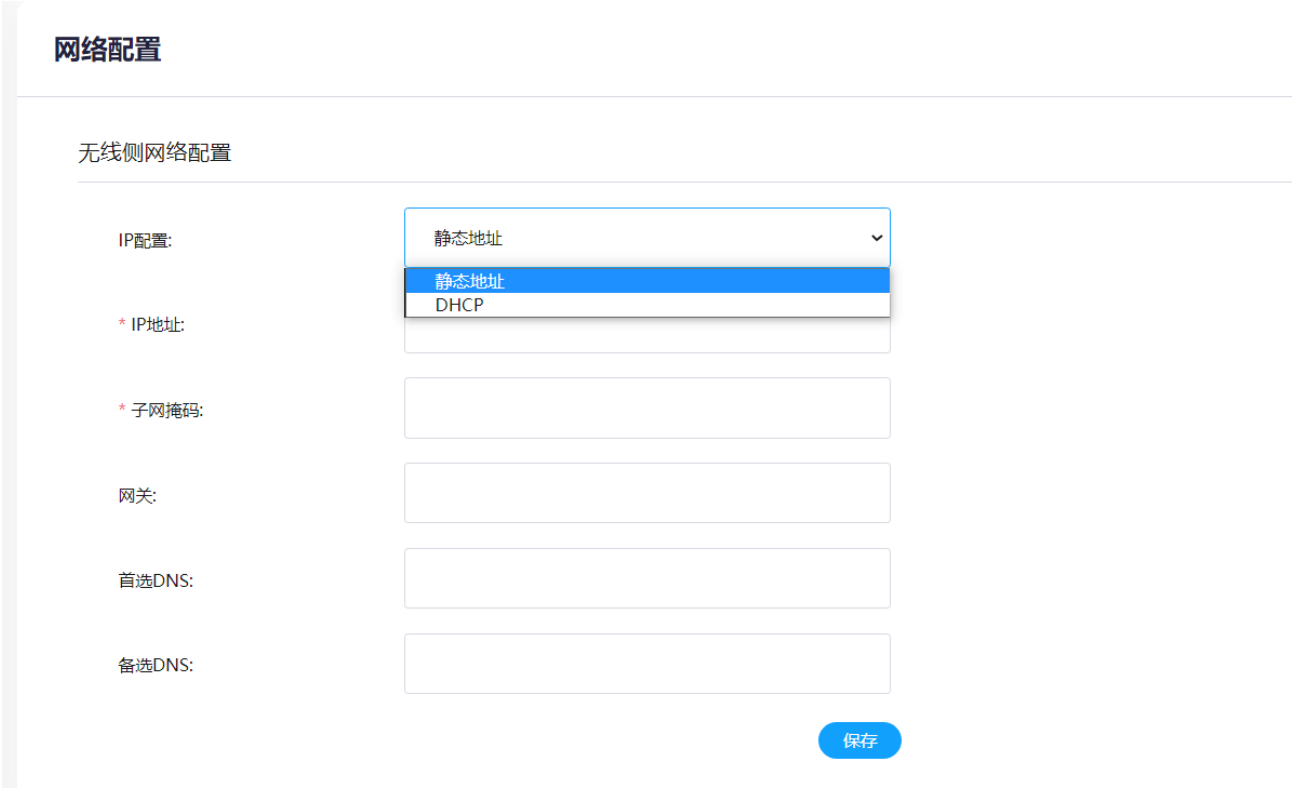
The working mode can switch the AP’s mode, supporting fat AP mode, client mode, thin AP mode, bridge mode, and gateway mode.

Note: Client mode is only supported by the KyAir110-2GE1D-L5 device; other AP models do not have a client mode option.

In AC parameter configuration, after configuring the AC’s IP address, click the button, and the AP will restart to apply the changes.

3.2.1.5 Network Configuration

Click the [Network Configuration] menu as shown below:



In bridge mode network configuration, only the wireless-side IP address is configured.

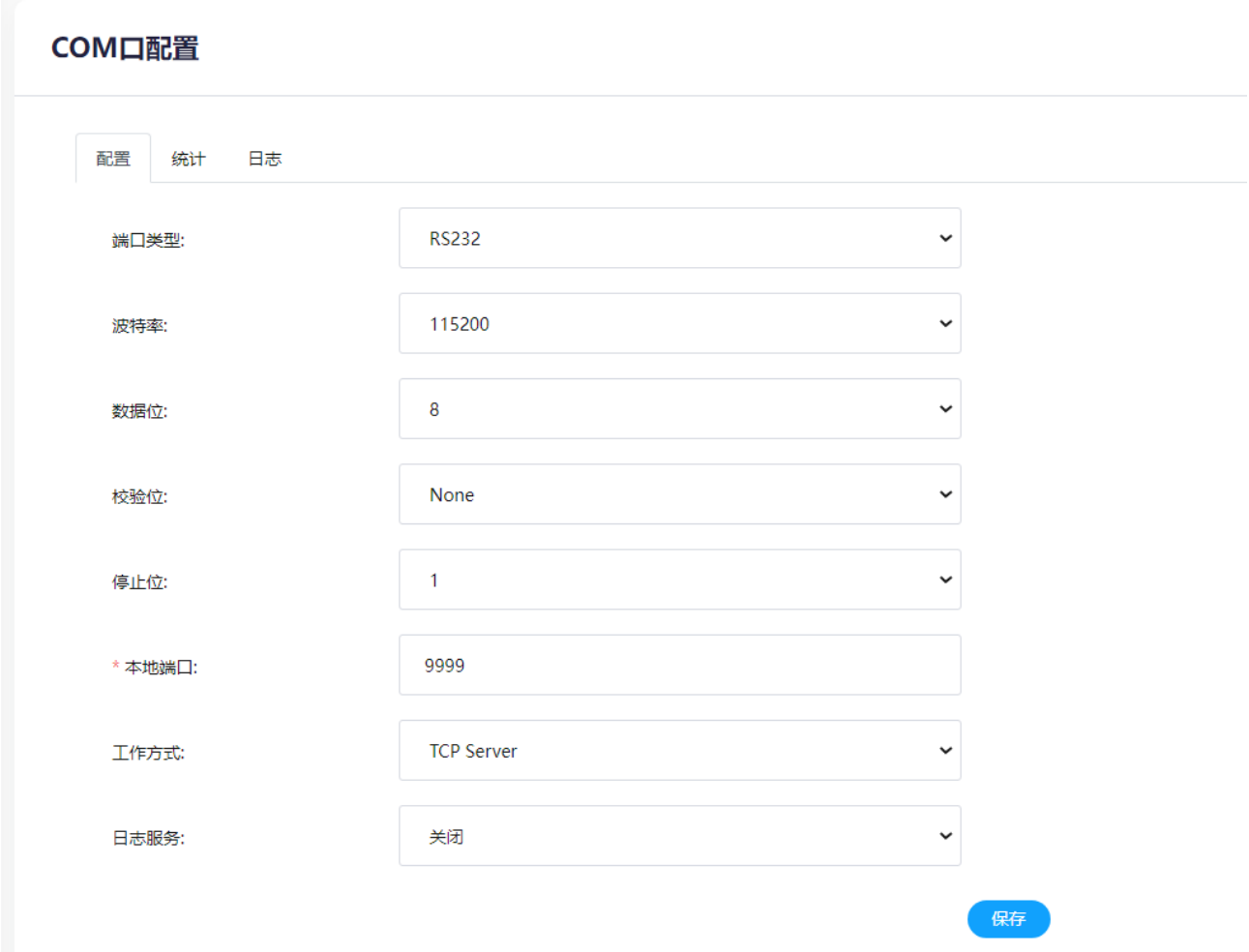
Wireless-side network configuration: Set the associated uplink wireless network and configure the IP address as DHCP or static. Detailed parameter descriptions are as follows:

Parameter Name	Description
Internet access mode	Select a DHCP or static address. After DHCP is selected, the system automatically obtains an IP address assigned by the DHCP server
IP address	This parameter is optional when selecting a static address. The static address on the wireless side of the bridge must match the wireless network

Subnet mask	This parameter can be configured when a static address is selected. The subnet mask on the wireless side of the bridge must match that on the wireless network
Gateway	This parameter can be configured when a static address is selected. The gateway on the wireless side of the bridge must match the wireless network
Preferred DNS	This parameter can be configured when a static address is selected. The DNS on the wireless side of the bridge must match the wireless network
Alternate DNS	This parameter can be configured when a static address is selected. The DNS on the wireless side of the bridge must match the wireless network

3.2.1.6 COM Port Settings

Click the [COM Port Configuration] menu, as shown below:



Function Description:

Configure the COM port to enable communication between serial devices and devices on the network side.

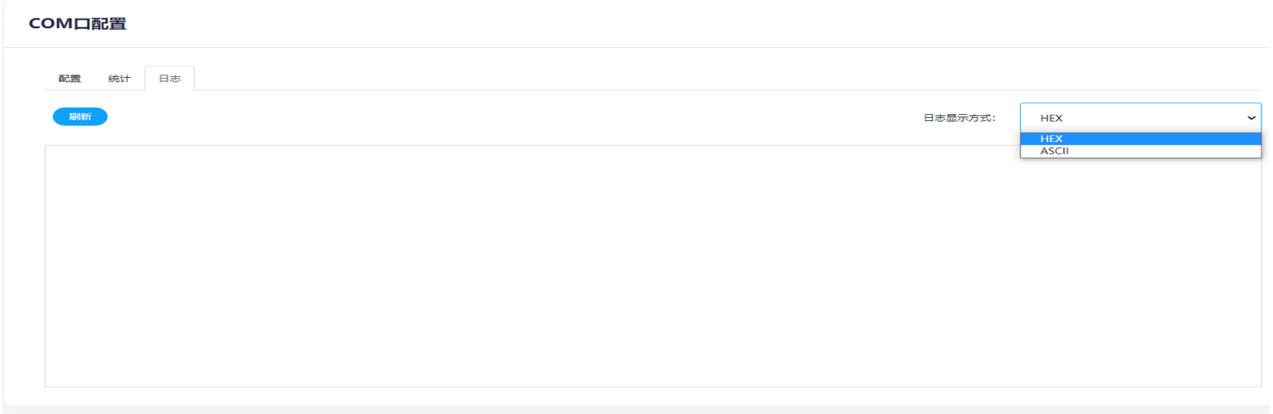
COM port configuration is divided into <Configuration>, <Statistics>, and <Logging>.

The page allows you to configure the device's serial port. Detailed explanations are as follows:

Parameter Name	Description
Port Type	Can select RS232 or RS485, depending on the actual scenario to connect RS232 or RS485.
Baud Rate	Set the baud rate of the serial port, which needs to be consistent with the baud rate of the terminal's serial port.
Data Bits	Set the data bits of the serial port, which needs to be consistent with the data bits of the terminal.
Check Bit	Set the check bit of the serial port, which needs to match the parity bit of the terminal.
Stop Bit	Set the stop bit of the serial port, which needs to match the terminal's stop bit.
Local Port	The device's network-side TCP or UDP port.
Remote Port	Configure the TCP or UDP server port in the network, configurable when operating as UDP Client or TCP Client.
Working Mode	Configurable as UDP Client, TCP Client, UDP Server, TCP Server
Remote Server Address	Configure the IP address of the TCP or UDP server in the network, configurable when operating as UDP Client or TCP Client.
Log Service	Can choose to enable or disable. When enabled, logs can be viewed on the tab.

The page can count the number of bytes sent and received, as shown below:

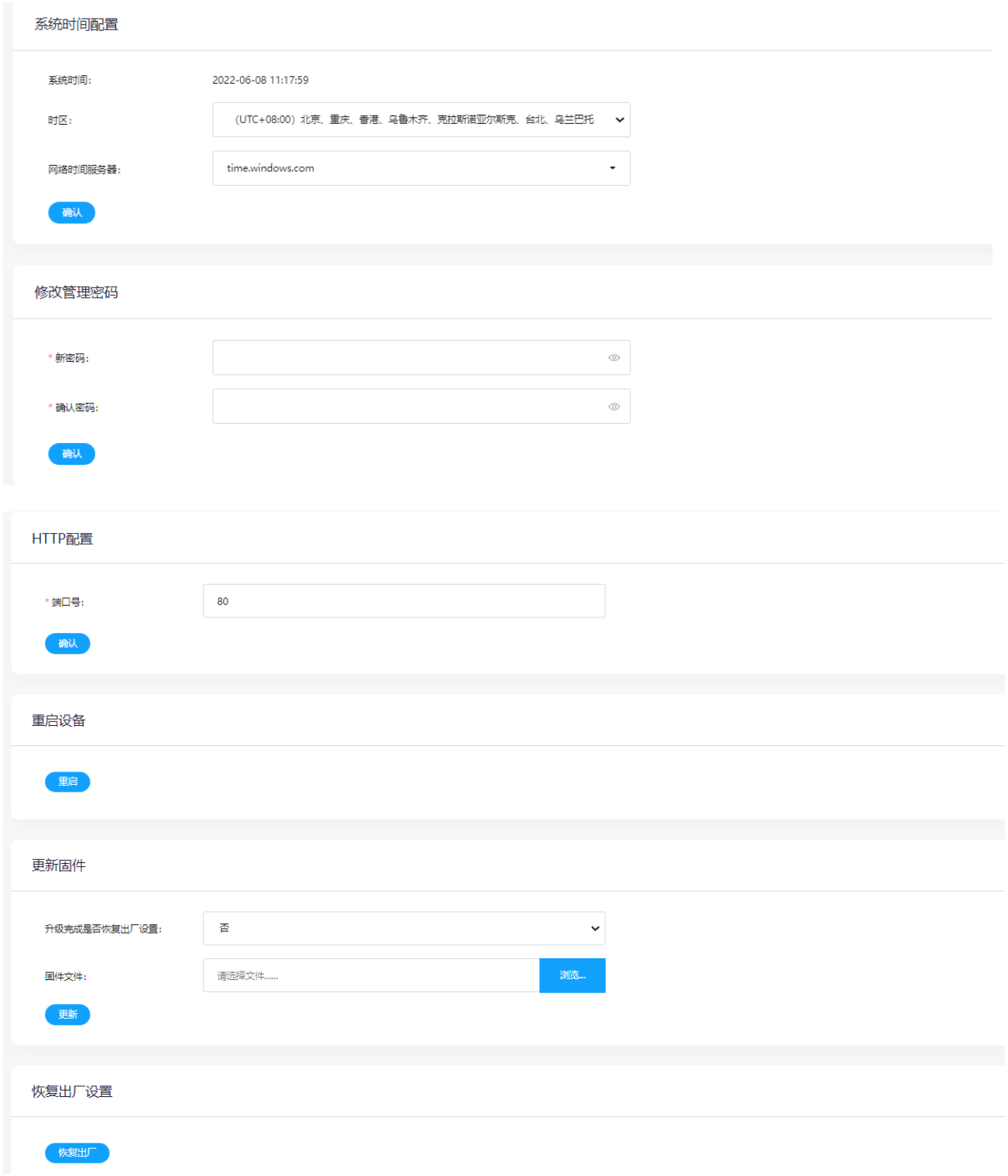
The page, when the log service is enabled, displays the contents of serial port transmission. The log display mode can be selected as HEX or ASCII, as shown below:



3.2.1.7 System Services

3.3.1.7.1 Services

Click the [Services] menu, as shown below:

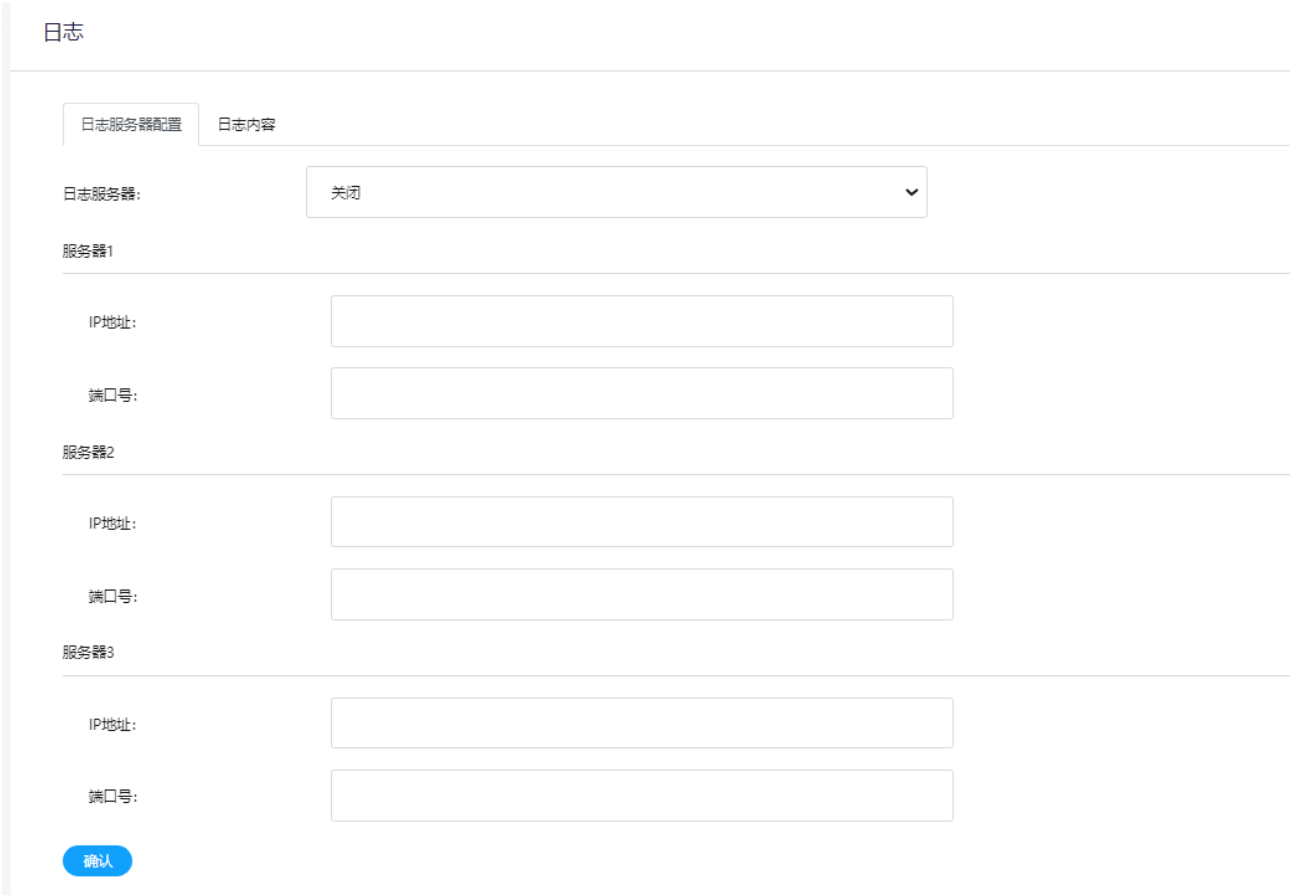


Click "Factory Reset" and the device will restart and clear all configurationsDetailed explanation is as follows:

configuration item	Description
System Time Configuration	Configurable time zone and network time server. When the network is smooth, the system time can be synchronized.
Modify Admin Password	The password used to log in to the WEB page, which can be modified according to actual project requirements.
HTTP Configuration	Configures the port for accessing the device's web page. The default is port 80. After modifying to another port, the browser address bar needs to enter: IP:xxxx (IP is the AP's IP address, xxxx is the port number).
Restart Device	The device will reboot after clicking Restart.
Update Firmware	To upgrade the device software version, click Browse to select the local version file, and click Update to upgrade the device. Do not power off during the upgrade. Note: When "Restore factory settings after upgrade" is set to "Yes," the AP will revert to factory settings after the upgrade. Restore Factory Settings Clicking will restart the device and clear all configurations.
Restore Factory Settings	Click "Factory Reset" and the device will restart and clear all configurations

3.2.1.7.2 Logs

Click the [Logs] menu, as shown below:

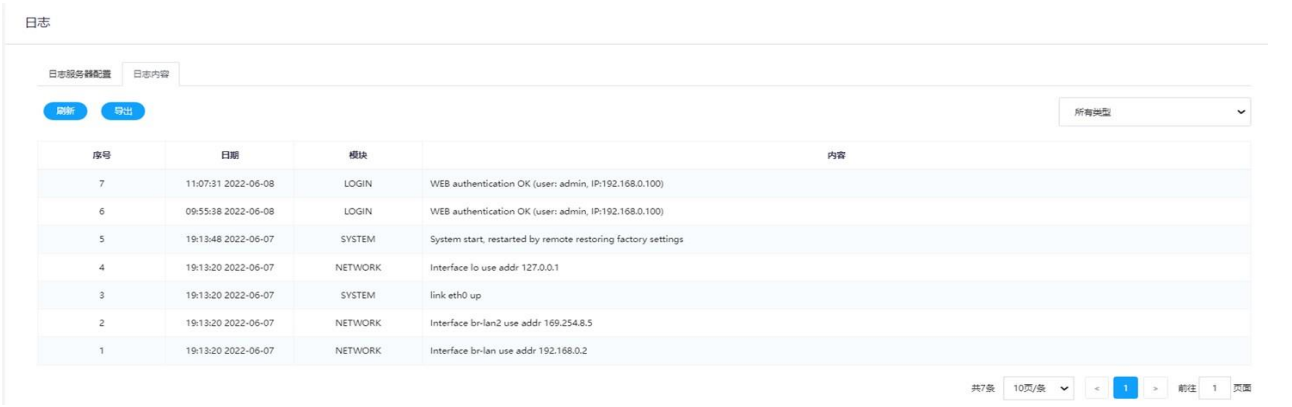


Function Description: [Logs] are divided into log server configuration and log content.

This page can configure the external log server address and port.

Log Content Displays the event log of the device, as shown below.

Configuration item	Description
Log server	Enable or disable the function of connecting to an external log server.
IP Address	The IP address of the log server. Logical link connectivity is required. Up to 3 log servers can be configured.
Port Number	The port number of the log server, used for receiving logs. Up to 3 log servers can be configured.



Detailed description of log types is as follows:

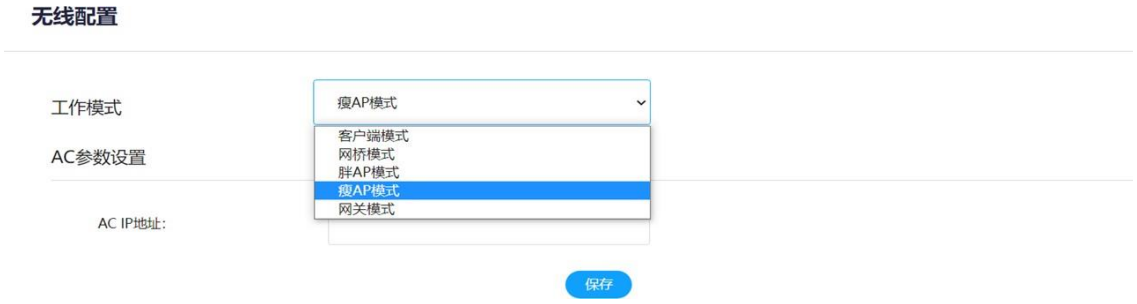
Log type	Description
All Types	Displays all types, default selection.
WLAN	Displays the log content of the wireless module, including terminal association logs, disassociation logs, PSK authentication, etc. Logs
SYSTEM	Displays device startup logs and port status logs.
CAPWAP	Displays CAPWAP tunnel status logs for thin APs.
DHCP	Displays DHCP assigned address logs and terminal RELEAS IP logs
LOGIN	Display web login logs and SSH login logs
NETWORK	Displays a log of the port's use of an IP address

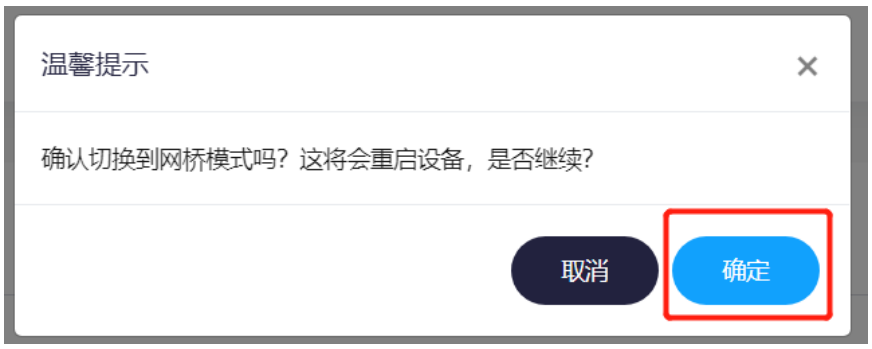
3.3 Switching the AP to Bridge Mode

Bridge mode is used to connect wired terminals. The uplink is associated with a wireless SSID, and the downlink wireless network can release an SSID for wireless terminals to connect. It enables wired terminals to achieve wireless connection. In bridge mode, wireless and wired devices are in the same Layer 2 network, and port mapping is not supported.

After waiting for the AP to reboot, log in to the Web page again to see that the AP has switched to bridge mode.

By default, the AP is in client mode when shipped. You can switch the AP to bridge mode via the [Wireless Configuration] page. Path: [Wireless Configuration] > Click the dropdown, select "Bridge Mode," and confirm in the pop-up dialog by selecting "OK."





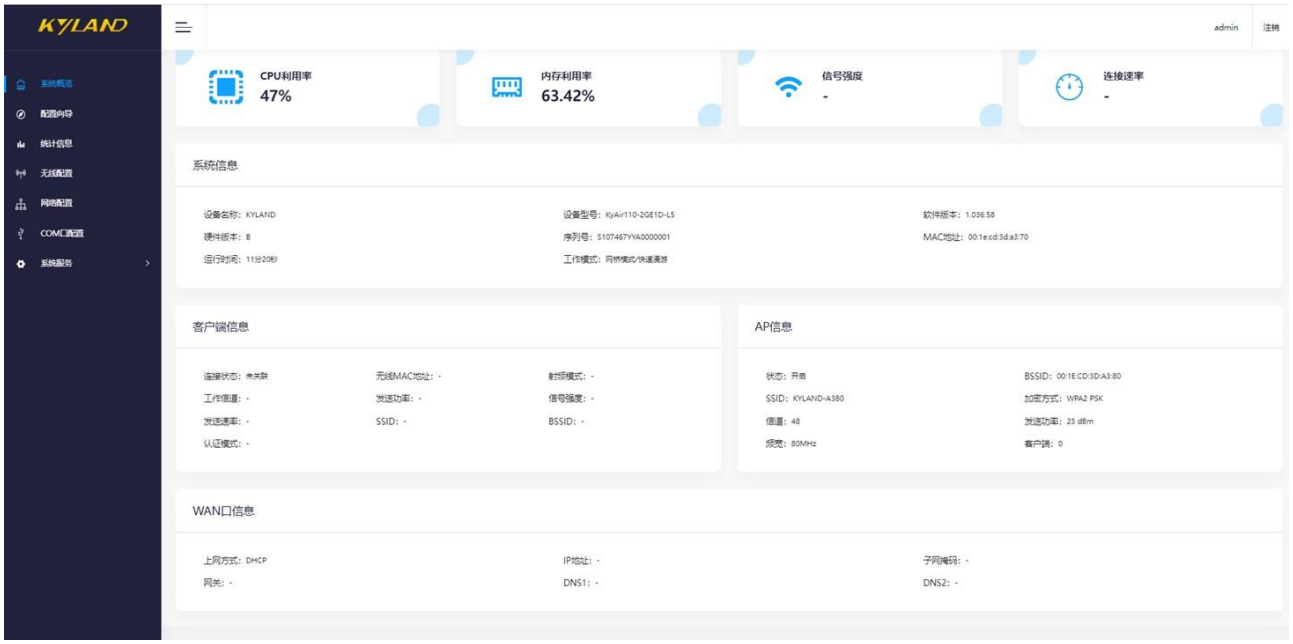
After waiting for the AP to reboot, log in to the Web page again to see that the AP has switched to bridge mode.

3.3.1 Main Menu Navigation

3.3.1.1 System Overview

After successful login, the system homepage is the [Overview] menu.

The bridge mode system overview page is shown below:



The Bridge mode system overview page is shown below:

Serial Number	Name	Description
1	Real-Time Status	Displays current CPU usage, memory usage, signal strength of the connected SSID, and connection rate.
2	System Information	Displays device model, software version, hardware version, serial number, MAC address, management address, uptime, and current operating mode.
3	Client Information	Displays connection status, associated SSID, radio frequency, channel, encryption, and authentication mode information. This is the uplink network of the bridge.
4	AP Information	Displays wireless status, BSSID, SSID, encryption type, channel, power, bandwidth, and client count. This is the downlink wireless network of the bridge.
5	WAN Port Information	Displays current WAN port information, including access method, IP address, subnet mask, gateway, and DNS.

3.3.1.2 Configuration Wizard

Clicking the [Configuration Wizard] button navigates to the configuration wizard page, which helps you easily complete basic network settings.

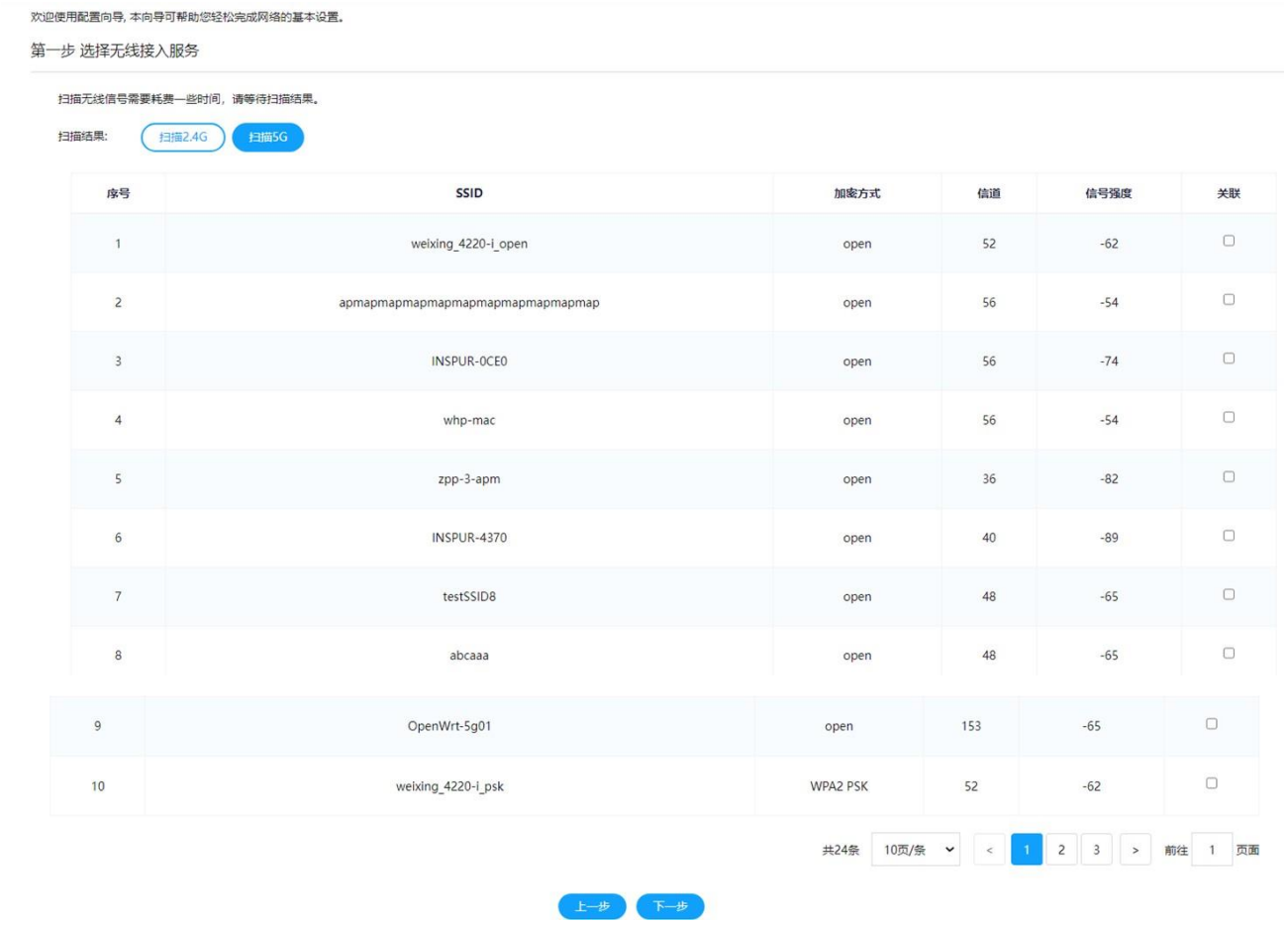
Current working mode

Displays the current operating mode. Click to continue.

Note: To modify the operating mode, please do so on the Wireless Configuration page.

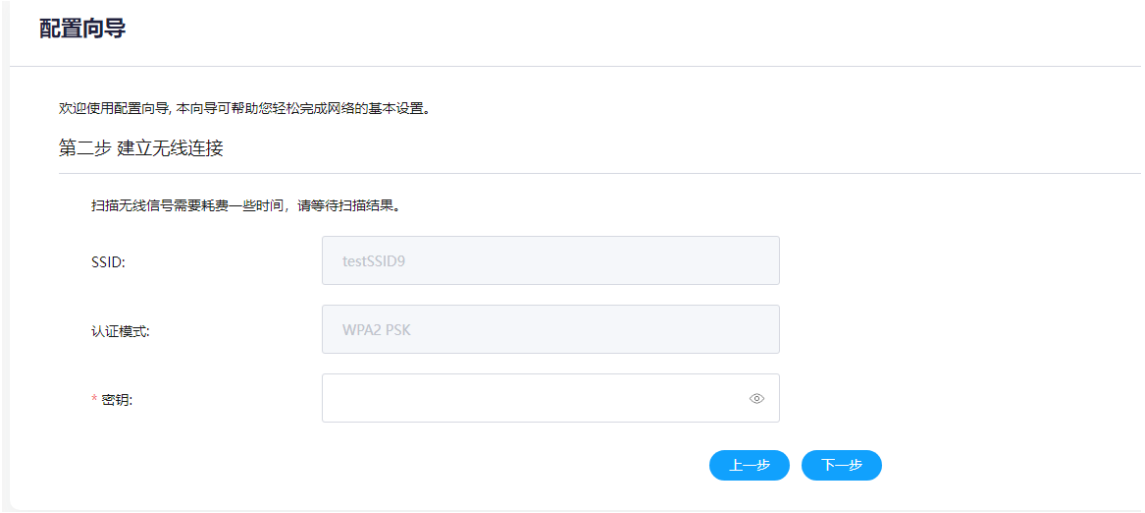
Step 1: Select Wireless Access Service

You can choose 2.4G or 5G access. Take 5G access as an example: click Scan 5G and wait for the scan to complete. A list of 5G scan results will appear. Select the association option next to the corresponding SSID and click to continue.



Step 2: Establish Wireless Connection

Enter the password of the SSID to connect to. After configuration is complete, click to continue.



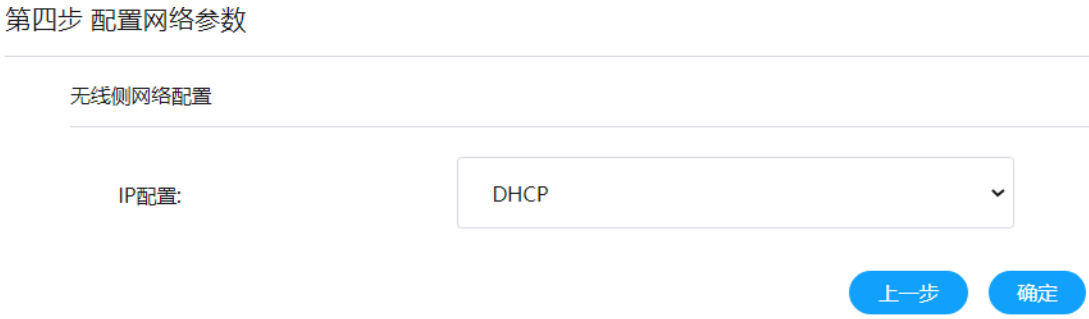
Step 3: Establish Wireless Connection (AP Mode)

Configure SSID-related parameters for wireless terminal connections, as shown below:

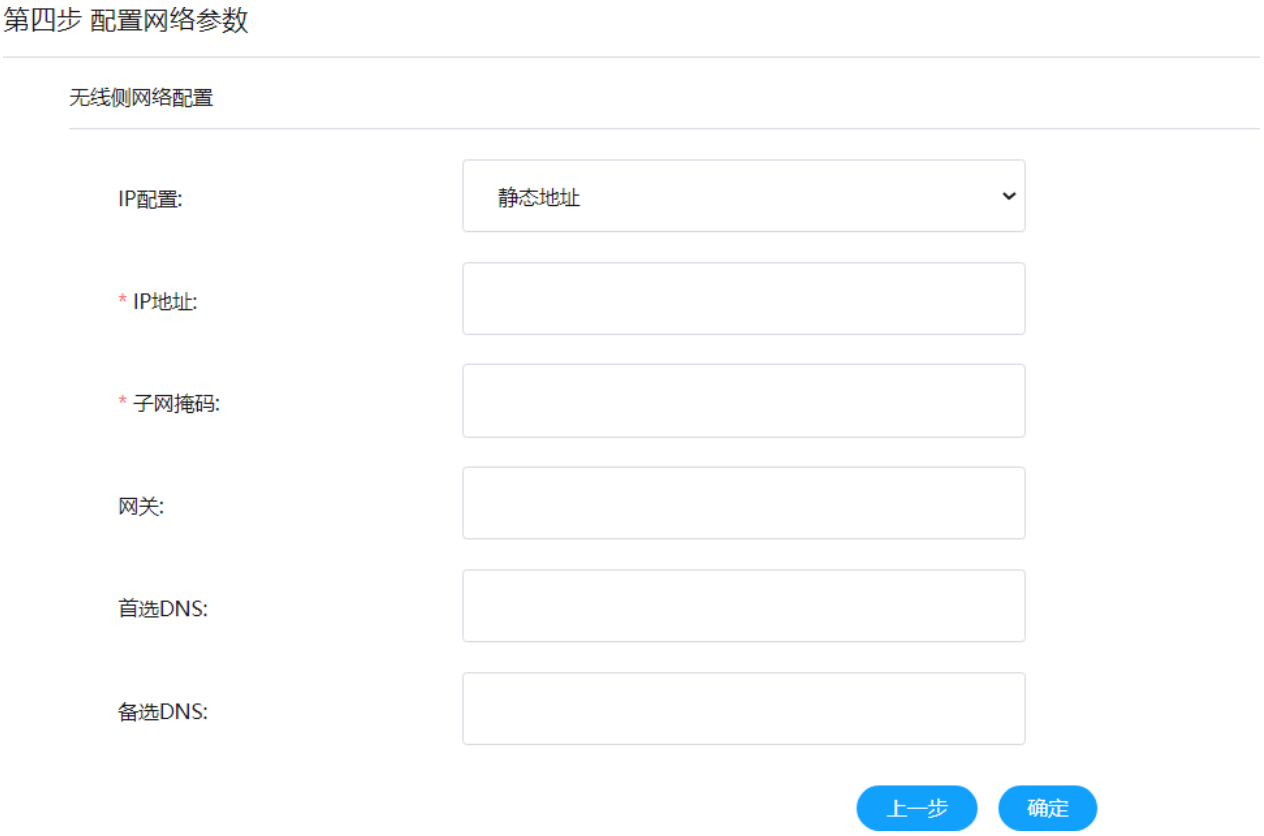
Step 4: Configure Network Parameters

Configure the IP address for the wireless side. The IP can be set as DHCP or a static address.

DHCP retrieves an IP address from the DHCP server, as shown below.



A static address requires manual configuration of the IP address, subnet mask, gateway, and DNS, as shown below.



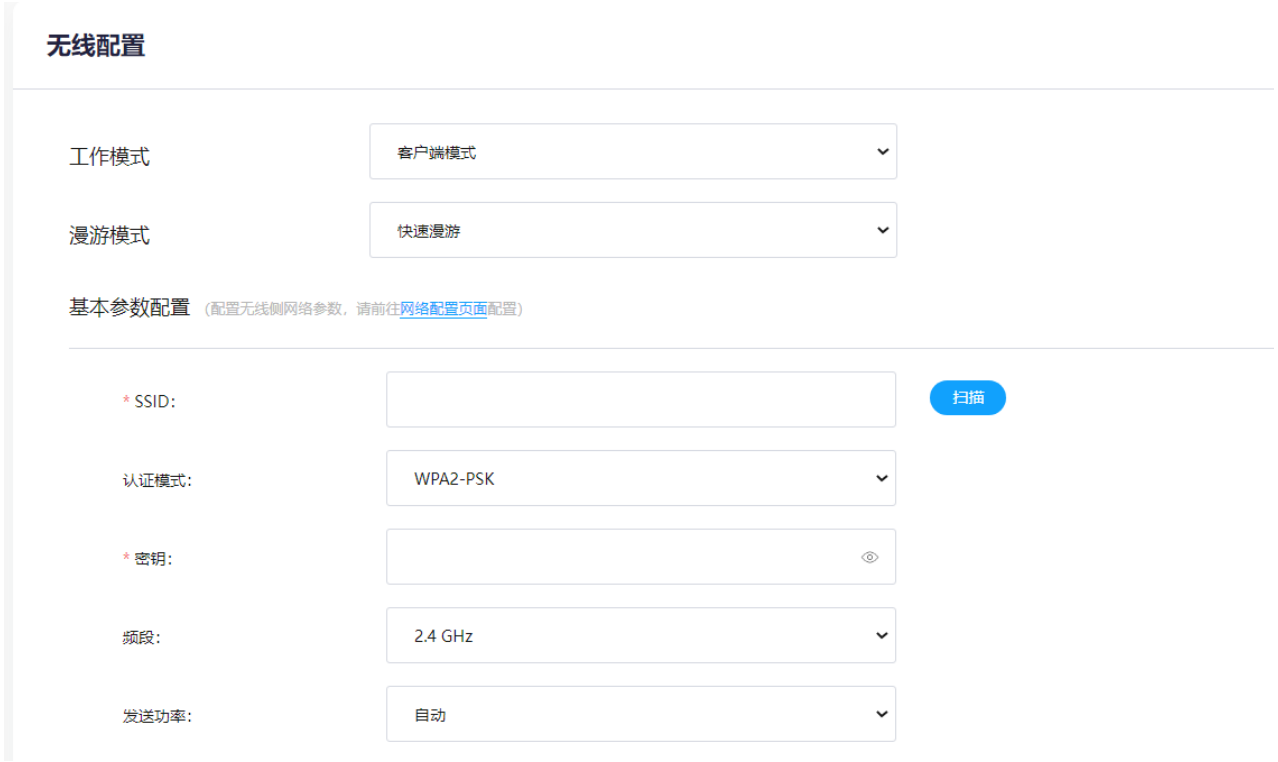
3.3.1.3 Statistics

Click the [Statistics] menu, as shown below:

Function Description:Displays the wireless client list information.

3.3.1.4 Wireless Configuration

Click the [Wireless Configuration] menu, as shown below:



Function Description:

The Wireless Configuration is divided into Operating Mode, Basic Parameter Configuration, Roaming Parameter Configuration, and Wired Side Operating Mode.
Operating Mode:Allows switching the AP’s mode, supporting Client Mode, Fat AP Mode, Thin AP Mode, Bridge Mode, and Gateway Mode. After switching the operating mode, the AP will reboot.
Basic Parameter Configuration:Configures the SSID, authentication mode, key, and frequency band for the bridge uplink.
Detailed Explanation of Basic Parameter Configuration:

Parameter Name	Description
SSID	SSID of the uplink wireless network. You can manually enter the SSID or select it after scanning
Authentication Mode	The authentication encryption mode of the uplink wireless network, which can be manually selected or automatically selected after scanning the SSID.
Key	The access password for the uplink wireless network, which needs to be manually entered.
Frequency Band	Choose between 2.4G or 5G based on the frequency band of the uplink network SSID.

Roaming Parameter Configuration:
Configures the auto-roaming switch, scan channels (based on the radio frequency selected in the basic parameters), channel scan period, scan interval, trigger scan RSSI, keep-alive interval, maximum keep-alive count, and roaming trigger threshold.
Detailed Explanation of Roaming Parameters:

Parameter Name	Value Range (Unit)	Description
Automatic roaming switch	On/Off	Enables or disables auto-roaming. When enabled, roaming parameters cannot be configured, and system-optimized parameters are used.
2.4G Scan Channel	See 2.4G optional channels	Duration of scanning for each channel; configure based on the coverage channels of the uplink network.
5G Scan Channel	See 5G optional channels	Duration of scanning for each channel; configure based on the coverage channels of the uplink network.
Channel Scan Period	100～5000 ms	Duration of scanning for radio frequency channels. Can be modified when auto-roaming is disabled.
Scan Interval	10～300 seconds	Interval at which the radio frequency scans automatically. Default is 120s. Can be modified when auto-roaming is disabled.
RssiTrigger Scan RSSI	20-80, default 20	RSSI value that triggers scanning. Can be modified when auto-roaming is disabled.
Keep-Alive Interval	100-1000 in milliseconds. Default is 200	The time interval at which the AP sends a keep-alive message to the upstream device can be modified when auto-roaming is turned off. can be modified when auto roaming is turned off.
Maximum Keep-Alive	Count 3-10, default 5	Maximum count of keep-alive packet timeouts. After a successful link connection, if the keep-alive packet timeout reaches the maximum count, the link is considered down. Can be modified when auto-roaming is disabled.
Roaming Trigger Threshold	15-50, default 25	Threshold to trigger roaming. Can be modified when auto-roaming is disabled.

Wired Side Operating Mode:The wired port operating mode can be configured as NAT, Clone, or Proxy.Detailed Explanation of Wired Side Operating Mode:

Serial number	Name	Description
1	NAT	Wireless and wired operate in Layer 3 NAT forwarding. Default is NAT.
2	Clone	When Clone is selected, the wireless port clones the MAC of the terminal under LAN1. Only LAN1 supports cloning. After selecting Clone, LAN1 can only connect to a single terminal.
3	Proxy	Wireless and wired operate in Layer 2 forwarding. Proxy mode can be used when the associated AP does not support WDS mode.

3.3.1.4.1 Fast Roaming

Click the [Wireless Configuration] menu, as shown below:

Function Description:

The Wireless Configuration is divided into Operating Mode, Basic Parameter Configuration, and Roaming Parameter Configuration.

Operating Mode: Allows switching the AP’s mode, supporting Fat AP Mode, Thin AP Mode, Bridge Mode, and Gateway Mode. After switching the operating mode, the AP will reboot.

Basic Parameter Configuration:Configures the uplink SSID, authentication mode, key, and frequency band.Detailed Explanation of Basic Parameter Configuration:

Parameter Name	Parameter Name
SSID	The SSID of the uplink wireless network, which can be manually entered or selected after scanning.
Authentication Mode	The authentication encryption mode of the uplink wireless network, which can be manually selected or automatically selected after scanning the SSID.
Key	The access password for the uplink wireless network, which needs to be manually entered.
Frequency Band	Choose between 2.4G or 5G based on the frequency band of the uplink network SSID.

Roaming Parameter Configuration:Configures the auto-roaming switch, scan channels (based on the radio frequency selected in the basic parameters), channel scan period, scan interval, trigger scan RSSI, keep-alive interval, maximum keep-alive count, and roaming trigger threshold.

Detailed Explanation of Roaming Parameters:

Parameter Name	Value range (unit label)	Description
Automatic roaming switch	On/Off	Enables or disables auto-roaming. When enabled, roaming parameters cannot be configured, and system-optimized parameters are used.
2.4G Scan Channel	See 2.4G optional channels	Duration of scanning for each channel; configure based on the coverage channels of the uplink network.
5G Scan Channel	See 5G optional channels	Duration of scanning for each channel; configure based on the coverage channels of the uplink network.
Channel Scan Period	100～5000 ms	Duration of scanning for radio frequency channels. Can be modified when auto-roaming is disabled.
Scan Interval	10～300 seconds	Interval at which the radio frequency scans automatically. Default is 120s. Can be modified when auto-roaming is disabled.

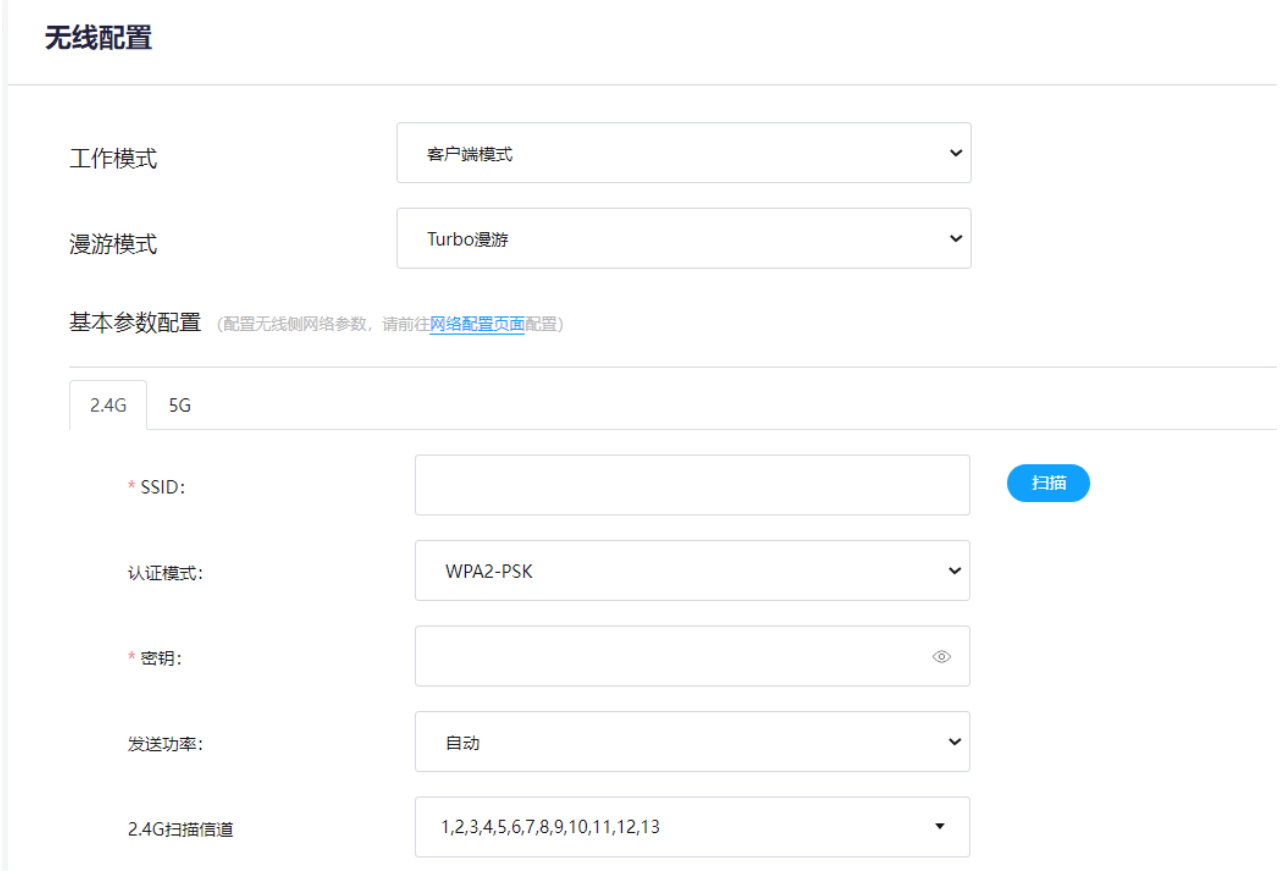
RssiTrigger Scan RSSI	20-80, default 20	RSSI value that triggers scanning. Can be modified when auto-roaming is disabled.
Keep-Alive Interval	100-1000 in milliseconds. Default is 200	The time interval at which the AP sends a keep-alive message to the upstream device can be modified when auto-roaming is turned off. can be modified when auto roaming is turned off.
Maximum Keep-Alive	Count 3-10, default 5	Maximum count of keep-alive packet timeouts. After a successful link connection, if the keep-alive packet timeout reaches the maximum count, the link is considered down. Can be modified when auto-roaming is disabled.
Roaming Trigger Threshold	15-50, default 25	Threshold to trigger roaming. Can be modified when auto-roaming is disabled.

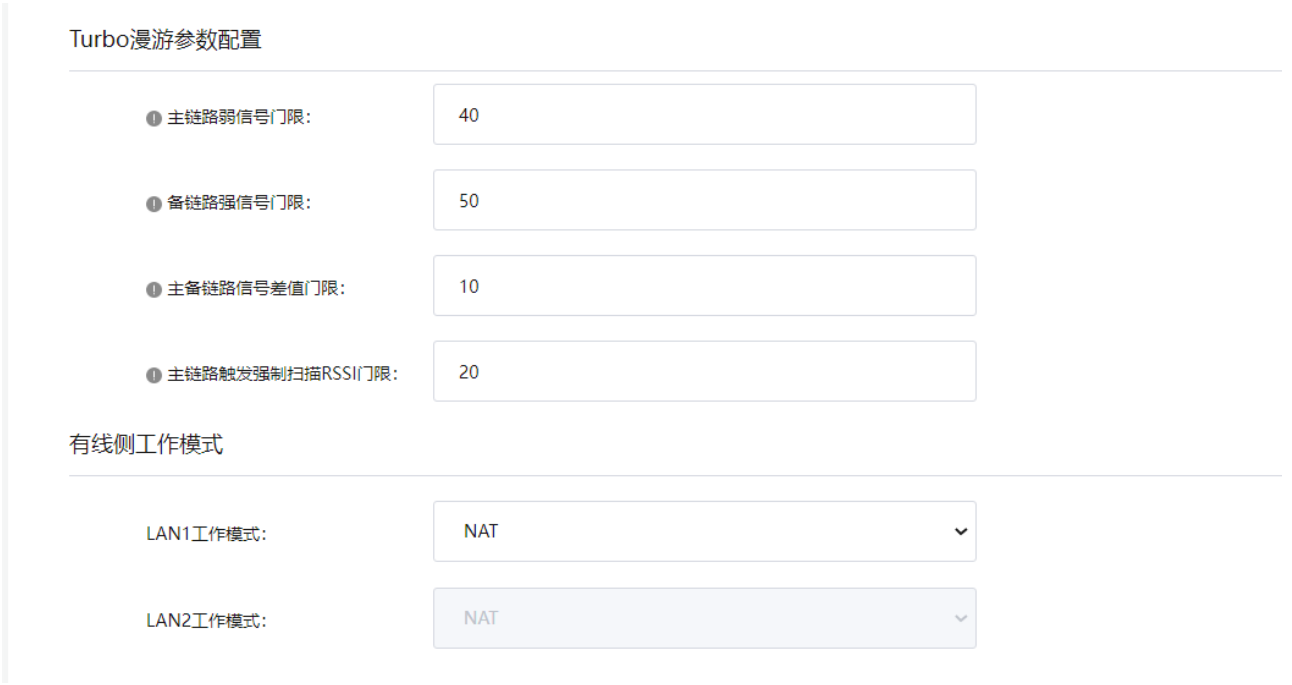
Wired Side Operating Mode:The wired port operating mode can be configured as NAT, Clone, or Proxy.
Detailed Explanation of Wired Side Operating Mode:

Serial Number	Name	Description
1	NAT	Wireless and wired operate in Layer 3 NAT forwarding. Default is NAT.
2	Clone	When Clone is selected, the wireless port clones the MAC of the terminal under LAN1. Only LAN1 supports cloning. After selecting Clone, LAN1 can only connect to a single terminal.
3	Proxy	Wireless and wired operate in Layer 2 forwarding. Proxy mode can be used when the associated AP does not support WDS mode.

3.3.1.4.2 Dual-Link Roaming

In the wireless configuration, select Turbo Roaming for configuration, as shown below:





Function Description: Turbo Roaming simultaneously connects to both 2.4G and 5G signals of the AP, distinguishing between primary and backup links. During movement, it switches between the primary and backup links. Configuration options include Bridge Parameter Configuration, Turbo Roaming Parameter Settings, and Wired Side Working Mode.

Bridge Parameter Configuration: Configures the bridge's uplink SSID, authentication mode, and key. Detailed parameter descriptions are as follows:

Parameter Name	Description
<2.4G>/<5G>	Configures 2.4G and 5G frequency bands to connect to the same or different SSIDs.
SSID	The uplink wireless network's SSID; can be manually entered or selected after scanning.
Authentication Mode	The authentication encryption mode for the uplink wireless network; can be manually selected or auto-selected after scanning the SSID.
Key	The access password for the uplink wireless network; must be manually entered.

Turbo Roaming Parameter Settings: Configures threshold parameters for primary and backup switching during Turbo Roaming. Detailed parameter descriptions are as follows:

Parameter Name	Description
Primary Link Weak Signal Threshold	When the primary link is weaker than the set value, triggers primary-backup link switching. Range: 10-40.
Backup Link Strong Signal Threshold	When the backup link is stronger than the set value, triggers primary-backup link switching. Range: 30-60.

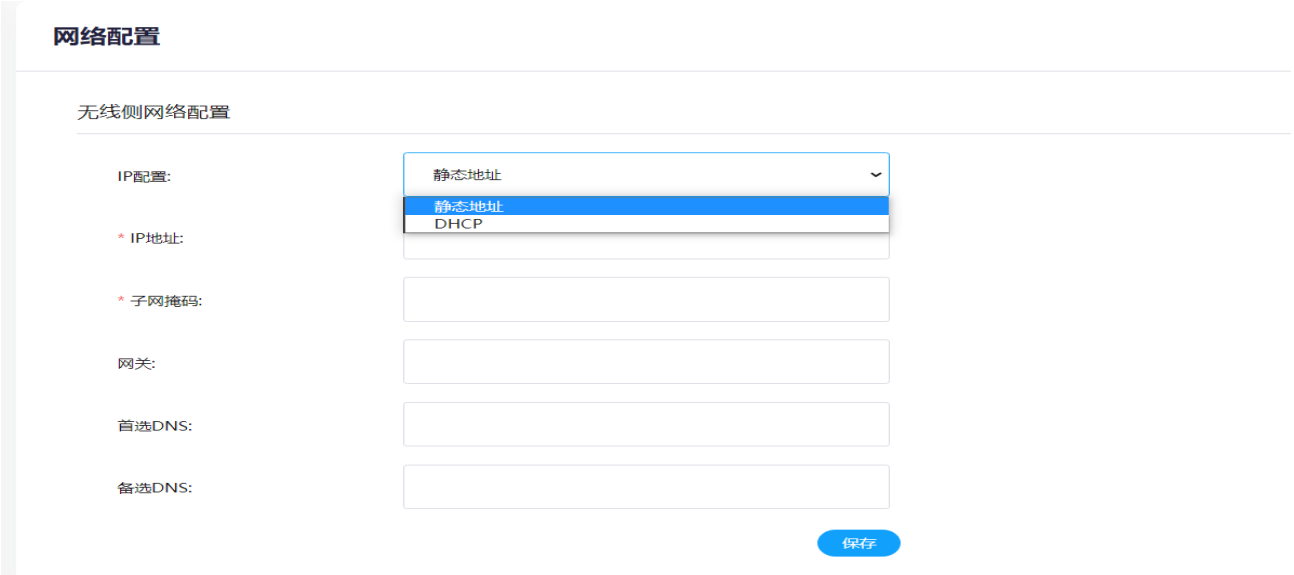
Primary-Backup Signal Difference Threshold	When the signal difference between the primary and backup links exceeds the set value, triggers primary-backup link switching. Range: 2-35.
Primary Link Triggered Forced Scan RSSI Threshold	When no backup link is available and the primary link signal is below the set value, the primary link initiates an SSID scan. Range: 10-40.
2.4G Scan Channel	The duration of scanning for each channel; configure based on the coverage channel of the uplink network.
5G Scan Channel	The duration of scanning for each channel; configure based on the coverage channel of the uplink network.

Wired Side Working Mode: Configures the working mode of the wired port as NAT, Clone, or Proxy. Detailed descriptions are as follows:

Serial Number	Name	Description
1	NAT	Wireless and wired perform Layer 3 NAT forwarding. Default is NAT.
2	Clone	When selected, the wireless port clones the MAC of the terminal under LAN1. Only LAN1 supports cloning, and it can only connect to a single terminal.
3	Proxy	Wireless and wired perform Layer 2 forwarding. Proxy mode can be used when the associated AP does not support WDS mode.

3.3.1.5 Network Configuration

Click the [Network Configuration] menu, as shown below:



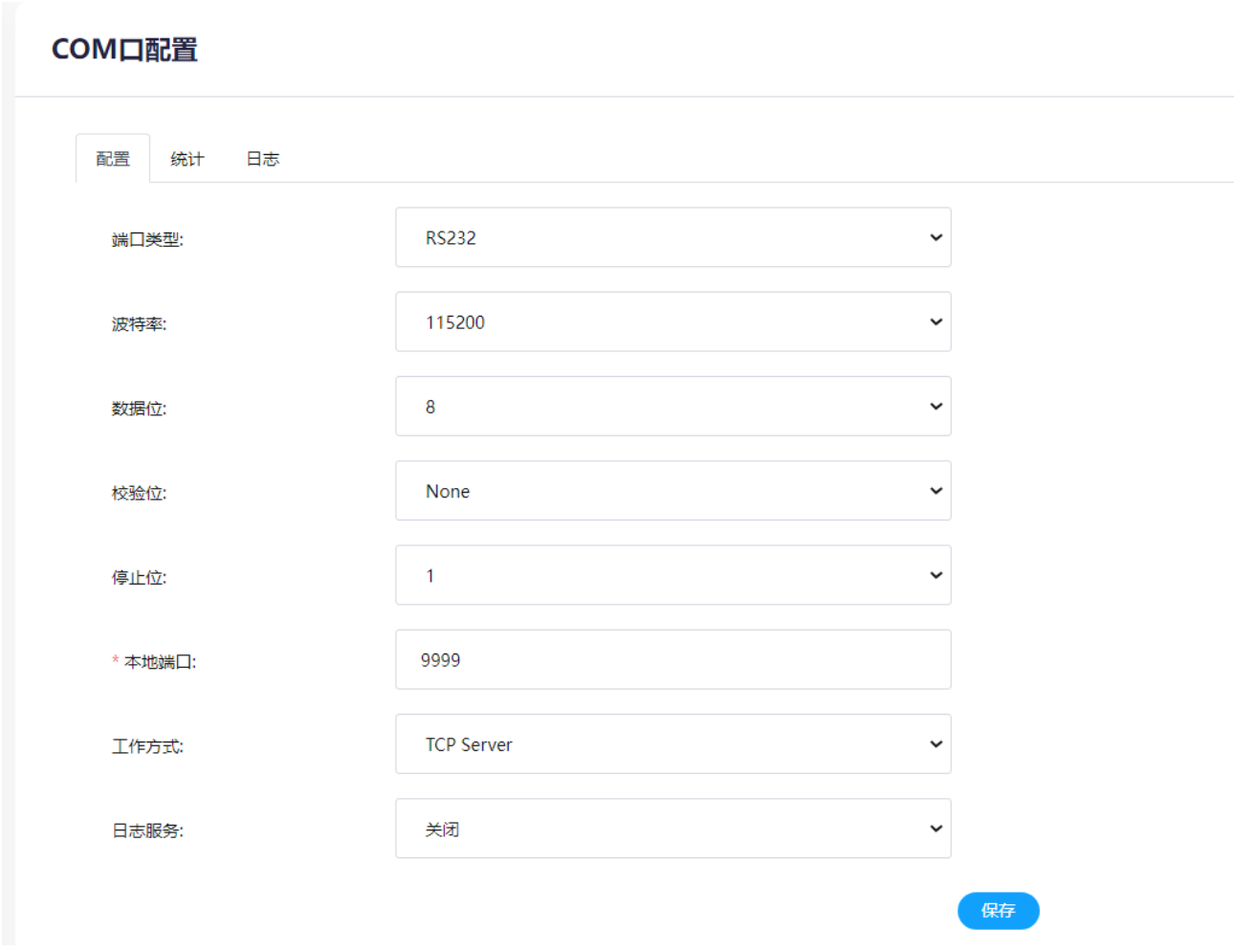
In bridge mode, only the IP address of the wireless side is configured.

Wireless Side Network Configuration: After associating with the uplink wireless network, the IP address can be set to obtain via DHCP or as a static address. Detailed parameter descriptions are as follows:

Parameter Name	Description
Internet Access Mode	Can be selected as DHCP or Static Address. When DHCP is selected, the IP address is automatically obtained from the DHCP server.
IP Address	Configurable when a static address is selected. Configures the static address of the wireless side of the bridge, matching the wireless network.
Subnet Mask	Configurable when a static address is selected. Configures the subnet mask of the wireless side of the bridge, matching the wireless network.
Gateway	Configurable when a static address is selected. Configures the gateway of the wireless side of the bridge, matching the wireless network.
Primary DNS	Configurable when a static address is selected. Configures the DNS of the wireless side of the bridge, matching the wireless network.
Secondary DNS	Configurable when a static address is selected. Configures the DNS of the wireless side of the bridge, matching the wireless network.

3.3.1.6 COM Port Configuration

Click the [COM Port Configuration] menu, as shown below:



Function Description:

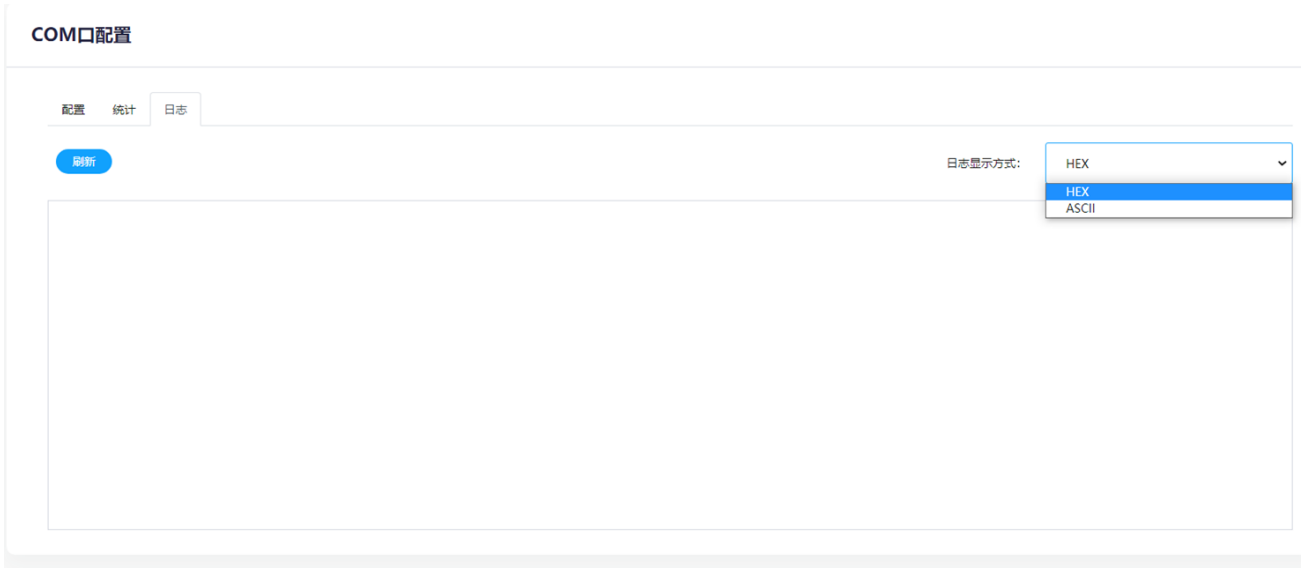
Through COM port configuration, serial devices can communicate with devices on the network side. COM port configuration includes <Configuration>, <Statistics>, and <Log>.

The <Configuration> tab allows the configuration of the serial port of the device. Detailed descriptions are as follows:

Parameter Name	Description
Port Type	Can select RS232 or RS485, depending on the actual scenario for RS232 or RS485 connection.
Baud Rate	Sets the baud rate of the serial port, which must match the terminal's baud rate.
Data Bits	Sets the data bits of the serial port, which must match the terminal's data bits.
Check Bits	Sets the check bits of the serial port, which must match the terminal's parity bits.
Stop Bits	Sets the stop bits of the serial port, which must match the terminal's stop bits.
Local Port	The TCP or UDP port of the device's local network side.
Remote Port	Configures the port of the TCP or UDP server in the network. Can be configured when the mode is UDP Client or TCP Client.
Working Mode	Can be configured as UDP Client, TCP Client, UDP Server, or TCP Server.
Remote Server Address	Configures the IP address of the TCP or UDP server in the network. Can be configured when the mode is UDP Client or TCP Client.
Log Service	Can be enabled or disabled. When enabled, logs can be viewed in the <Log> tab.

The <Statistics> tab displays the number of bytes sent and received, as shown below.

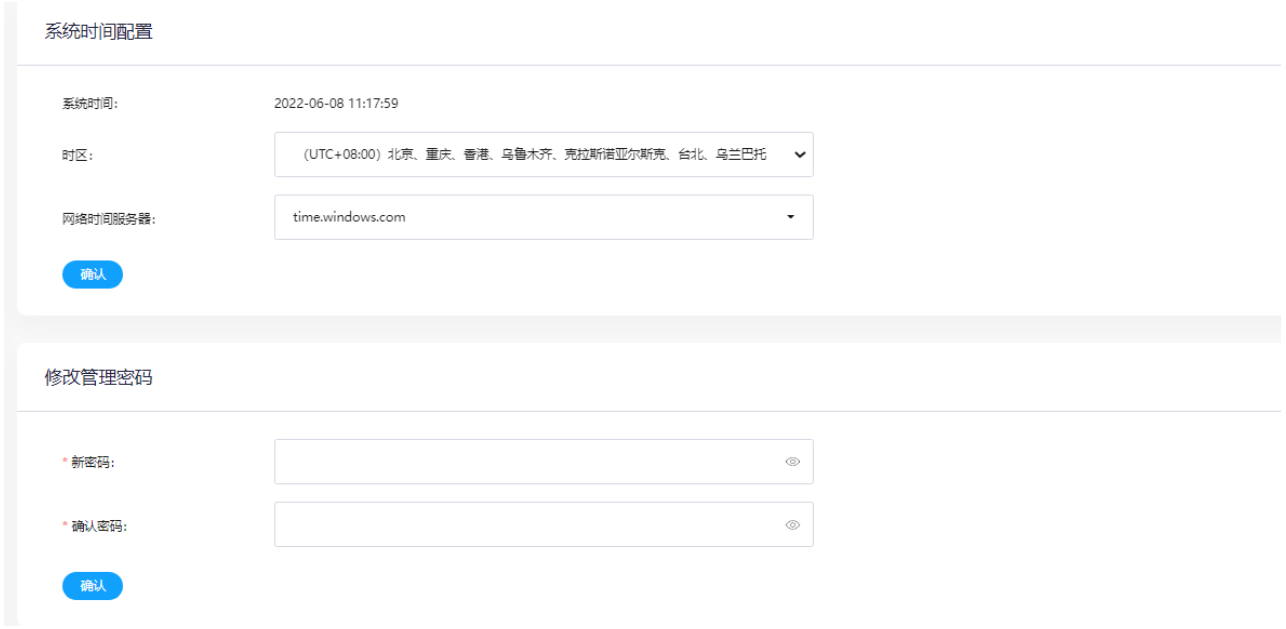
The <Log> tab displays the contents of serial port transmission when log service is enabled. Log display modes can be selected as HEX or ASCII, as shown below.

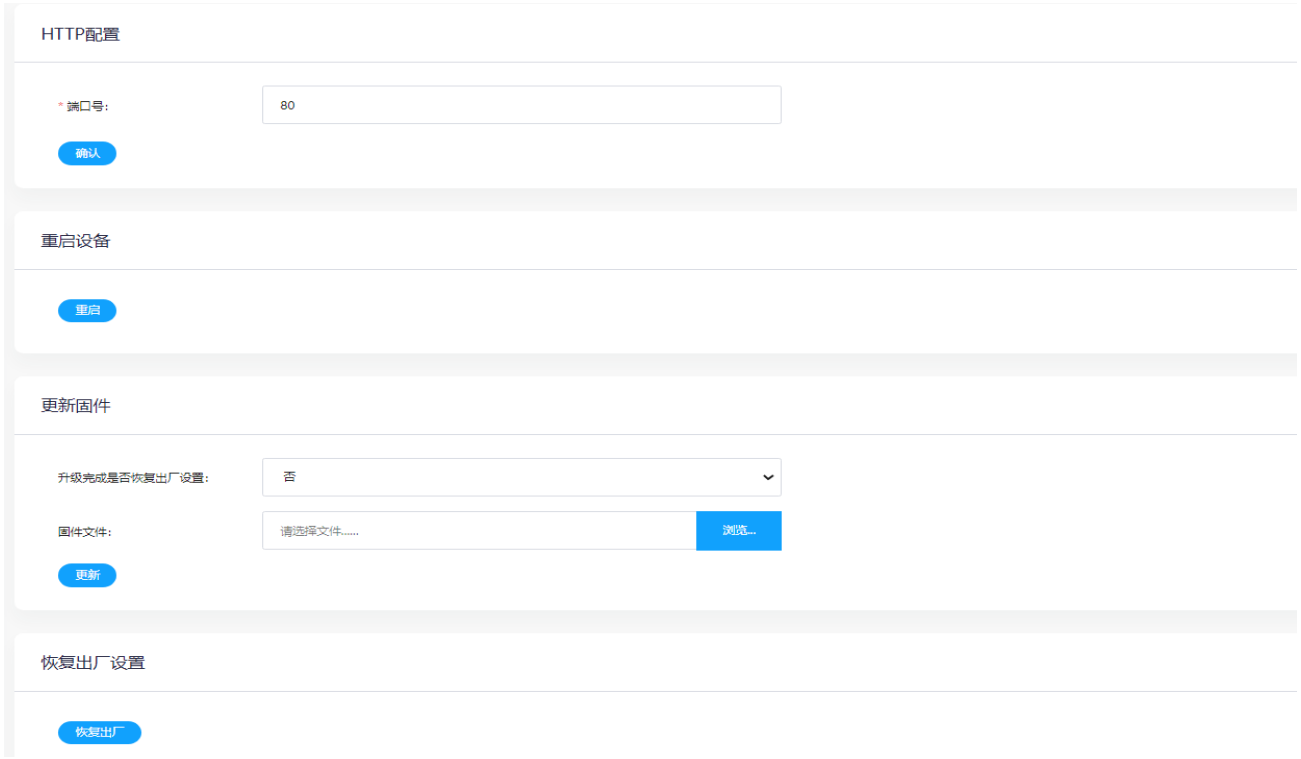


3.3.1.7 System Services

3.3.1.7.1 Services

Click the [Services] menu, as shown below:



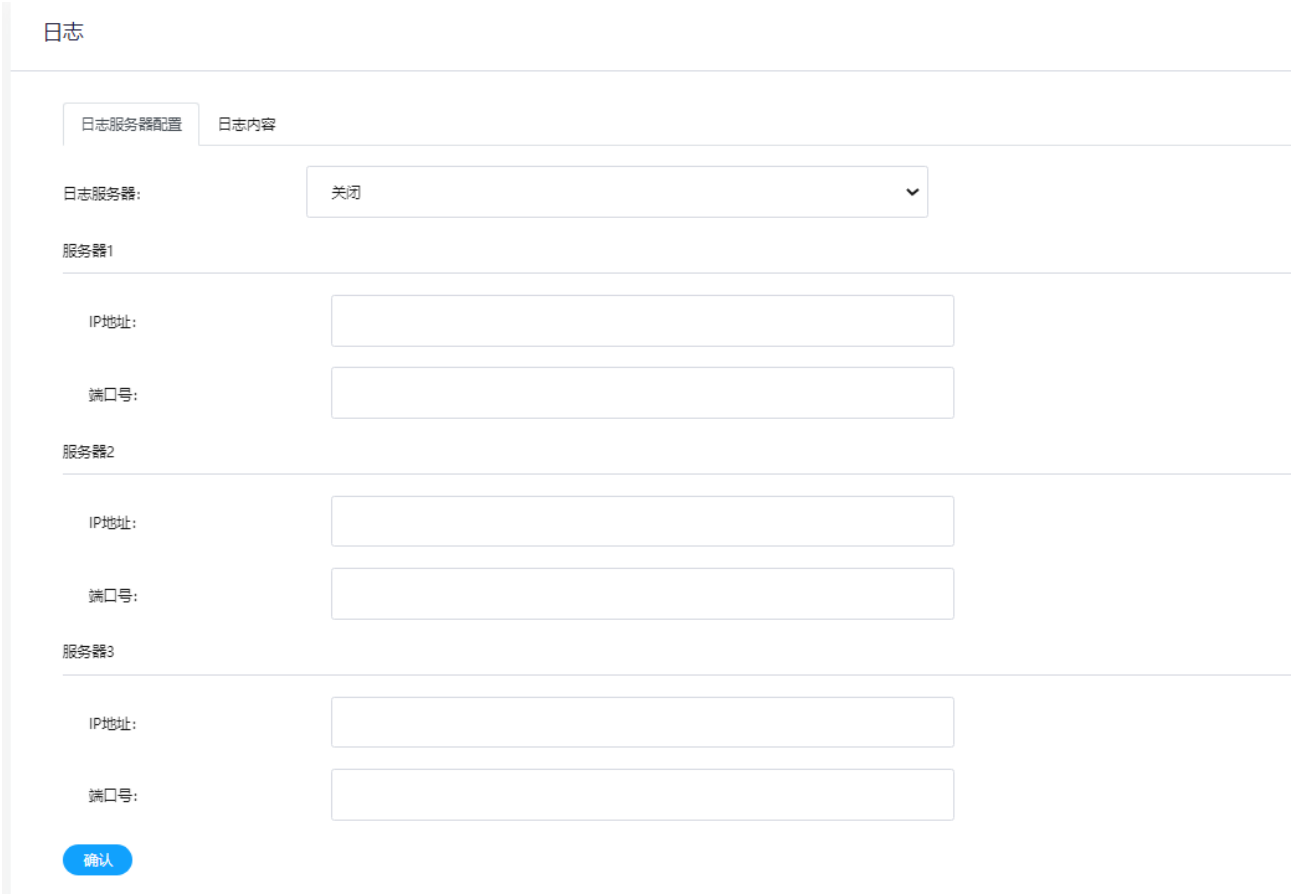


Function Description: This page covers system functions, including system time configuration, management password modification, HTTP port configuration, device reboot, firmware update, and factory reset. Detailed descriptions are as follows:

Configuration Item	Description
System Time Configuration	Configures the time zone and network time server. Synchronizes system time when the network is accessible.
Modify Admin Password	Modifies the password used to log in to the web page based on project requirements.
HTTP Configuration	Configures the port for accessing the web page of the device. Default is port 80. To log in after changing, enter IP:xxxx (where xxxx is the new port).
Reboot Device	Click to reboot the device.
Update Firmware	Updates the device software version. Select the local version file via <Browse>, then click <Update> to start the upgrade. Do not power off during the process. If “Restore to Factory Settings After Update” is selected, the AP will be reset to factory settings after the upgrade. Note: If Restore factory Settings after Upgrade is set to Yes, the AP will be restored to factory Settings after upgrade.
Restore Factory Settings	Click <Restore Factory>, the device will reboot and clear all configurations.

3.3.1.7.2 Logs

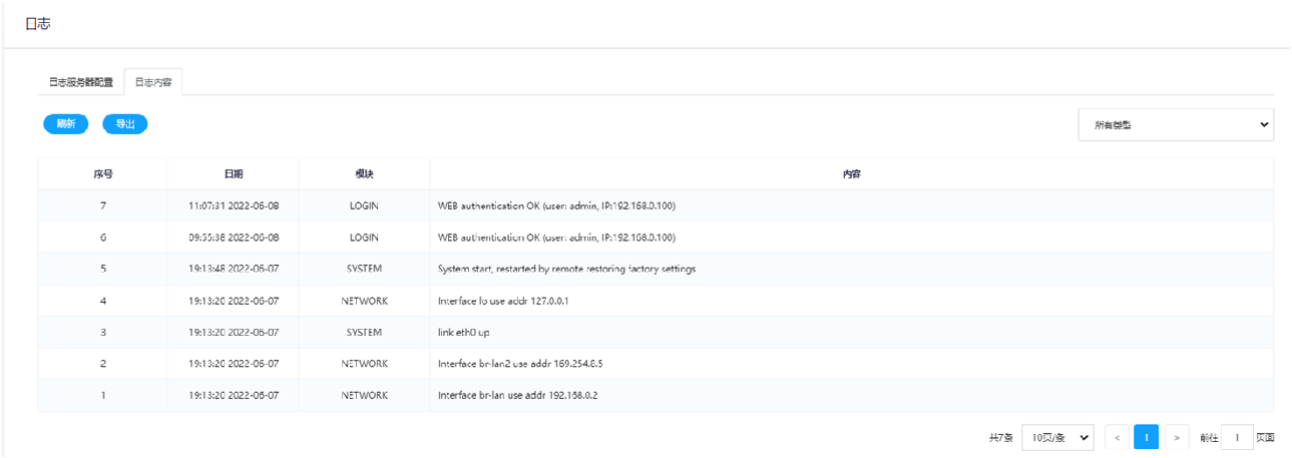
Click the [Logs] menu, as shown below:



Function Description: The [Logs] page includes Log Server Configuration and Log Content. This page allows configuration of external log server addresses and ports. Detailed descriptions are as follows:

Configuration Item	Description
Log Server	Enables or disables the connection to external log servers.
IP Address	The IP address of the log server. Up to three log servers can be configured.
Port Number	The port number for receiving logs on the log server. Up to three log servers can be configured.

The log content displays the event logs of the device, as shown below



The log types are described in detail below:

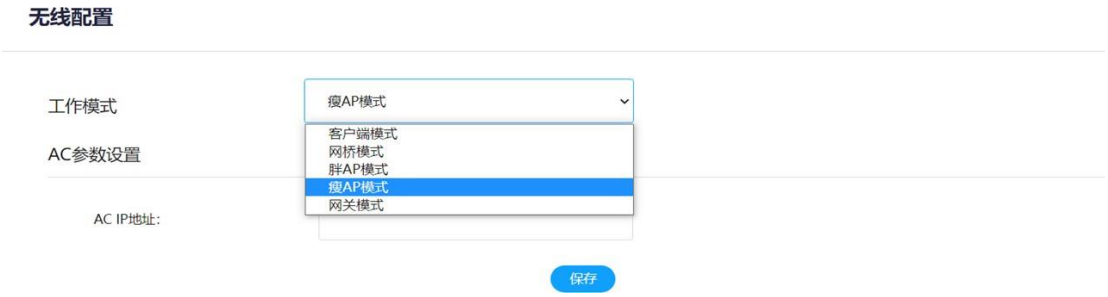
Log Type	Description
All Types	Displays all log types. Default selection.
WLAN	Displays logs related to the wireless module, such as terminal association, disassociation, and PSK authentication.
SYSTEM	Displays device startup logs and port status logs.
CAPWAP	Displays logs related to the CAPWAP tunnel status of thin APs.
DHCP	Displays logs of DHCP address allocation and terminal IP release.
LOGIN	Displays logs of web and SSH logins.
NETWORK	Displays logs of IP address usage on port.

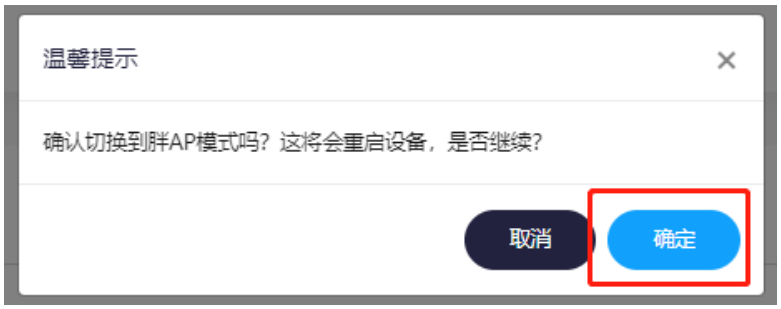
3.4 Switching the AP to Fat AP Mode

Fat AP mode is used to transmit wireless signals as a wireless access point for wireless terminals to connect to. This mode does not support NAT (to use NAT, you can switch the AP to gateway mode)

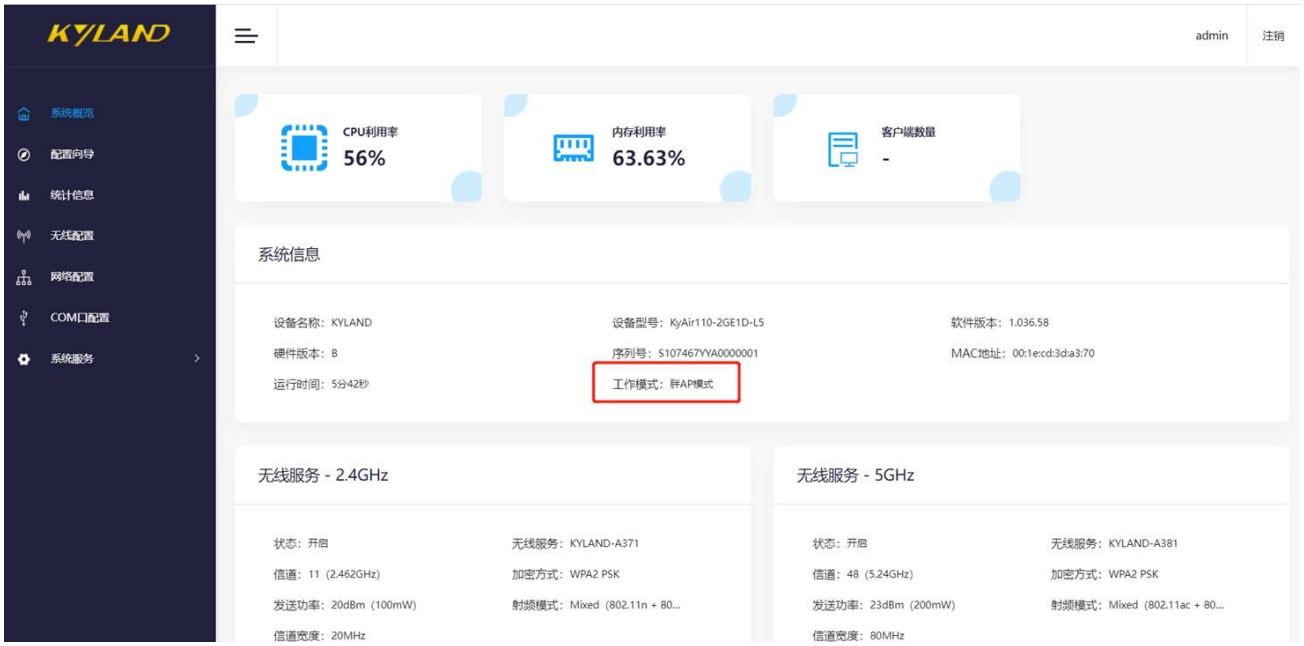
The default AP mode is client mode. You can switch the AP mode to fat mode on the "Wireless Configuration" page.

Path: 【Wireless Configuration】> Click the < Working Mode > drop-down box, select "Fat AP mode", and select "OK" in the pop-up dialog box.





After waiting for the AP to restart, log back into the web page. You will see that the AP has switched to Fat AP mode.

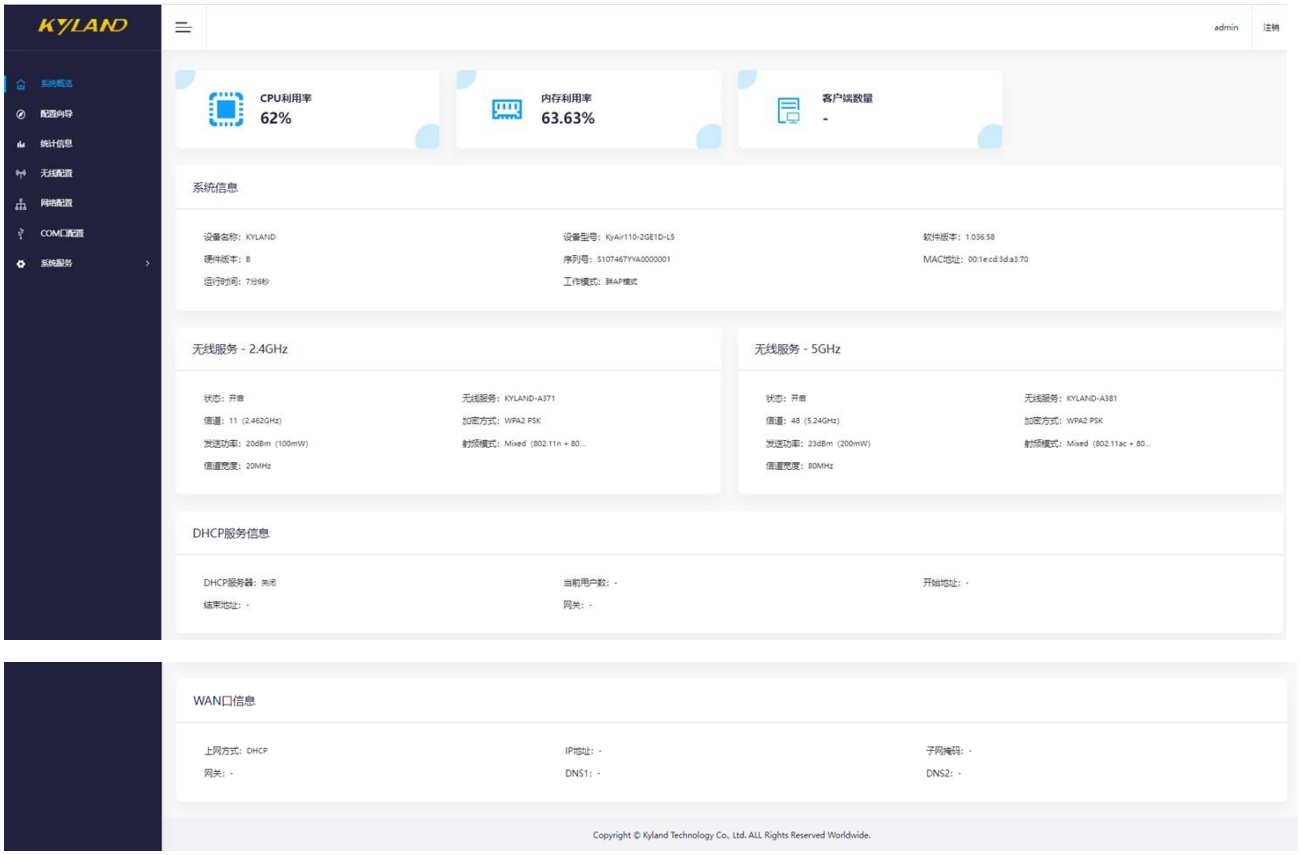


3.4.1 Main Menu Navigation

3.4.1.1 System Overview

The system homepage after a successful login is the [Overview] menu.

The Fat AP system overview page is shown below:



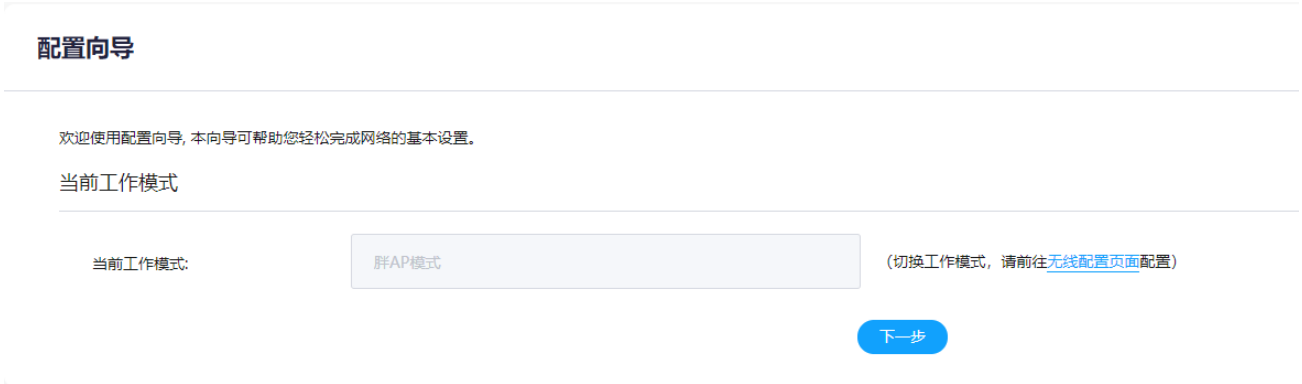
Fat AP Status Information Description

Serial Number	Name	Description
1	Real-Time Status	Displays the current CPU usage, memory usage, and number of clients.
2	System information	Displays information such as device model, software version, hardware version, serial number, MAC address, runtime, and operating mode.
3	Wireless Service	Displays the current wireless status for 2.4G and 5G, including RF status, channel, SSID name, encryption method, and wireless mode.
4	DHCP Service Information	Shows the status of the DHCP server, the current number of users, start/end addresses, and gateway information.
5	WAN Port Information	Displays current wired port information, including internet access method, IP address, subnet mask, gateway, and DNS information.

3.4.1.2 Configuration Wizard

Click the [Configuration Wizard] button to enter the configuration wizard page. This wizard helps you easily complete the basic network setup.

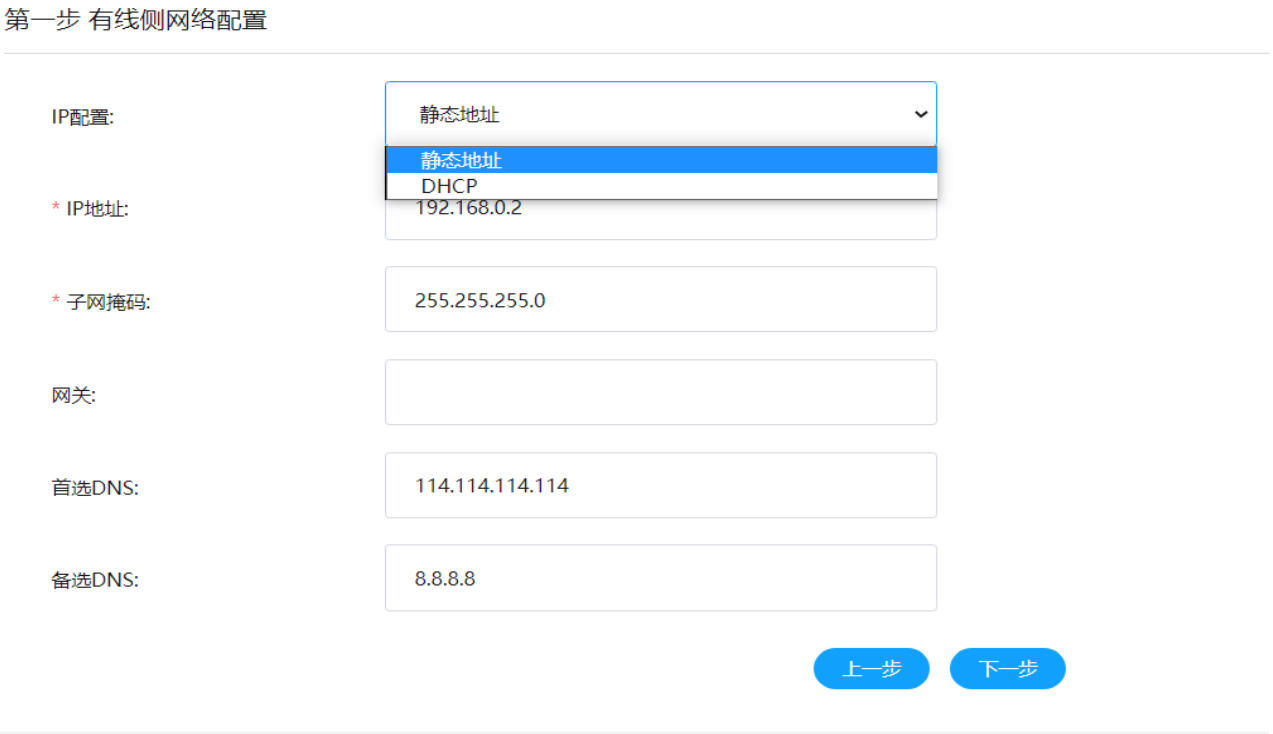
Current Working Mode



Displays the current working mode. Click to continue.

Note: To modify the working mode, please adjust it on the Wireless Configuration page.

Step 1: Wired Network Configuration



Configure the uplink network of the wired port. The internet access method can be selected as a static address or DHCP.

- DHCP: After selecting DHCP, the AP can automatically obtain an IP address assigned by the DHCP server in the wired network. The AP's IP address needs to be checked in the DHCP server's allocation records.
- Static Address: If selecting a static address, the device's IP address, subnet mask, gateway, DNS, etc., must be manually configured.

After configuration, click to continue.

Note: In Gateway mode, this page will include a "LAN Port Configuration" module to configure the terminal's DHCP address pool, as shown below:

Step2: Wireless Service Configuration

Configure the wireless service for the 2.4G and 5G Radios in Fat AP mode. In the configuration wizard, you can configure only one SSID for each 2.4G and 5G Radio. After configuring the wireless service, click Save, as shown below:

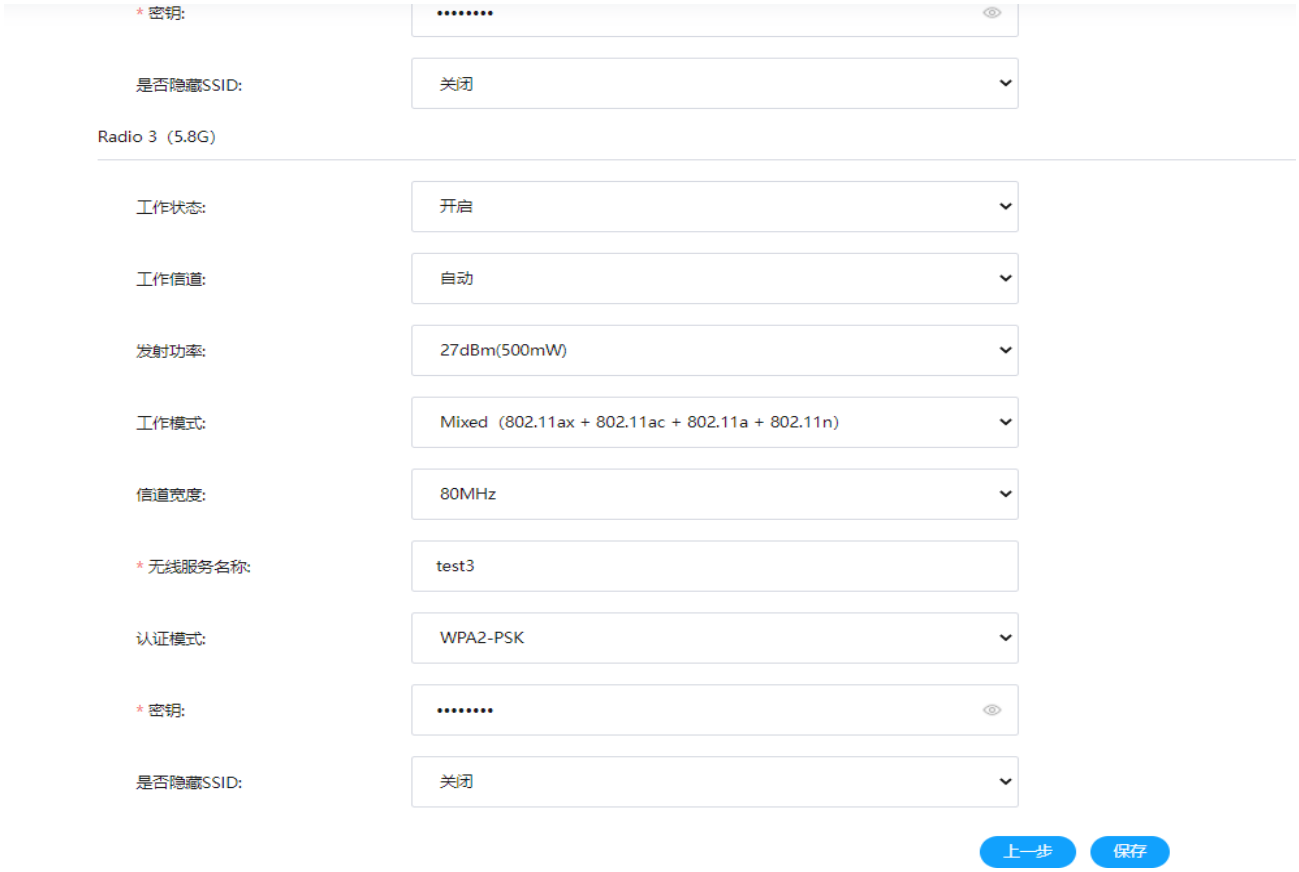
配置向导

欢迎使用配置向导，本向导可帮助您轻松完成网络的基本设置。

第二步 配置无线服务

Radio 1（2.4G）

工作状态:	开启
工作信道:	自动
发射功率:	27dBm(500mW)
工作模式:	Mixed（802.11ax + 802.11n + 802.11g）
信道宽度:	20MHz
* 无线服务名称:	test
认证模式:	WPA2-PSK
* 密钥:	66666666
是否隐藏SSID:	关闭



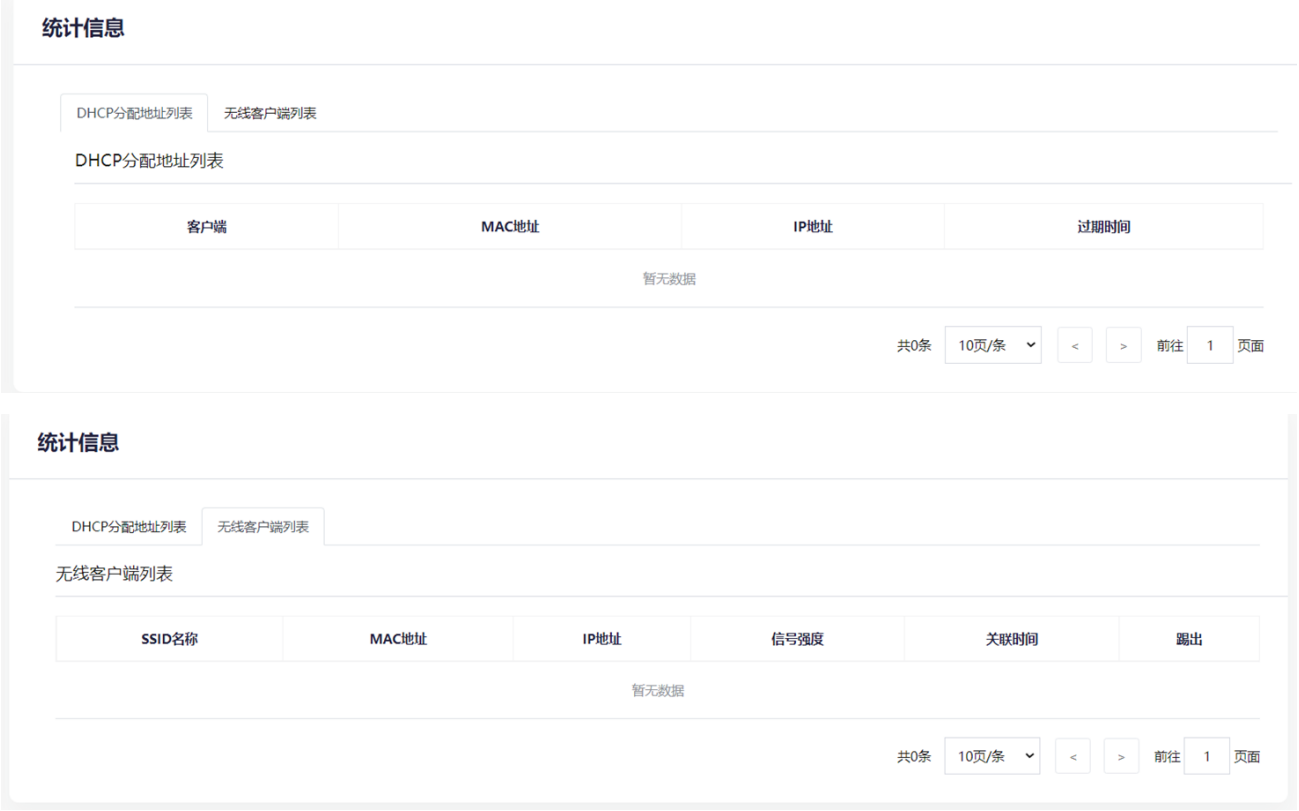
Detailed Parameter Table

Parameter Name	Description
Working Status	RF switch, can be enabled or disabled.
Working Channel	Select the working channel for 2.4G or 5G, default is automatic.
Transmit Power	Select the transmit power of the RF; the greater the power, the stronger the signal.
Working Mode	Select the wireless RF mode. Generally, choose 11ng for 2.4G and 11ac for 5G.
Channel Width	Width of a single channel. Generally, use 20MHz for 2.4G and 80MHz for 5G.
Wireless Service Name	The wireless name searched by the terminal, i.e., SSID.
Authentication Mode	Authentication mode for wireless access, can choose Open, WPA-PAK, WPA2-PSK, WPA/WPA2-PSK.
Key	Configure the wireless key; at least 8 characters, using numbers or letters.
Hide SSID	Option to enable or disable: Enable: SSID is hidden, and the terminal cannot find the SSID. Disable: SSID is not hidden, and the terminal can find the SSID.

Note: For multi-SSID configuration, please go to the Wireless Configuration page.

3.4.1.3 Statistical Information

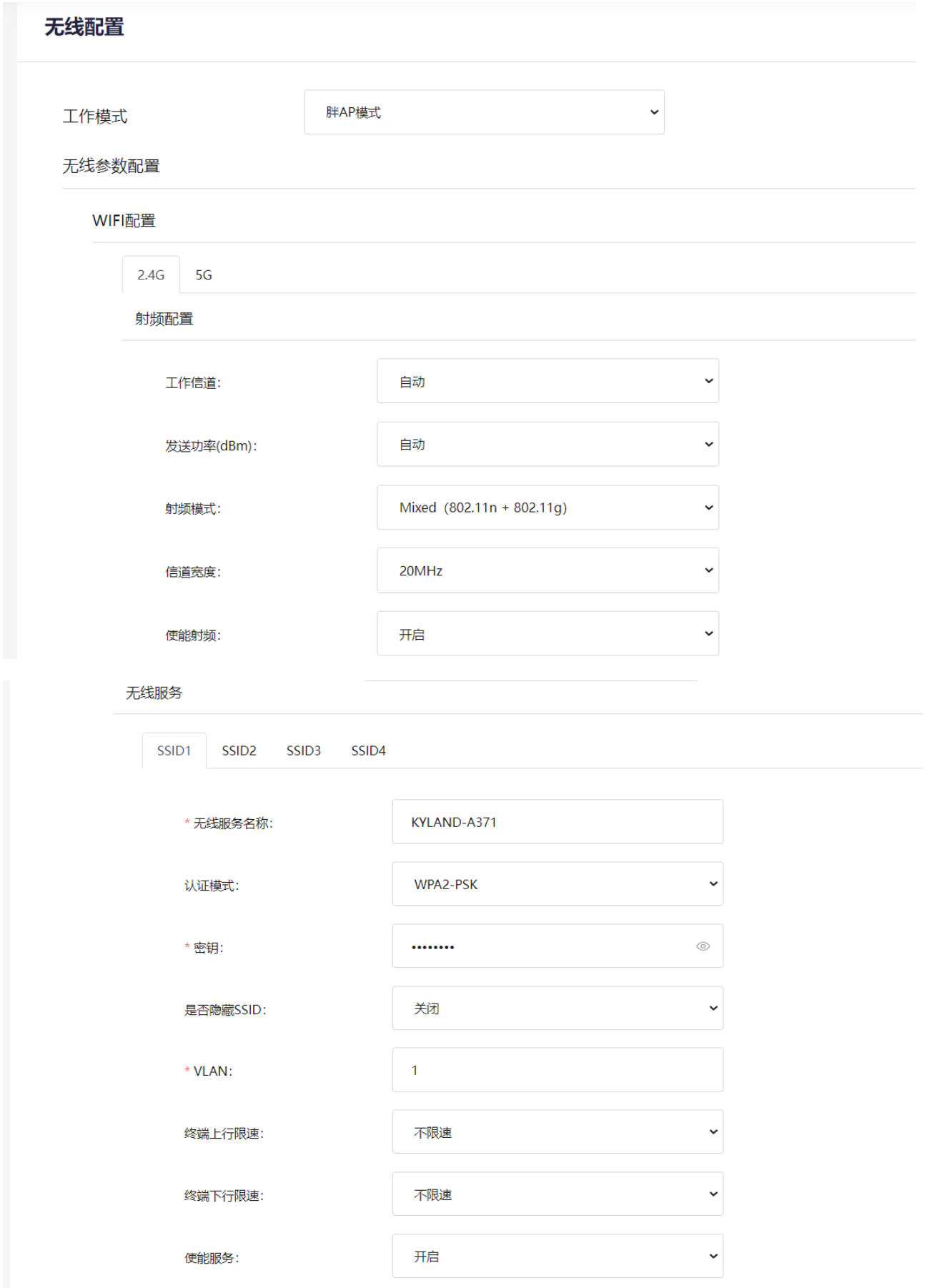
Click the [Statistical Information] menu, as shown below:



Function Description: Displays the DHCP-assigned address list and wireless client list information.

3.4.1.4 Wireless Configuration

Click the [Wireless Configuration] menu, as shown below:



Function Description:

Wireless configuration is divided into Working Mode and Wireless Parameter Configuration.

Working Mode:The AP’s mode can be switched between Fat AP mode, Thin AP mode, Bridge mode, and Gateway mode. After switching the working mode, the AP will restart.
Wireless Parameter Configuration:Includes RF Configuration and Wireless Service.
RF Configuration Parameters are described as follows:

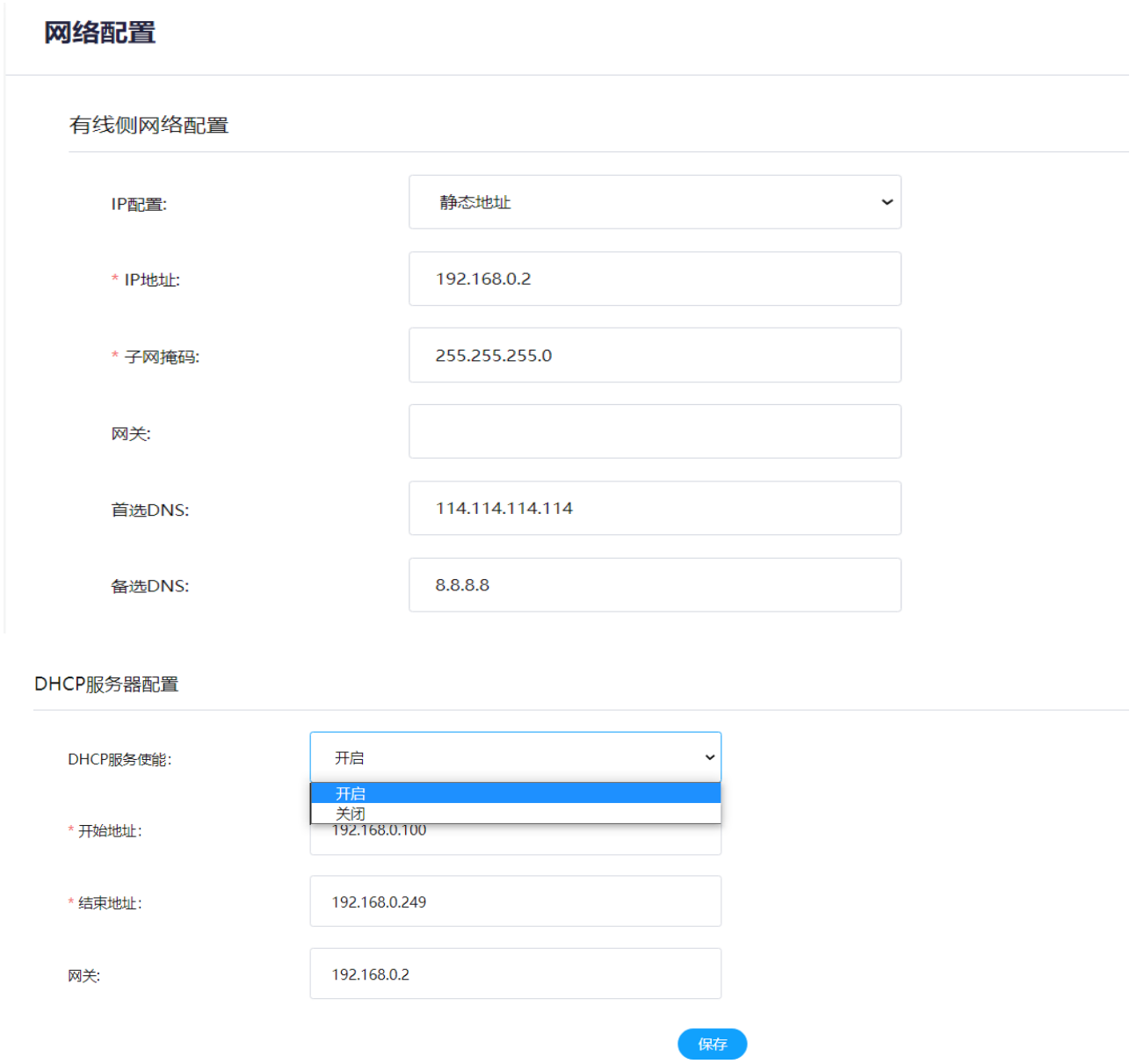
Parameter Name	Description
Working Channel	Select the working channel for 2.4G or 5G, default is automatic.
Transmit Power	Select the transmit power of the RF; the greater the power, the stronger the signal.
Working Mode	Select the wireless RF mode, using the default configuration in general cases.
Channel Width	Width of a single channel. Generally use 20MHz for 2.4G and 80MHz for 5G
RF Enable	RF switch , can be enabled or disabled.

SSID information can be configured in the wireless service, and up to 4 SSIDs can be configured for each RF, the detailed parameters are described below:

Parameter Name	Description
Wireless Service Name	The wireless name searched by the terminal, i.e., SSID.
Authentication Mode	Authentication mode for wireless access. Open mode needs to select Open; encrypted mode needs to select WPA2-PSK.
Key	Configure the wireless key; at least 8 characters, using numbers or letters.
Hide SSID	Option to enable or disable: - Enable: SSID is hidden, and the terminal cannot find the SSID. - Disable: SSID is not hidden, and the terminal can find the SSID.
VLAN	VLAN1 is the default VLAN. Used with the uplink wired network to route different services through different VLANs.
Terminal Uplink Limit	Uplink speed limit for wireless terminals, i.e., upload bandwidth limit.
Terminal Downlink Limit	Downlink speed limit for wireless terminals, i.e., download bandwidth limit.
Enable Service	Wireless service switch, can enable or disable a specific SSID independently.

3.4.1.5 Network Configuration

Click the [Network Configuration] menu, as shown below:



Wired-side Network Configuration - The IP configuration method can be set to Static Address or DHCP.

DHCP: When selecting DHCP, the AP can automatically obtain an IP address assigned by the DHCP server in the wired network. The AP's IP address must be checked in the allocation records of the wired network's DHCP server.

Static Address: When selecting a static address, the device's IP address, subnet mask, gateway, and DNS information must be manually configured according to the planning of the uplink wired network.

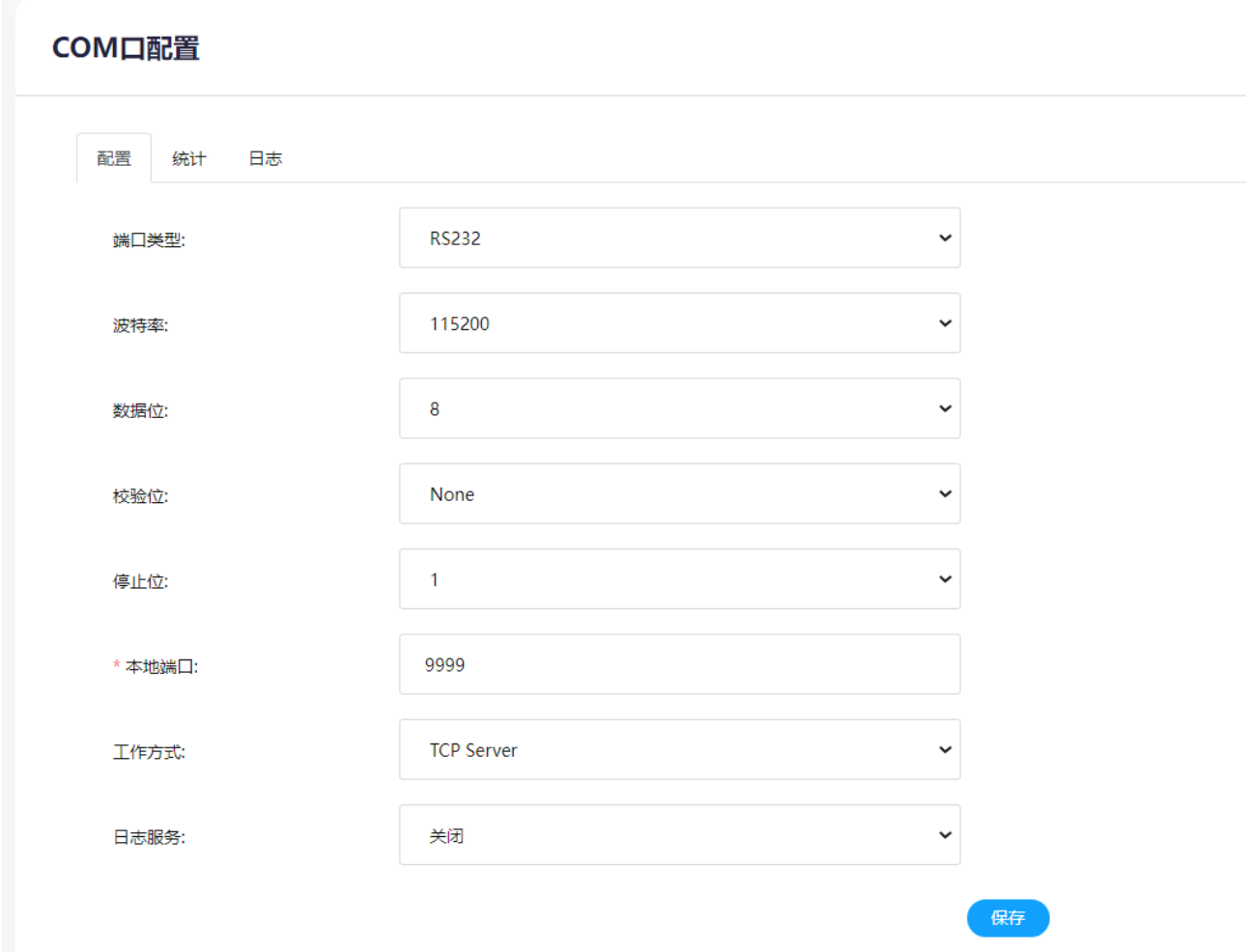
DHCP Server Configuration: The device acts as a DHCP server to assign IP addresses to terminals. Details are as follows:

Parameter Name	Description
DHCP Service Enable	Enable/Disable the DHCP service.
Start Address	The starting address of the DHCP address pool.

End Address	The ending address of the DHCP address pool.
DNS1	The address of the primary DNS server.
DNS2	The address of the secondary DNS server.

3.4.1.6 COM Port Configuration

Click the [COM Port Configuration] menu, as shown in the figure below:



Function description:

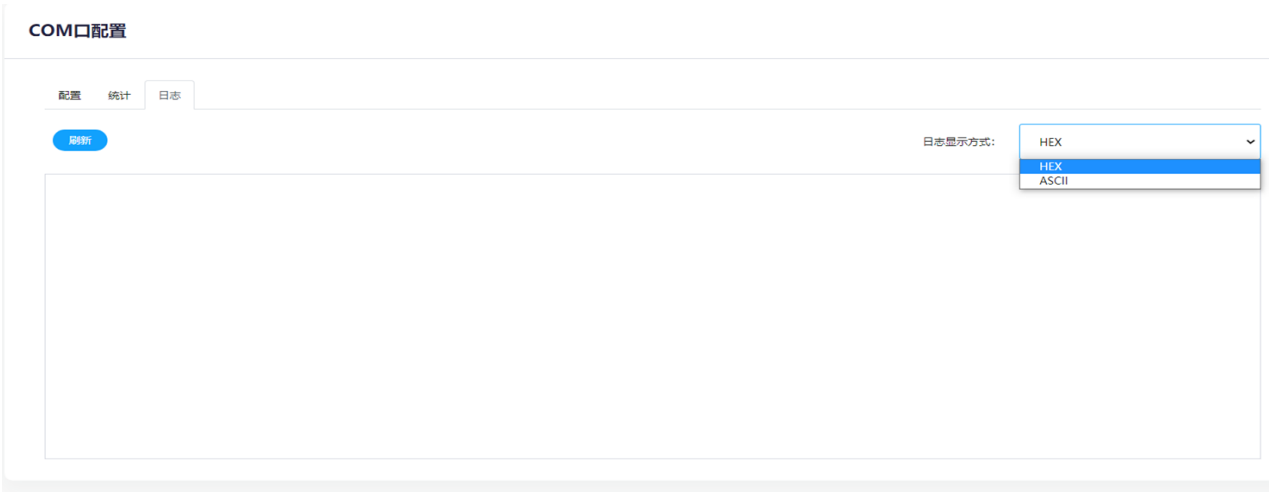
COM port configuration enables the communication between serial devices and devices on the network side. COM port configuration includes < Configuration >, < Statistics >, and < Log >. On the < Configuration > page, you can configure the serial port of the device

Parameter Name	Description
Port Type	Can select RS232 or RS485, depending on the actual scenario to connect RS232 or RS485.
Baud Rate	Set the baud rate of the serial port, which needs to be consistent with the baud rate of the terminal’s serial port.

Data Bits	Set the data bits of the serial port, which needs to be consistent with the data bits of the terminal.
Check Bit	Set the check bit of the serial port, which needs to match the parity bit of the terminal.
Stop Bit	Set the stop bit of the serial port, which needs to match the terminal’s stop bit.
Local Port	The device’s network-side TCP or UDP port.
Remote Port	Configure the TCP or UDP server port in the network, configurable when operating as UDP Client or TCP Client.
Working Mode	Configurable as UDP Client, TCP Client, UDP Server, TCP Server
Remote Server Address	Configure the IP address of the TCP or UDP server in the network, configurable when operating as UDP Client or TCP Client.
Log Service	Can choose to enable or disable. When enabled, logs can be viewed on the tab.

The < Statistics > page counts the number of bytes sent and received, as shown in the figure below

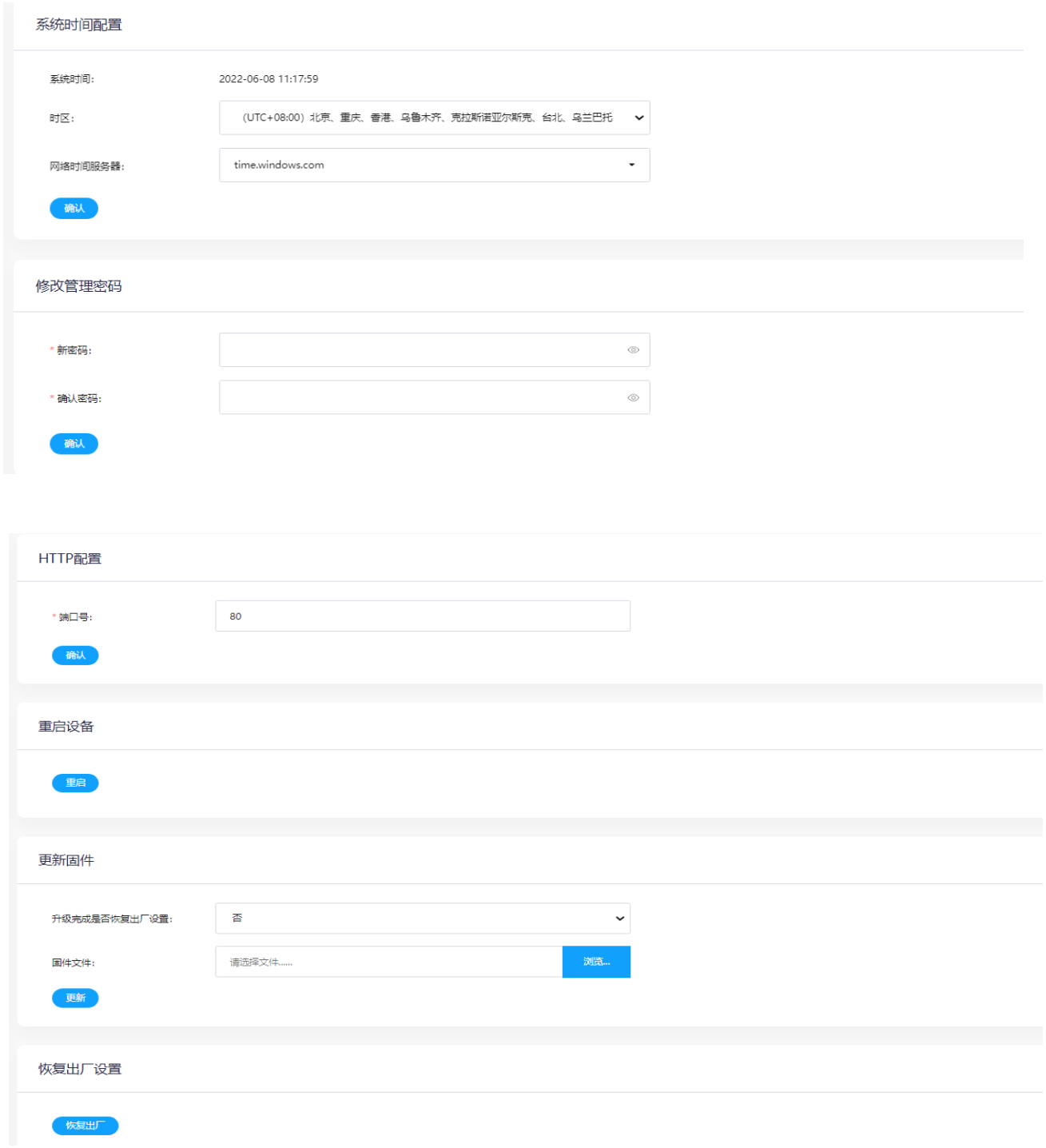
< Log > page When the log service is enabled, the content transmitted through the serial port can be displayed in HEX or ASCII mode, as shown in the figure below



3.4.1.7 System Services

3.4.1.7.1 Services

Click the "Service" menu, as shown in the figure below:



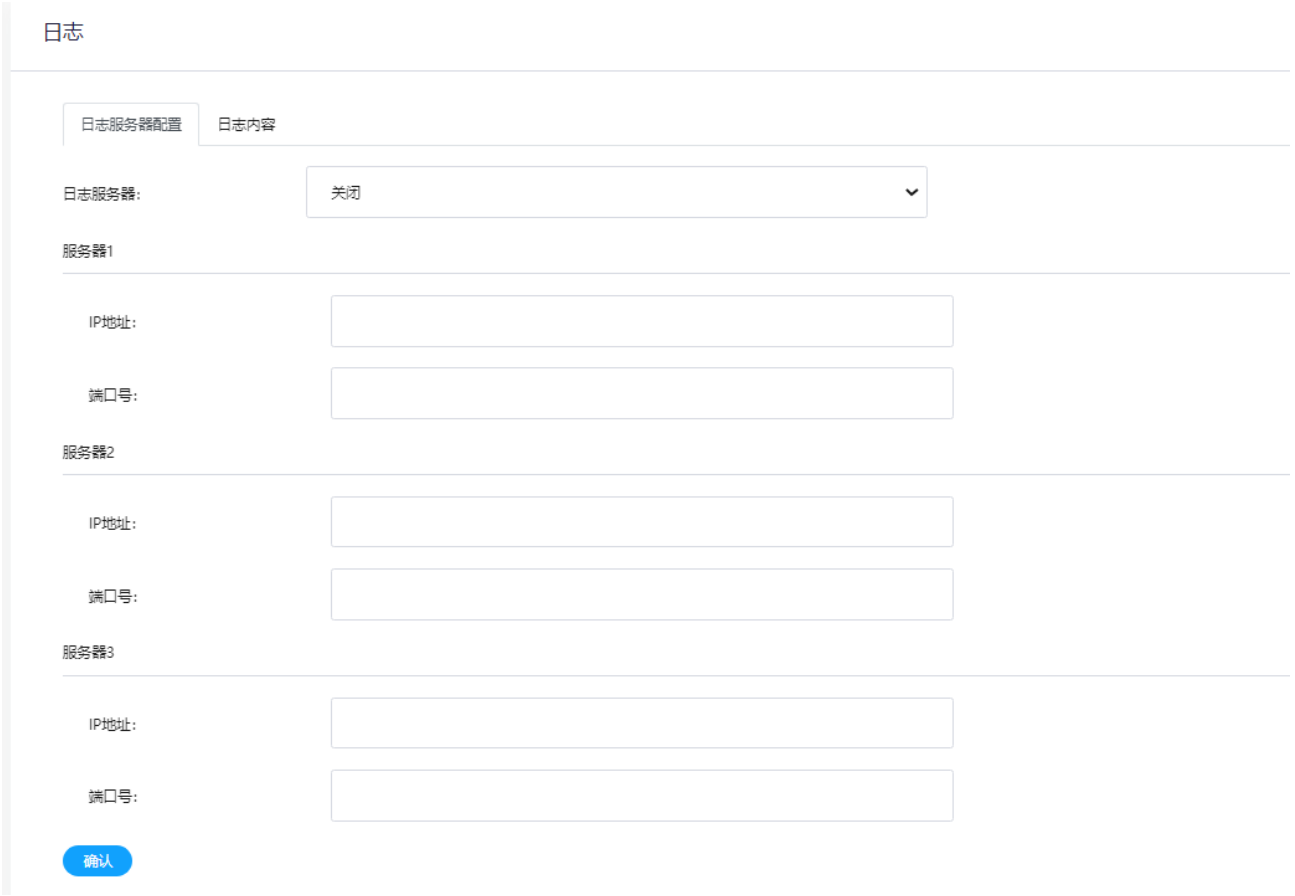
Function Description: This page provides system functions, including system time configuration, changing the management password, HTTP port number configuration, device restart, and update

Firmware, restore factory Settings. The detailed description is as follows:

Configuration Item	Description
System Time Configuration	Configures the time zone and network time server. Synchronizes system time when the network is accessible.
Modify Admin Password	Modifies the password used to log in to the web page based on project requirements.
HTTP Configuration	Configures the port for accessing the web page of the device. Default is port 80. To log in after changing, enter IP:xxxx (where xxxx is the new port).
Reboot Device	Click to reboot the device.
Update Firmware	Updates the device software version. Select the local version file via <Browse>, then click <Update> to start the upgrade. Do not power off during the process. If “Restore to Factory Settings After Update” is selected, the AP will be reset to factory settings after the upgrade. Note: If Restore factory Settings after Upgrade is set to Yes, the AP will be restored to factory Settings after upgrade.
To restore factory settings	click <Restore Factory Settings>. The device will restart and all configurations will be cleared.

3.4.1.7.2 Logs

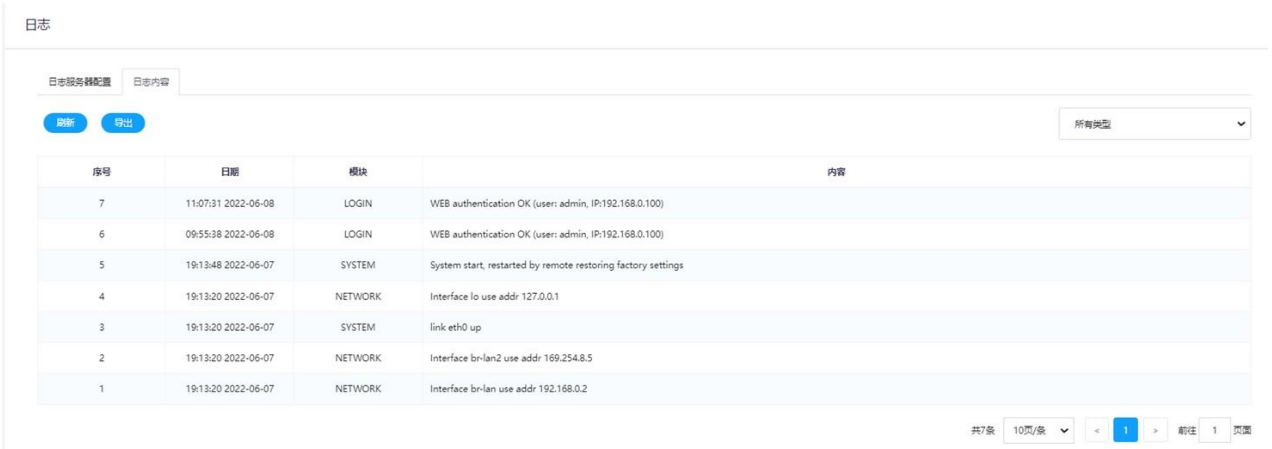
Click the [Logs] menu, as shown below:



Function Description: [Log] is divided into Log Server Configuration and Log Content, this page can configure the external log server address and port. Detailed description is as follows:

Configuration Item	Description
Log Server	Enables or disables the connection to external log servers.
IP Address	The IP address of the log server. Up to three log servers can be configured.
Port Number	The port number for receiving logs on the log server. Up to three log servers can be configured.

The log content displays the event logs of the device, as shown below



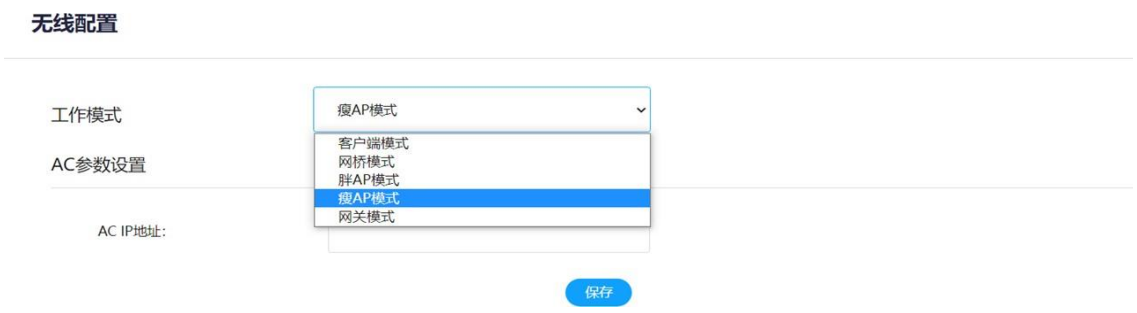
Log types are described in detail below:

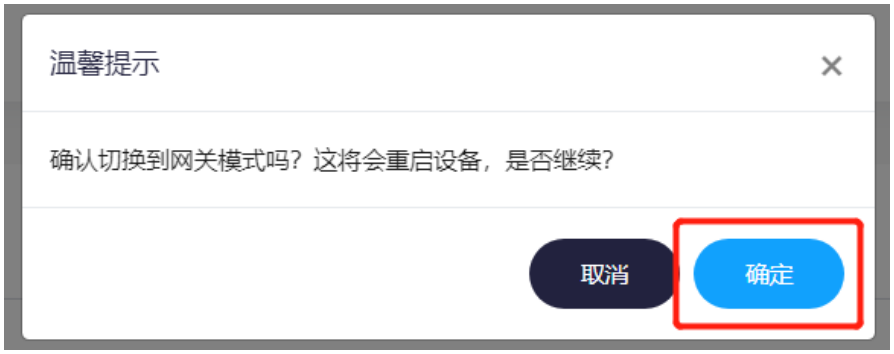
Log type	Description
All types	Displays all types, default selections
WLAN	Displays logs of the wireless module, including terminal association logs, terminal disassociation logs, and PSK authentication Logs
SYSTEM	Displays device startup logs and port status logs
CAPWAP	CAPWAP tunnel status logs of the thin AP are displayed
DHCP	Displays DHCP assigned address logs and terminal RELEAS IP logs
LOGIN	Display web login logs and SSH login logs
NETWORK	Displays a log of the port's use of an IP address

3.5 Switching the AP to Gateway Mode

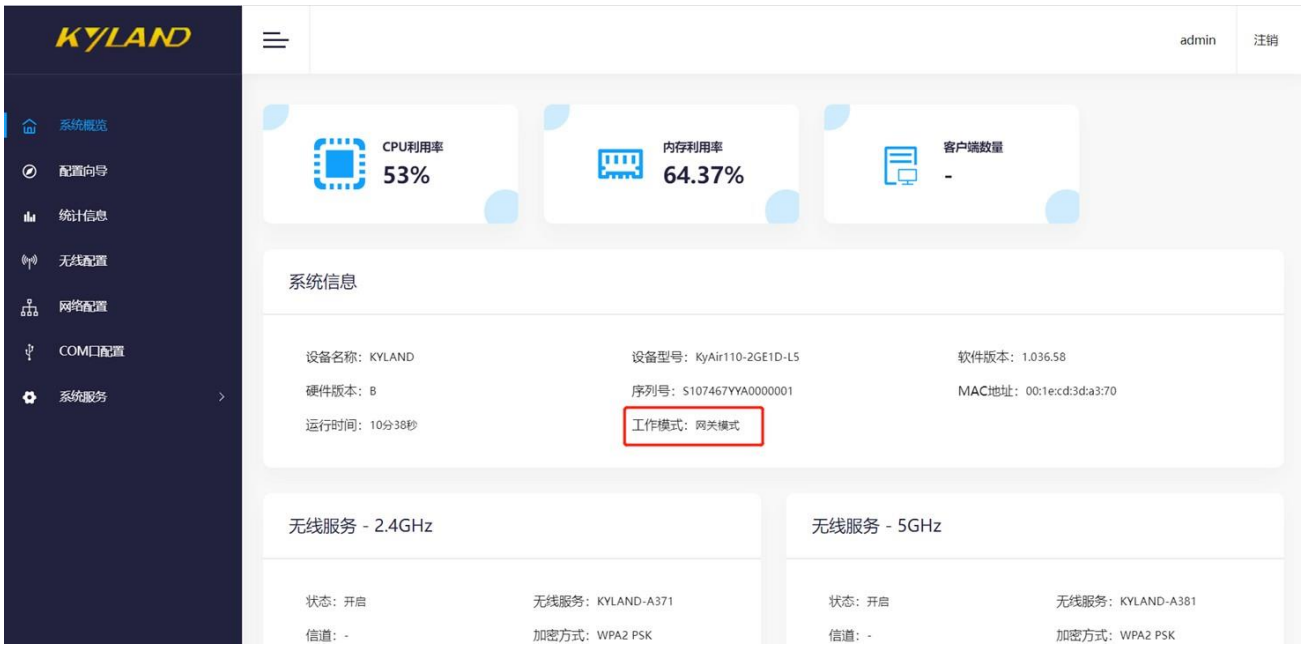
Gateway mode is used to transmit wireless signals, serving as a wireless access point for wireless terminals to connect. This mode supports NAT functionality and virtual server functionality.

The AP is set to client mode by default at the factory. You can switch the AP to gateway mode on the [Wireless Configuration] page.





Wait for the AP to restart. After completion, log back into the web page, and you will see that the AP has been switched to gateway mode.



3.5.1 Main Menu Navigation

3.5.1.1 System Overview

The homepage after the user successfully logs in is the [Overview] menu.

The gateway system overview page is shown below:

The descriptions of gateway status information are shown in the table below:

Serial Number	Name	Description
1	Real-time Status	Displays the current CPU usage, memory usage, and the number of clients.
2	System Information	Displays device model, software version, hardware version, serial number, MAC address, uptime, and working mode.
3	Wireless Service	Displays the current wireless status, including the states of 2.4G and 5G, channels, SSID name, encryption methods, etc.
4	DHCP Service Information	Displays the DHCP server status, current number of users, start/end address, and gateway information.
5	WAN Port Information	Displays the current wired port information, including connection type, IP address, subnet mask, gateway, DNS, etc.

3.5.1.2 Configuration Wizard

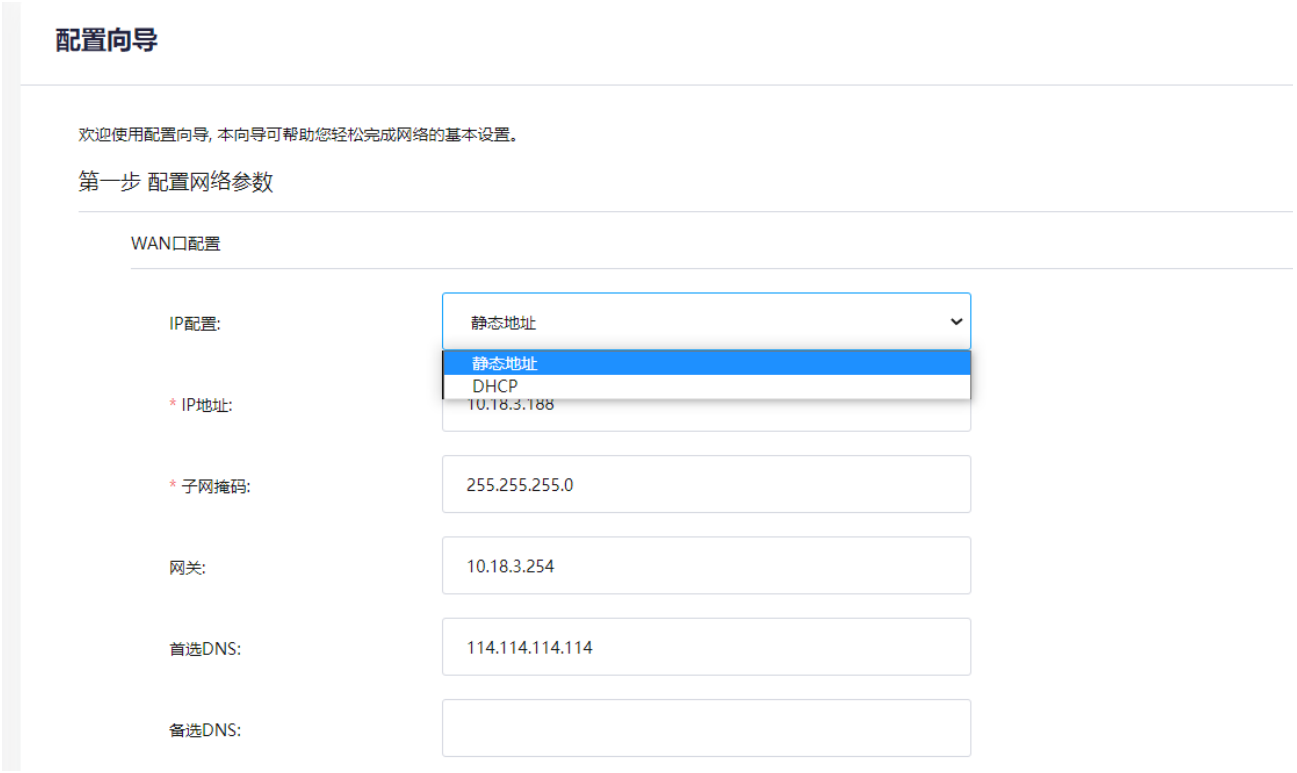
Click the [Configuration Wizard] button to navigate to the configuration wizard page. This wizard helps you easily complete the basic network setup.

Current Working Mode

Displays the current working mode. Click to continue.

Note: To change the working mode, please modify it on the wireless configuration page.

Step 1: Wired-Side Network Configuration



Configure the uplink network for the wired port. The internet connection type can be set to static IP or DHCP. When DHCP is selected, the AP can automatically obtain an IP address assigned by the DHCP server within the wired network. The AP's IP address needs to be checked in the DHCP server's allocation record in the wired network.

If a static IP is chosen, you need to manually configure the device's IP address, subnet mask, gateway, and DNS information. After configuration, click .

Note: In gateway mode, this page adds a "LAN Port Configuration" module, where you can configure the DHCP address pool for terminals, as shown below:

Step 2: Wireless Service Configuration

Configure the wireless services for 2.4G and 5G Radios in gateway mode. In the configuration wizard, you can configure one SSID for each of the 2.4G and 5G Radios. After configuring the 2.4G and 5G wireless services, click Save, as shown below:

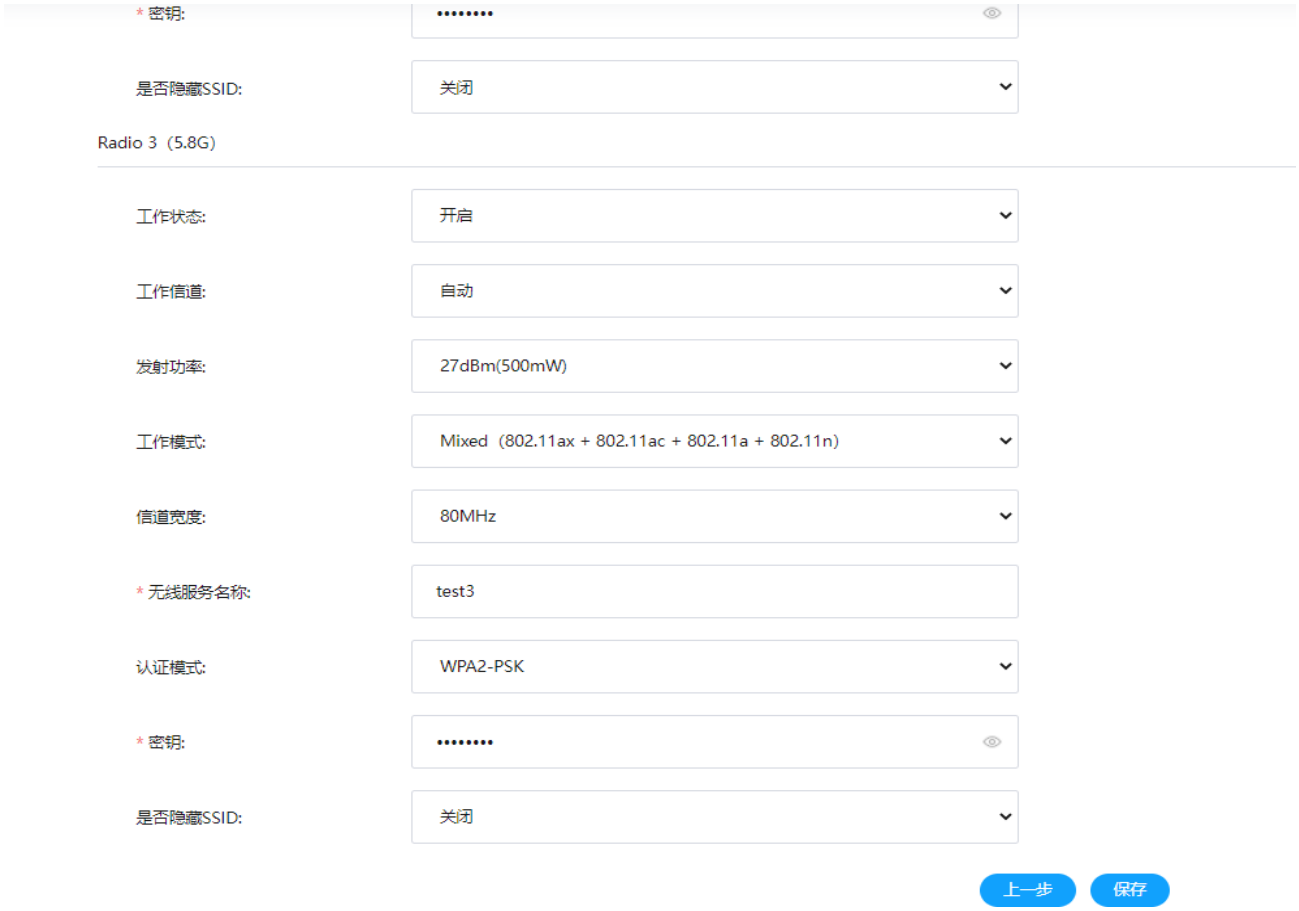
配置向导

欢迎使用配置向导, 本向导可帮助您轻松完成网络的基本设置。

第二步 配置无线服务

Radio 1（2.4G）

工作状态:	开启
工作信道:	自动
发射功率:	27dBm(500mW)
工作模式:	Mixed（802.11ax + 802.11n + 802.11g）
信道宽度:	20MHz
* 无线服务名称:	test
认证模式:	WPA2-PSK
* 密钥:	66666666
是否隐藏SSID:	关闭



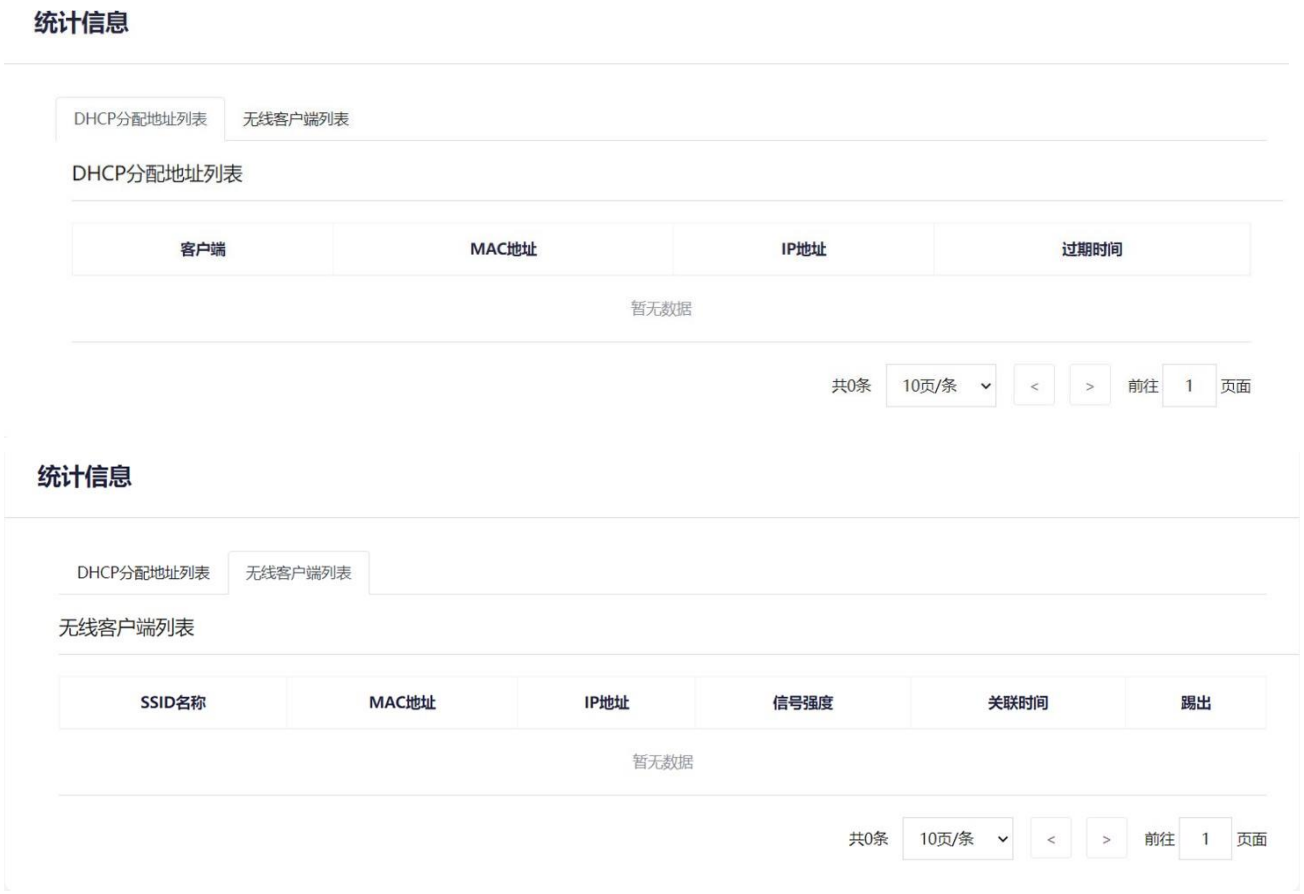
Detailed parameters are as follows:

Parameter name	Description
Working Status	Radio switch; can be turned on or off.
Working Channel	Choose the working channel for 2.4G or 5G. The default is Automatic.
Transmission Power	Select the radio's transmission power. Higher power results in a stronger signal.
Working Mode	Choose the wireless radio mode. Generally, 2.4G uses 11ng, and 5G uses 11ac.
Channel Width	The width of a single channel. Typically, 2.4G uses 20MHz, and 5G uses 80MHz.
Wireless Service Name	The wireless name detected by terminals, i.e., the SSID.
Authentication Mode	The authentication method for wireless access. Options include Open, WPA-PSK, WPA2-PSK, WPA/WPA2-PSK.
Key	Set the wireless password. Must be at least 8 characters long and consist of letters or numbers.
Hide SSID	Can be enabled or disabled. Enabled: SSID is hidden, and wireless terminals cannot detect it. Disabled: SSID is visible to wireless terminals.

Note: To configure multiple SSIDs, go to the Wireless Configuration page.

3.5.1.3 Statistics Information

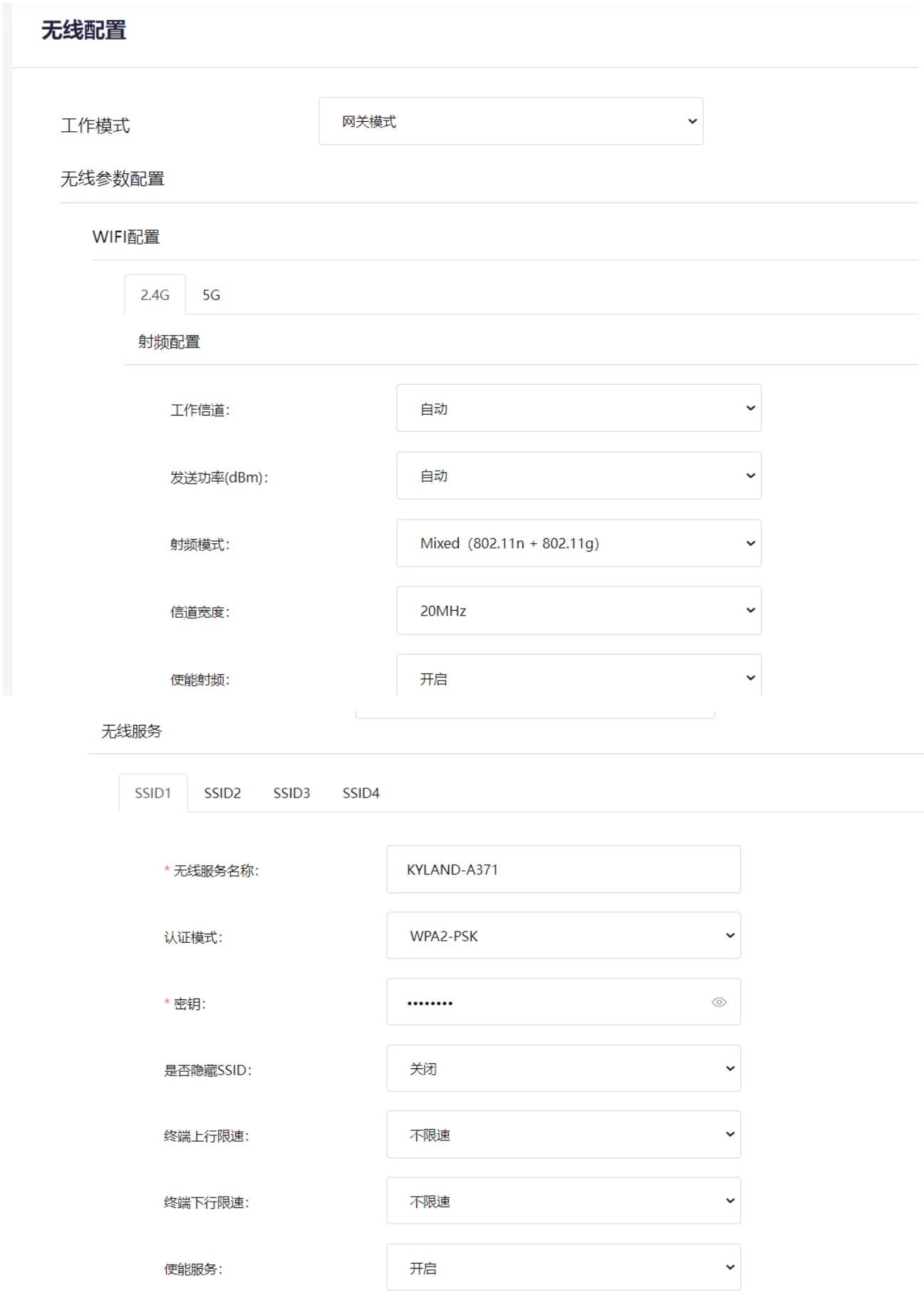
Click the [Statistics Information] menu, as shown below:



Function Description: Displays the DHCP assigned address list and wireless client list information.

3.5.1.4 Wireless Configuration

Click the [Wireless Configuration] menu, as shown below:



Function Description:

Wireless configuration is divided into Working Mode and Wireless Parameter Configuration.

Working Mode: Allows switching the AP’s mode, supporting Fat AP Mode, Thin AP Mode, Bridge Mode, and Gateway Mode. The AP will restart after switching the working mode.

Wireless Parameter Configuration:Wireless parameter configuration is divided into Radio Configuration and Wireless Service.

Detailed parameters for radio configuration are as follows:

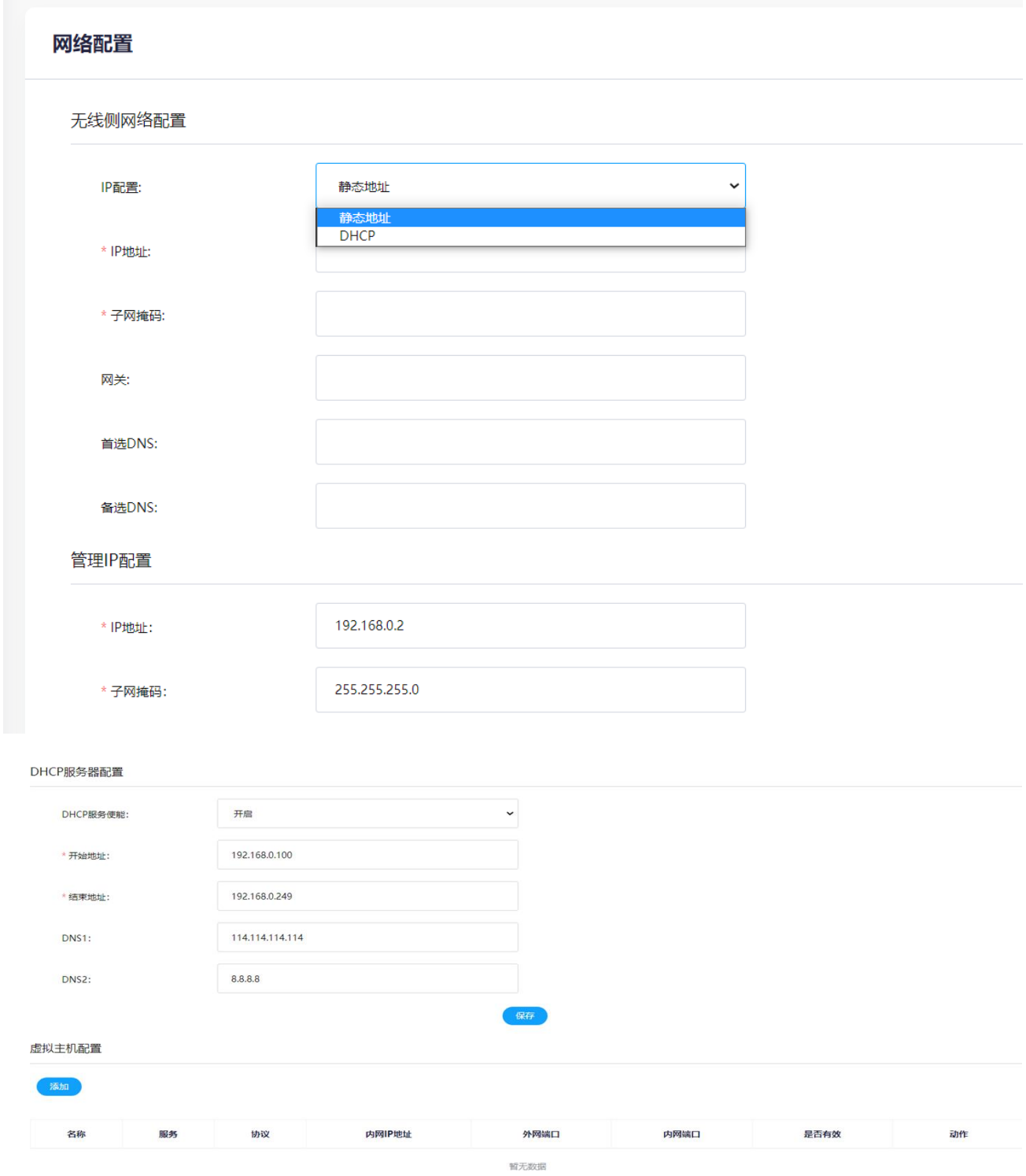
Parameter Name	Description
Working Channel	Select the working channel for 2.4G or 5G, default is automatic.
Transmit Power	Select the transmit power of the RF; the greater the power, the stronger the signal.
Working Mode	Select the wireless RF mode, using the default configuration in general cases.
Channel Width	Width of a single channel. Generally use 20MHz for 2.4G and 80MHz for 5G
RF enable	The RF switch can be enabled or disabled

In Wireless Service, you can configure SSID information. Each radio can support up to 4 SSIDs. Detailed parameters are as follows:

Parameter Name	Description
Wireless Service Name	The wireless name detected by terminals, i.e., the SSID.
Authentication Mode	The authentication method for wireless access. Open mode requires selecting Open, while encryption mode requires WPA2-PSK.
Key	Set the wireless password. Must be at least 8 characters long and consist of letters or numbers.
Whether to hide SSID	Can be enabled or disabled. Enabled: SSID is hidden, and wireless terminals cannot detect it. Disabled: SSID is visible to wireless terminals.
VLAN	VLAN1 is the default VLAN. Used with uplink wired networks to route different services through different VLANs.
Terminal Upload Limit	Limit the upload bandwidth of wireless terminals.
Terminal Download Limit	Limit the download bandwidth of wireless terminals
Enable Service	Wireless service switch; individual SSIDs can be enabled or disabled.

3.5.1.5 Network Configuration

Click the [Network Configuration] menu, as shown below:



Function Description:

Network Configuration is divided into Wireless Network Settings, Management IP Configuration, DHCP Server Configuration, and Virtual Host Configuration.

Wireless Network Settings: Configure whether the IP address of the uplink wireless network is obtained via DHCP or set as a static address. Detailed parameters are as follows:

Parameter Name	Description
Internet Access Mode	Choose between DHCP or Static Address. Selecting DHCP automatically obtains an IP address assigned by the DHCP server.

IP Address	Configurable when selecting Static Address. Set the bridge's static IP address, matching the wireless network.
Subnet Mask	Configurable when selecting Static Address. Set the bridge's subnet mask, matching the wireless network.
Gateway	Configurable when selecting Static Address. Set the bridge's gateway, matching the wireless network.
Preferred DNS	Configurable when selecting Static Address. Set the bridge's primary DNS, matching the wireless network.
Alternate DNS	Configurable when selecting Static Address. Set the bridge's secondary DNS, matching the wireless network.

Management IP address configuration: Configure the management address of the device, which also serves as the gateway assigned by the DHCP server. Detailed parameters are as follows:

Parameter Name	Description
IP Address	This IP is the gateway address of the wired network, also used to log into the web page. It can be modified according to the actual project needs.
Subnet Mask	Defaults to a 24-bit mask but can be modified based on actual project requirements.

DHCP Server Configuration:The device acts as a DHCP server to assign IP addresses to terminals. Detailed explanations are as follows:

Parameter Name	Description
Enable DHCP Service	Turn the DHCP service on or off.
Start Address	Starting address of the DHCP address pool.
End Address	Ending address of the DHCP address pool.
DNS1	Primary DNS server address.
DNS2	Secondary DNS server address.

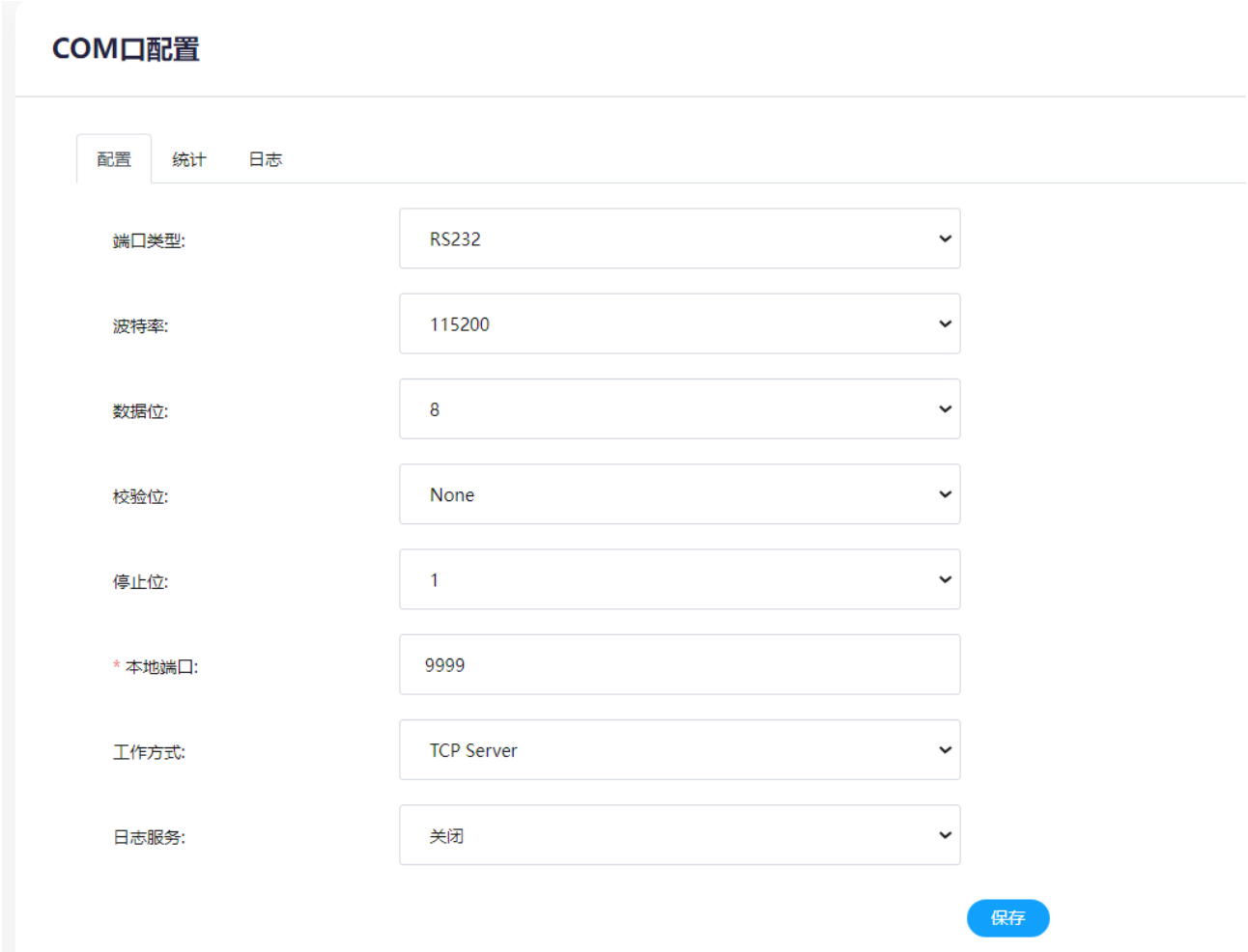
Virtual Host Configuration:Add a virtual host to implement port mapping functionality. The Add Virtual Host page is shown below:

Detailed explanation as follows:

Parameter Name	Description
Name	Identifies the virtual host service.
Service	Identifies the virtual host's service. When selecting preset services such as SSH, HTTP, Telnet, or FTP, the protocol and internal port below cannot be modified.
Protocol	Protocol used by the virtual host. Options include TCP, UDP, and TCP+UDP.
Internal IP Address	The internal IP of the virtual host, obtained via DHCP or set as a static address, needs to be used
External Port	The port number used to access the virtual host externally
Internal Port	The port number used by the virtual host for its services.

3.5.1.6 COM Port Settings

Click the [COM Port Configuration] menu, as shown below:



Function Description:

The COM port configuration is divided into <Configuration>, <Statistics>, and <Logging> to enable serial devices to communicate with devices on the network side.

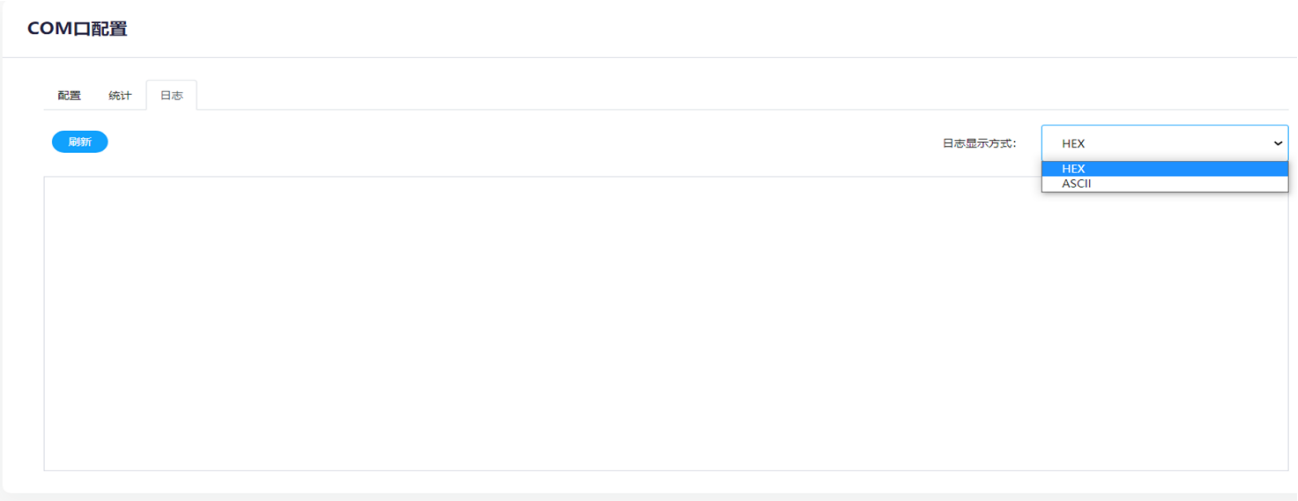
The <Configuration> page allows you to configure the device's serial ports, as described in detail below

Parameter Name	Description
Port Type	Choose between RS232 and RS485, depending on the actual scenario.
Baud Rate	Set the serial port baud rate, which must match the baud rate of the terminal.
Data Bits	Set the data bits for the serial port, which must match the terminal's data bits.
Check Bits	Set the check bits for the serial port, which must match the terminal's check bits.
Stop Bits	Set the stop bits for the serial port, which must match the terminal's stop bits

Local Port	The TCP or UDP port of the device on the local network side.
Remote Port	Configure the port of the TCP or UDP server in the network. Configurable when in UDP Client or TCP Client mode.
Working Mode	Configurable as UDP Client, TCP Client, UDP Server, TCP Server
Remote Server Address	Set the IP address of the TCP or UDP server in the network. Configurable when in UDP Client or TCP Client mode.
Log Service	Can be turned on or off. When enabled, logs can be viewed on the tab.

The <Statistics> page counts the number of bytes sent and received, as shown below

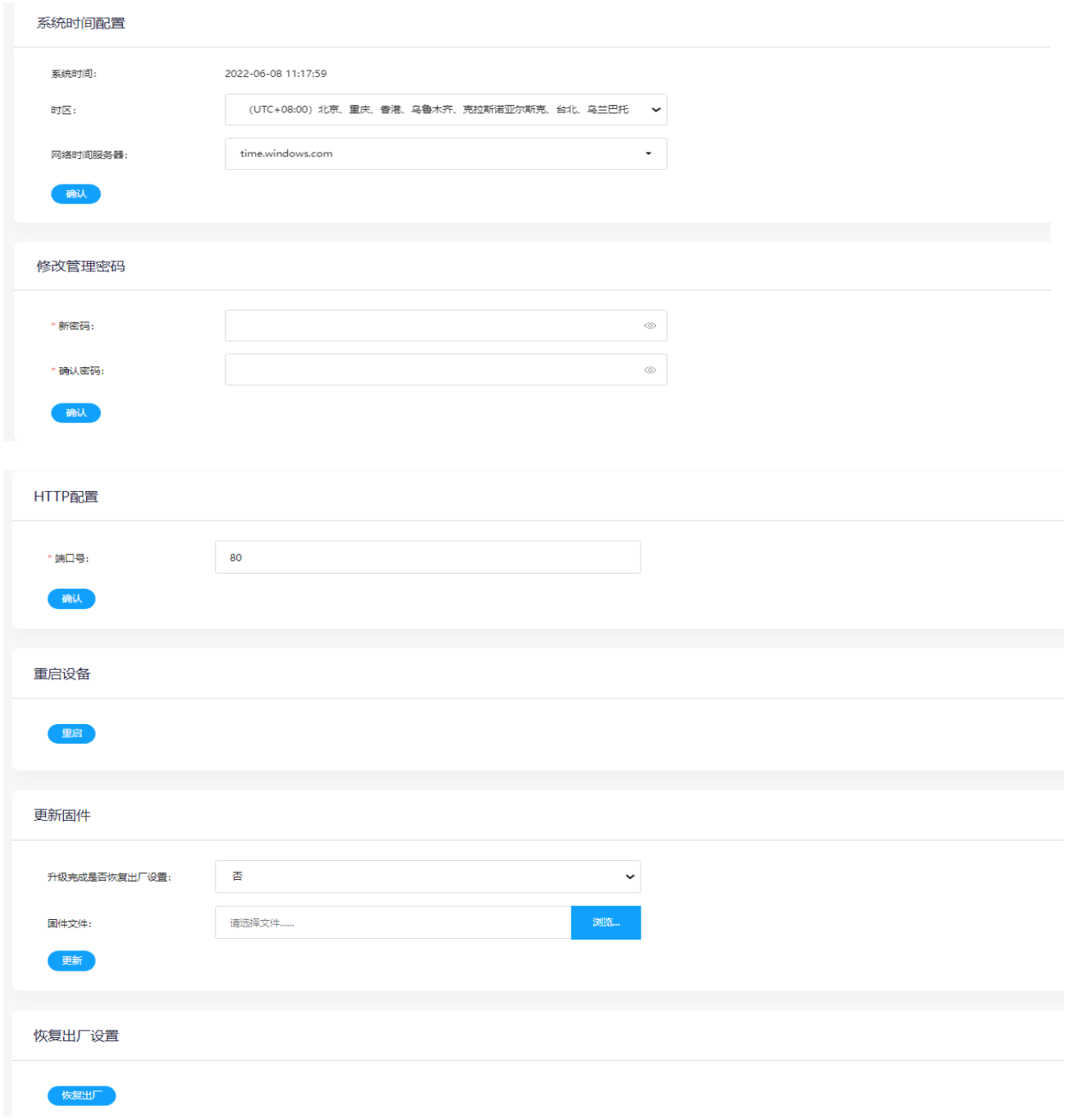
The <Log> page displays the contents of the serial port transmission when the logging service is turned on, and the logging display can be either HEX or ASCII, as shown in the following figure



3.5.1.7 System Services

3.5.1.7.1 Services

Click the [Services] menu, as shown below:



Function Description:This page provides system functions, including system time configuration, changing the management password, HTTP port configuration, device reboot, firmware updates, and restoring factory settings.

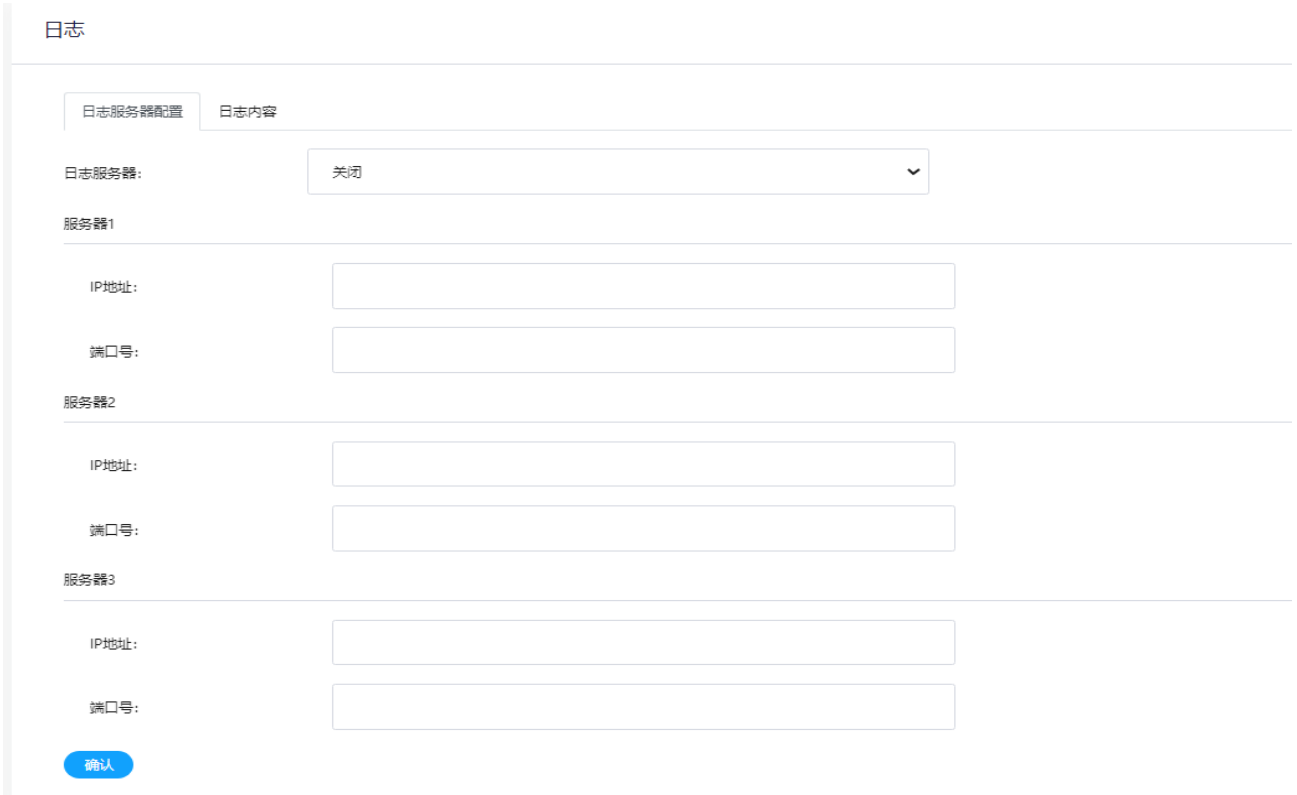
A detailed description is given in the table below:

Configuration item	Description
System Time Configuration	Configure the time zone and network time server. System time can be synchronized when the network is available.
Change Management Password	The password used to log into the WEB page. Can be modified according to actual project needs.

HTTP Configuration	Configure the port for accessing the web page of the device, the default port is 80. After modifying other ports, when logging into the web page, you need to enter: IP:xxxx (IP is the ip address of the AP, and xxxx is the port number) in the address bar of the browser.
Reboot Device	Click to reboot the device
Update Firmware	Updates the device software version. Select the local version file via <Browse>, then click <Update> to start the upgrade. Do not power off during the process. If “Restore to Factory Settings After Update” is selected, the AP will be reset to factory settings after the upgrade. Note: If Restore factory Settings after Upgrade is set to Yes, the AP will be restored to factory Settings after upgrade.
Restore Factory Settings	Click <Restore Factory>, the device will reboot and clear all configurations.

3.5.1.7.2 Logs

Click the [Logs] menu, as shown below:

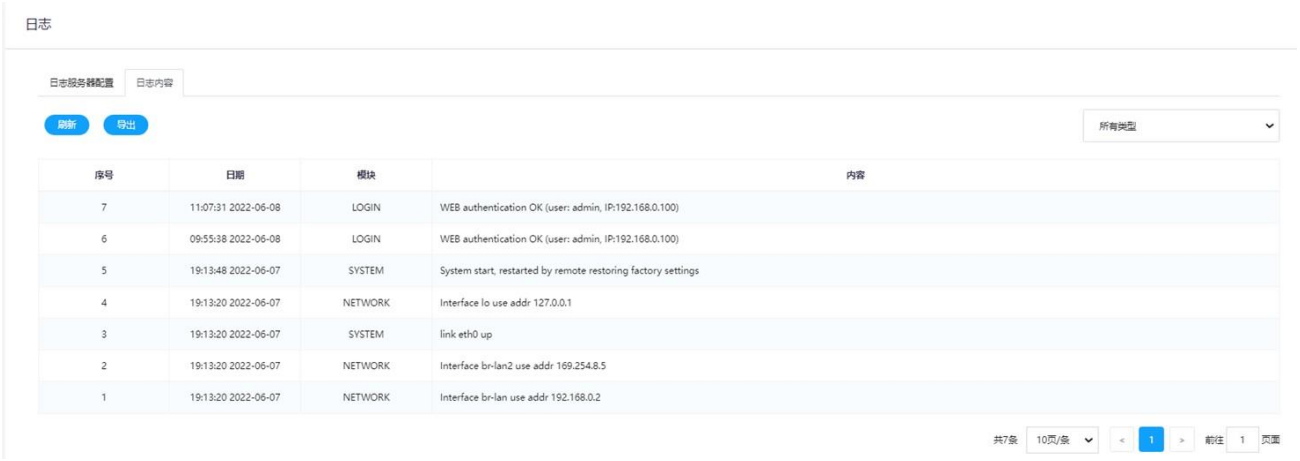


Function Description: The [Logs] menu includes log server configuration and log content.

This page allows you to configure the external log server address and port.

Configuration item	Description
Log Server	Enable or disable the function for connecting to an external log server.
IP Address	The IP address of the log server. A logical connection must be available. You can configure up to 3 log servers.
Port Number	The port number of the log server, used for receiving logs. Up to 3 log servers can be configured.

Log content displays the device's event logs, as shown below:



Detailed descriptions of log types are as follows:

Log Type	Description
All Types	Displays all log types. This is the default selection.
WLAN	Displays logs for the wireless module, including terminal association, disassociation, and PSK authentication logs.
SYSTEM	Displays device startup logs and port status logs.
CAPWAP	Displays logs for the CAPWAP tunnel status of thin APs.
DHCP	Displays DHCP address assignment logs and terminal RELEASE IP logs.
LOGIN	Display web login logs and SSH login logs
NETWORK	Displays a log of the port's use of an IP address