3onedata



IAP2300C Series
Industrial Wireless Client
User Manual

Document Version: 01

Issue Date: 03/12/2026

Industrial Ethernet Communication Solution Expert **3onedata Co., Ltd.**

Copyright © 2026 3onedata Co., Ltd. All rights reserved.

No company or individual is allowed to duplicate or transmit this manual in any forms without written permission issued by 3onedata Co., Ltd.

Trademark Statement

3onedata, 3onedata and 

are the registered trademarks owned by 3onedata Co., Ltd. And other trademarks mentioned in this manual belong to their corresponding companies.

Notice

Purchased product, service or features should be constrained by 3onedata commercial contracts and clauses. The whole or part product, service or features described in this document may beyond purchasing or using range. 3onedata won't make any statement or warranty for this document content unless any other appointment exists.

Due to product version upgrading or other reason, this document content will be upgraded periodically. Unless other appointment exists, this document is only for usage guide, all statement, information and suggestion in this document won't constitute any warranty.



3onedata Co., Ltd.

Headquarter address:	3/B, Zone 1, Baiwangxin High Technology Industrial park, Nanshan District, Shenzhen, 518108 China
Technology support:	tech-support@3onedata.com
Service hotline:	+86 -880-4496
E-mail:	sales@3onedata.com
Fax:	+86 -0755-26703485
Website:	http://www.3onedata.com

Preface

The user manual has introduced the network management method of wireless client product.

Audience

This manual applies to the following engineers:

- Network administrators responsible for network configuration and maintenance
- On-site technical support and maintenance personnel
- Network engineer

Port Convention

The port number in this manual is only an example, and does not represent the actual port with this number on the device. In actual use, the port number existing on the device shall prevail.

Text Format Convention

Format	Description
" "	Words with “” represent the interface words. Such as: “Port No.”.
>	Multi-level path is separated by ">". Such as opening the local connection path description: Open "Control Panel> Network Connection> Local Area Connection".
Light Blue Font	It represents the words clicked to achieve hyperlink. The font color is as follows: ‘Light Blue’.
About this chapter	The section ‘about this chapter’ provides links to various sections of this chapter, as well as links to the Principles/Operations Section of this chapter.

Icon Convention

3onedata proprietary and confidential
Copyright © 3onedata Co., Ltd.

Format	Description
 Notice	Remind the announcements in the operation, improper operation may result in data loss or equipment damage.
 Warning	Pay attention to the notes on the mark, improper operation may cause personal injury.
 Note	Conduct necessary supplements and explanations for the description of operation content.
 Key	Configuration, operation, or tips for device usage.
 Tips	Pay attention to the operation or information to ensure success device configuration or normal working.

Button Operation Convention

Format	Description
With immediate effect	There is a button "With immediate effect" in the upper left corner of the webpage, and the configuration of the current operation page takes effect immediately after clicking it.
Effective after restart	There is a button “Effective after restart" in the upper left corner of the webpage, click it and the "Restart" confirmation button will pop up, click it to restart the system and the configuration will take effect.

Revision Record

Version No.	Revision Date	Revision Note
01	03/12/2026	Product release

Copyright © 3onedata Co., Ltd.

Contents

PREFACE 1
CONTENTS I
1 LOGIN TO THE WEB INTERFACE 1
1.1 SYSTEM REQUIREMENTS FOR WEB BROWSING 1
1.2 SET THE IP ADDRESS OF PC 1
1.2.1 Wired Access Mode 1
1.2.2 Wireless Access Mode 2
1.3 LOGIN TO THE WEB CONFIGURATION INTERFACE 3
2 STATE INFORMATION 5
3 WORK MODE 9
3.1 ROUTE 10
3.1.1 WAN Settings 11
3.1.2 LAN Settings 14
3.1.3 WiFi 1 15
3.1.4 WiFi 2 18
3.1.5 Finish 22
3.2 AP 23
3.2.1 LAN settings 24
3.2.2 WiFi 1 25
3.2.3 WiFi 2 29
3.2.4 Finish 33
3.3 BRIDGE 34
3.3.1 Connection Mode 35
3.3.2 WAN Settings 36
3.3.3 LAN Settings 38
3.3.4 Connection Settings 40
3.3.5 Wireless Settings 1 42
3.3.6 Wireless Setting 2 44
3.3.7 Finish 46
3.4 CLIENT 46
3.4.1 Connection Mode 47
3.4.2 WAN Settings 48
3.4.3 LAN Settings 51
3.4.4 Connection Settings 53

Copyright © 3onedata Co., Ltd.

3.4.5 Finish 56
3.5 DUAL-LINK MODE 57
3.5.1 Connection Mode 58
3.5.2 WAN Settings 59
3.5.3 LAN Settings 62
3.5.4 Connection Settings 64
3.5.5 Finish 70
4 STATUS CENTER 72
4.1 SYSTEM STATUS 72
4.2 NETWORK STATUS 73
4.3 WIRELESS STATUS 74
4.4 DEVICE STATISTICS 74
4.5 ARP TABLE 75
4.6 ROUTE TABLE 76
4.7 SEAMLESS ROAMING 76
5 LOG CENTER 1
5.1 WIRELESS USER LOG 1
5.2 SEAMLESS ROAMING LOG 3
5.3 SYSTEM LOG 5
5.4 SERIAL LOG 7
6 NETWORK 10
6.1 LAN SETTINGS 10
6.1.1 LAN Settings 1 10
6.1.2 LAN Settings 2 12
6.1.3 LAN Settings 3 13
6.2 WAN SETTINGS 16
6.3 WIRELESS SETTINGS-AP 19
6.3.1 RF 1 Configuration 20
6.3.2 RF 2 Configuration 24
6.3.3 Advanced Configuration 27
6.3.4 WMM Configuration 30
6.4 WIRELESS SETTINGS-CLIENT 32
6.4.1 RF Configuration 33
6.5 VLAN SETTINGS 43
6.6 DELAY CONTROL 45
6.7 QOS MANAGEMENT 46
6.7.1 QoS Whitelist 47
6.8 WIRELESS PROBE 48
6.9 AC MANAGEMENT 50
6.10 SNMP CONFIG 51
6.11 ROAMING AGENT 52
6.12 PORT MIRRORING 53
7 SERIAL PORT MANAGEMENT 55

Copyright © 3onedata Co., Ltd.

7.1 SERIAL PARAMETERS 55
7.2 SERIAL MODE PORT1 56
7.2.1 RealCom Mode 57
7.2.2 TCP Server Mode 60
7.2.3 TCP Client Mode 65
7.2.4 UDP Server Mode 69
7.2.5 UDP Client Mode 72
7.2.6 UDP Rang Mode 75
7.2.7 Disable Mode 78
7.3 MODBUS SETTING 78
8 WIRELESS CLIENT 82
8.1 USER LIST 82
8.2 USER EVENT 84
9 FIREWALL 86
9.1 IP FILTER 86
9.2 MAC FILTER 88
9.3 URL FILTER 89
9.4 DNAT SETTINGS 90
9.5 SNAT SETTINGS 91
9.6 ARP BINDING 92
9.7 DMZ SETTINGS 94
10 SYSTEM TOOLS 95
10.1 NETWORK DETECTION 95
10.2 USER SETTINGS 97
10.3 DEVICE ALIAS 98
10.4 TIME SETTINGS 99
10.5 TIMED RESTART 100
10.6 ACCESS SETTINGS 100
10.7 SYSTEM UPGRADING 102
10.8 CONFIG UPDATE 103
10.9 SYSTEM MANAGEMENT 104
10.10 LOG MANAGE 105
11 DIAGNOSTIC TOOLS 107
11.1 PING TEST 107
11.2 ROUTE TRACKING 107
12 FAQ 109
13 MAINTENANCE AND SERVICE 112
13.1 INTERNET SERVICE 112
13.2 SERVICE HOTLINE 112
13.3 PRODUCT REPAIR OR REPLACEMENT 113

3onedata proprietary and confidential
Copyright © 3onedata Co., Ltd.

1 Login to the WEB Interface

1.1 System Requirements for WEB Browsing

While logging into the WEB of this device, the system should meet the following conditions.

Hardware and Software	System Requirements
CPU	Above Pentium 586
Memory	Above 128MB
Resolution	Above 1024x768
Color	256 colors or above
Browser	Internet Explorer 8.0 or above
Operating system	Windows XP/7/8/10

1.2 Set the IP Address of PC

1.2.1 Wired Access Mode

The default management network address of the device is as follows:

IP Settings	Default Value
IP address	192.168.1.254
Subnet mask	255.255.255.0

When configuring a device through the Web:

- Please confirm the computer has installed and enabled Ethernet network card.
- Before conducting remote configuration, please confirm the route between

Copyright © 3onedata Co., Ltd.

computer and device is reachable.

- Before making a local configuration, make sure that the IP address of the computer and the serial server are on the same subnet.

Note:
While configuring the device for the first time, if it's the local configuration mode, first confirm the network segment of current PC is 1.

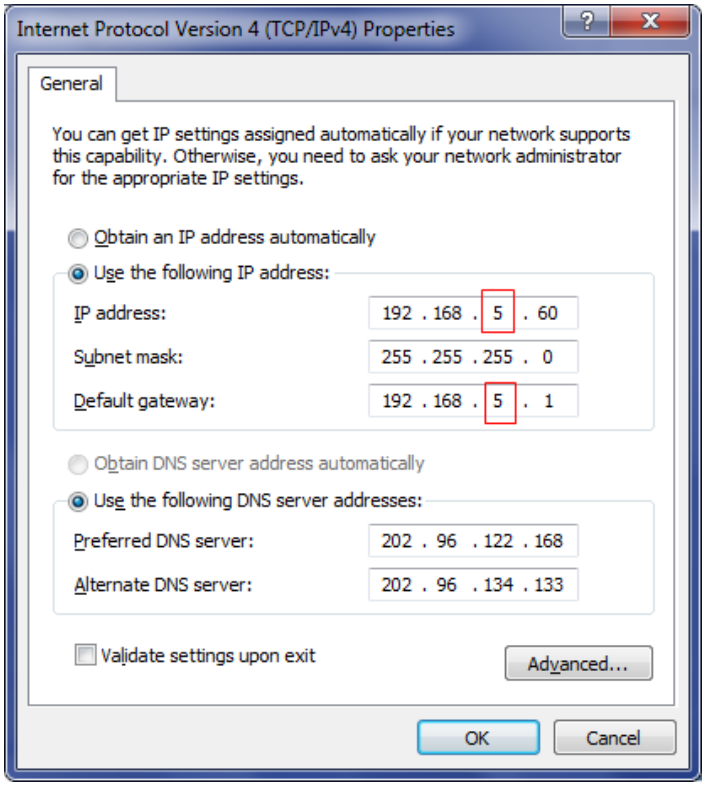
Eg: Assume that the IP address of the current PC is 192.168.5.60, change the network segment "5" of the IP address to "1".

Operation Steps

Amendment steps are as follows:

Step 1 Open "Control Panel> Network Connection> Local Area Connection> Properties> Internet Protocol Version 4 (TCP / IPv4)> Properties".

Step 2 Change the "5" selected by the red frame in the figure to "1".



Step 3 Click "OK", modification is successful.

Step 4 End.

1.2.2 Wireless Access Mode

The default management network address of the device is as follows:

Copyright © 3onedata Co., Ltd.

IP Settings	Default Value
IP address	192.168.1.254
Subnet mask	255.255.255.0

When configuring a device through the Web:

- Please confirm the computer has installed and enabled wireless network card.
- Place the computer on wireless network range of the device.
- Please confirm the IP address of computer is in the same subnet to the device.

Notice

Do not use a proxy server for device IP addresses or network segments

Set the IP address of computer in the same subnet to the device IP address.

Operation Steps

Operation steps of wireless connection are as follows.

Notes

This manual takes the wireless network settings function of Windows 7 system for example.

Step 1 Click wireless icon "" on the lower right corner of the computer, pop up the wireless list box.

Step 2 Choose the device wireless network name in the wireless list box, click "Connect" button.

Note:

The default wireless network name of the device contains frequency band and part of MAC address information, no encryption.

Step 3 End. After successful connection, wireless network displays "Connected".

1.3 Login to the WEB Configuration Interface

Operation Steps

Log in to the WEB configuration interface is as follows:

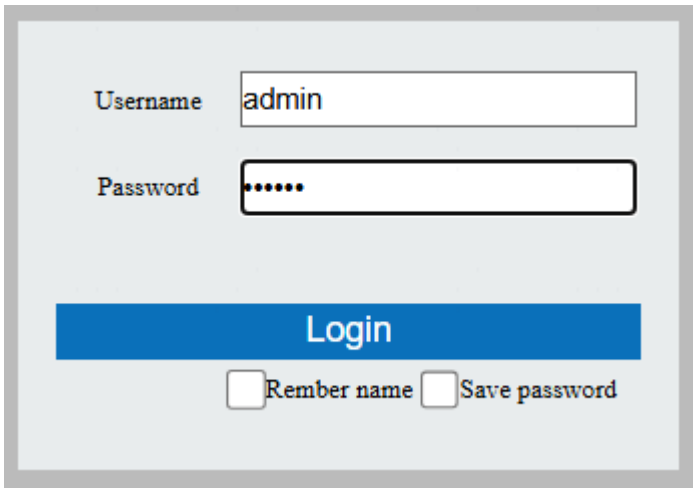
Step 1 Run the computer browser.

Step 2 Enter the address of the device "http://192.168.1.254" in the address bar of the browser.

Step 3 Click the "Enter" key.

Copyright © 3onedata Co., Ltd.

Step 4 Pop-up dialog box as shown below, enter the user name and password in the login window.



Note:

The default username and password are “admin”; please strictly distinguish capital and small letter while entering.

Step 5 Click "Login".

Step 6 End.

After login successfully, user can configure relative parameters and information of WEB interface according to demands.

Notes

After logging in to the device, user can modify the device IP address for convenient usage; if there is no interface operation within 10 minutes, user will need to log in to the device again.

Copyright © 3onedata Co., Ltd.

2 State Information

Function Description

On the "State info" page, user can check the following information:

- System resource utilization;
- Basic information;
- Equipment information;
- SSID/Bridge information;
- WAN information/network information/bridge status;
- WiFi real-time flow (KB/s)

Notes

- In AP/ routing mode, displays "SSID"; In bridge/client/dual-link mode, displays “bridge information”.
- In routing mode, display "WAN Information"; In AP mode, display “Network Information”; In bridge/client/dual-link mode, display “Bridge State”.

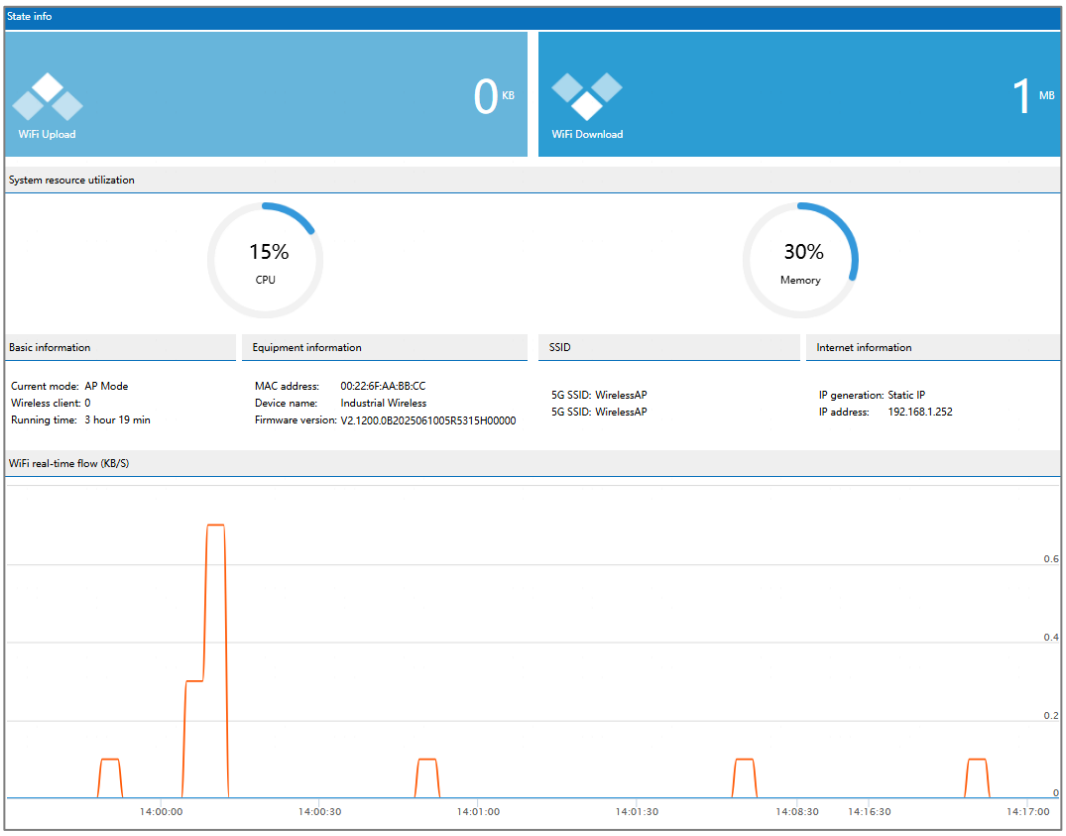
Operation Path

On the navigation bar, select "State info".

Interface Description

State information interface is as follows:

Copyright © 3onedata Co., Ltd.



The main element configuration description of state information interface:

Interface Element	Description
WIFI Upload	**Total upload area** Note: WiFi upload traffic statistics.
WIFI Download	**Total download area** Note: WiFi download traffic statistics.
System resource utilization	**Resource utilization column**
CPU (%)	Device CPU usage rate.
Memory (%)	Device memory usage rate. Note: It will influence the device performance if the program takes up too much memory.
Basic information	**Basic information column**
Current mode	Current operation mode of the device.
Wireless client	Wireless client connection number.
Running time	The device running time after power on.
Equipment information	**Equipment information column**

Copyright © 3onedata Co., Ltd.

Interface Element	Description
MAC address	Device MAC address.
Device name	Equipment model name.
Firmware version	Device firmware version.
SSID	**SSID column** Note: In AP/ routing mode, displays "Wireless Information".
2.4G SSID	2.4G wireless network name.
5G SSID	5G wireless network name.
Bridge information	**Bridge information column** Note: In bridge/client/dual-link mode, displays “bridge information”.
SSID	Display the name of the connected SSID Note: In dual-link mode, the names of two SSID would display.
BSSID	Display the information of the connected BSSID. Note: In dual-link mode, the information of two BSSID would display.
WAN information	**WAN information column** Note: In Routing/Wireless NAT mode, "WAN Information” would display.
IP generation	Access mode of the device WAN IP address.
IP address	IP addresses of the device WAN.
WAN information	**Network information bar** Note: In AP mode, "Network Information” displays.
IP generation	Access mode of the device LAN IP address.
IP address	IP addresses of the device LAN.
Bridging status	**Bridging status column** Note: In Routing/wireless NAT mode, there is no “Bridging Status”.
Link status	Display the connection status of bridging.
Signal intensity	Display the signal strength of bridging.
Current channel	Display the current channel of the bridging.
Connection speed	Display the connection rate of bridging.
WiFi real-time flow (KB/s)	**WiFi real-time flow (KB/s) column.**
WiFi real-time flow (KB/s)	WiFi real-time flow monitoring view. • Upload: the blue line represents device’s rate changes of wireless upload traffic. • Download: the orange line represents device’s rate

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	changes of wireless download traffic.

Copyright © 3onedata Co., Ltd.

3 Work Mode

Function Description

On the "Work Mode" page, user can select the working mode according to the site needs, and then complete the mode setting step by step according to the guidance.

- Route;
- AP;
- Bridge;
- Client;
- Dual-link.

Notes

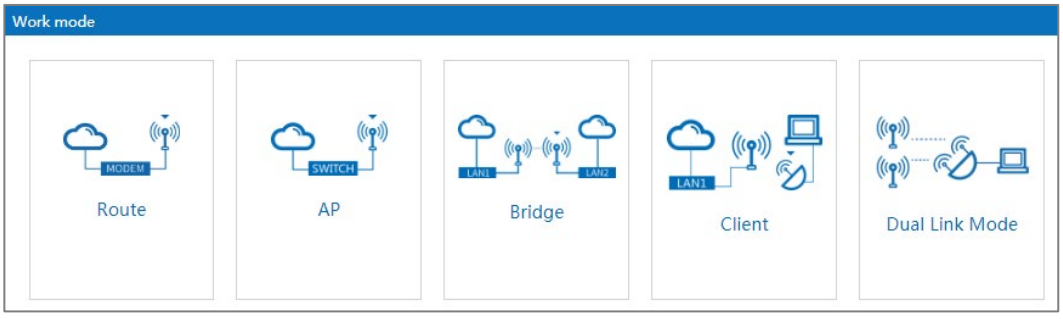
This series of devices support different modes due to 2E2E dual-frequency devices support dual link mode, and 2E single-frequency devices do not support dual link mode.

Operation Path

Click: "Work Mode".

Interface Description

Work mode interface is as follows:



The main element configuration description of work mode interface:

Copyright © 3onedata Co., Ltd.

Interface Element	Description
Route	Under the route mode, the device WAN port can be connected to WAN via PPPoE dial-up, static IP and dynamic acquisition; the LAN port can be connected to LAN and provides wireless access point. Note: When the data is transmitted from one subnet to another subnet or WAN, it can be accomplished via the device route function.
AP	Under AP mode, the device can be used as a wireless access point, the equivalent of the wireless switch.
Bridge	Under the bridge mode, the device will convert received wireless signal to cable signal and wireless signal.
Client	Under the client mode, the device will convert received wireless signal to cable signal.
Dual Link Mode	In the dual-link mode, the device converts the received wireless signal into wired signal. It supports dual-link client, and can realize dual-frequency seamless roaming.

3.1 Route

Under the route mode, the device WAN port can be connected to the WAN via PPPoE dial-up, static IP and dynamic acquisition. Under this mode, LAN port and wireless signal are in the same VLAN, the LAN port defaults to enable DHCP server function.

PPPoE (PPP Over Ethernet) carries PPP (Point to Point Protocol) on the Ethernet. It is a technology that provides access services for hosts on the Ethernet through a remote access device, and can control and charge each accessed host.

The quick configuration of route mode of 2E single-frequency devices mainly includes four configuration links:

- WAN settings
- LAN settings
- Wireless Settings
- Finish

The quick configuration of route mode of 2E2E dual-frequency devices mainly includes five configuration links:

- WAN settings
- LAN settings

Copyright © 3onedata Co., Ltd.

- Wireless settings 1
- Wireless settings 2
- Finish

“Wireless setting” of 2E single-frequency device is similar to “Wireless setting 1” or “Wireless setting 2” of 2E2E dual-frequency device, and it is explained in chapters according to the five configuration links of 2E2E dual-frequency device.

3.1.1 WAN Settings

Function Description

On the "WAN Settings" page of route mode, WAN port can be connected to WAN via three methods:

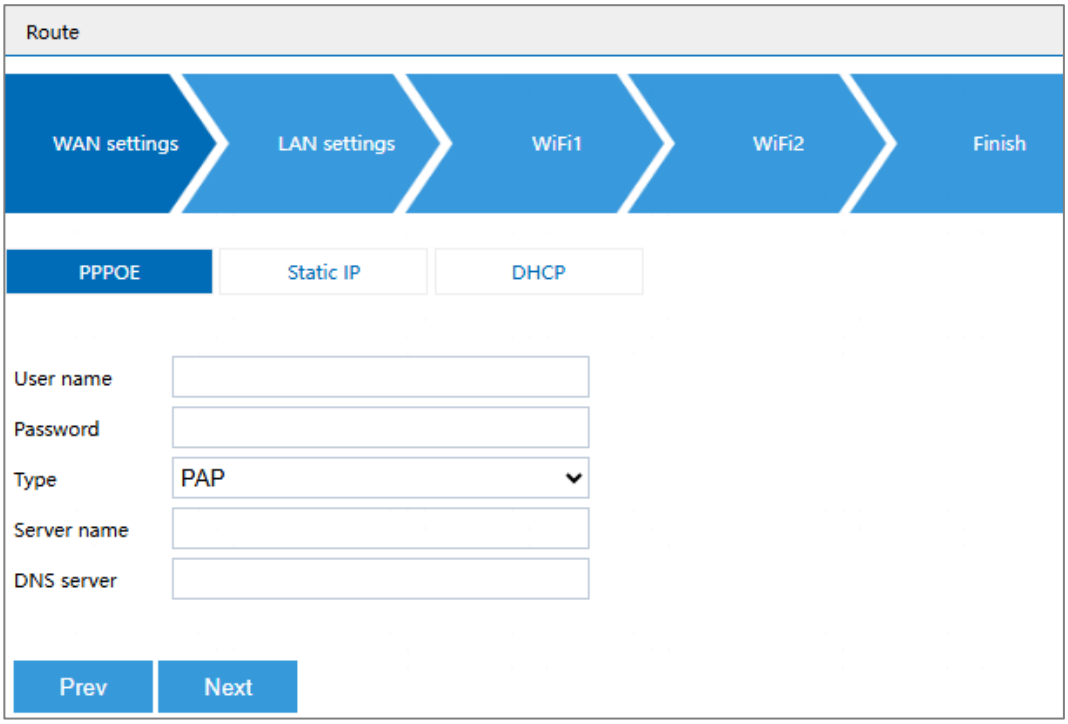
- PPPoE;
- Static IP;
- DHCP;

Operation Path

Please open in order: "Work mode > Route".

Interface Description 1: PPPoE

PPPoE interface is as follows:



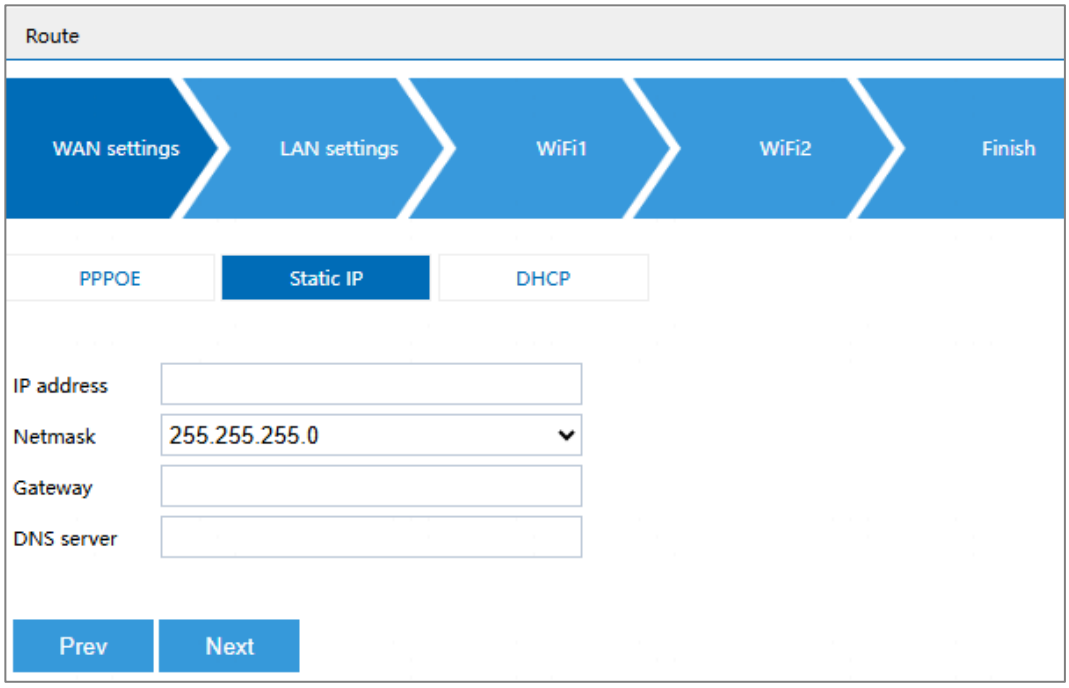
The main element configuration description of PPPoE interface:

Copyright © 3onedata Co., Ltd.

Interface Element	Description
PPPoE	PPPoE tab, it supports PPPoE to achieve Internet access.
Username	User name of PPPoE connection. Note: User name, password and service name are provided by network provider.
Password	Password of PPPoE connection. Note: User name, password and service name are provided by network provider.
Type	The type of PPPoE dialing: • PAP: Password Authentication Protocol, which sends user name or password over the network; • CHAP: Challenge Handshake Authentication Protocol, it only transmits user name; • PAP/CHAP: uses Password Authentication Protocol or Challenge Handshake Authentication Protocol.
Server name	Server name, not fill if network provider doesn't supply. Note: User name, password and service name are provided by network provider.
DNS server	The DNS server address provided by network provider or WAN.

Interface Description 2: Static IP

Static IP interface is as follows:



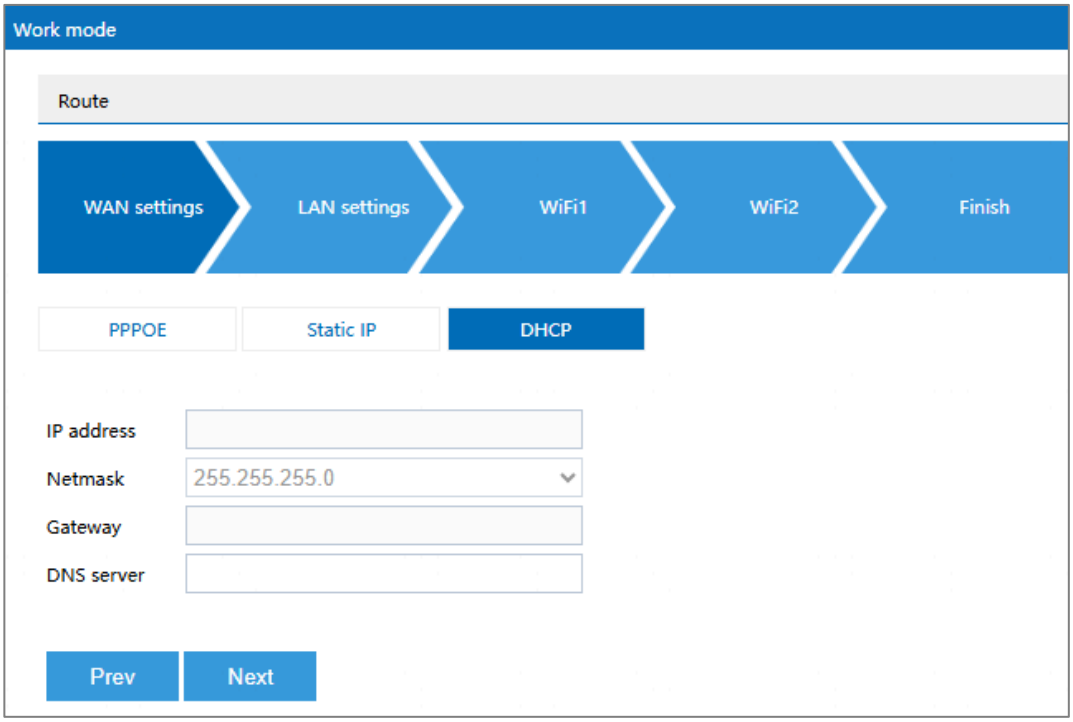
Copyright © 3onedata Co., Ltd.

The main element configuration description of static IP interface:

Interface Element	Description
Static IP	Static IP tab, network information configuration of device WAN port.
IP address	The fixed IP address provided by network provider or WAN.
Netmask	Drop-down list of netmask.
Gateway	Default gateway address provided by network provider or WAN.
DNS server	The DNS server address provided by network provider or WAN.

Interface Description 3: DHCP

DHCP interface is as follows:



Main elements configuration description of DHCP interface:

Interface Element	Description
DHCP	In the dynamic acquisition tab, the network information of the device WAN port is automatically obtained. Note: The device automatically acquires the network address information distributed by network provider or WAN.
IP address	IP address automatically distributed by network provider or WAN.

Copyright © 3onedata Co., Ltd.

Interface Element	Description
Netmask	The subnet mask automatically distributed by network provider or WAN.
Gateway	Gateway address automatically distributed by network provider or WAN.
DNS server	DNS server address. Note: The priority level of manually setting DNS server address is higher than the one of automatically acquired DNS server address.

3.1.2 LAN Settings

Function Description

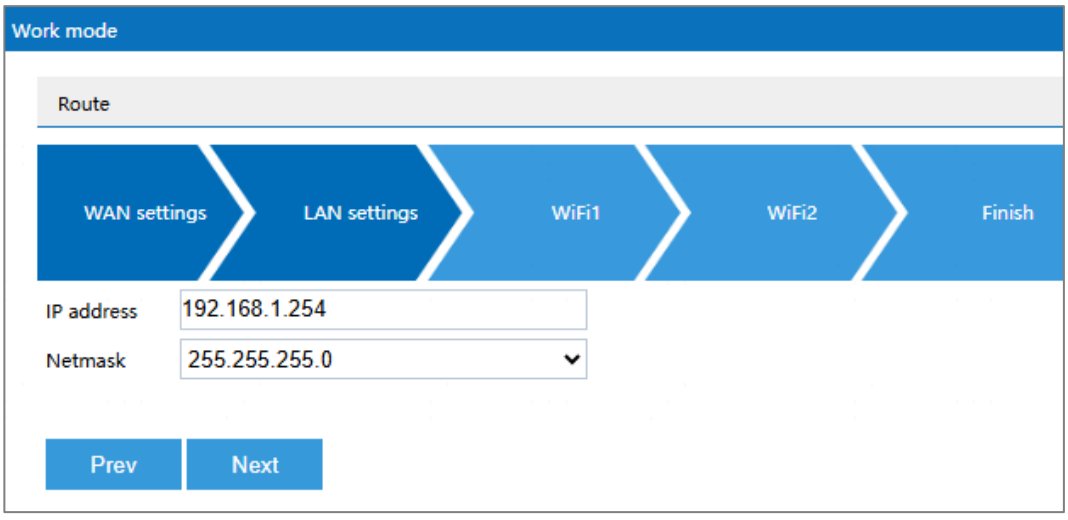
On the "LAN Settings" page of route mode, user can configure the IP address and subnet mask of LAN.

Operation Path

Please open in order: "Work mode > Route".

Interface Description

LAN settings interface is as follows:



The main element configuration description of LAN settings interface:

Interface Element	Description
IP address	IP address information of LAN.
Netmask	Drop-down list of netmask.

Copyright © 3onedata Co., Ltd.

3.1.3 WiFi 1

Function Description

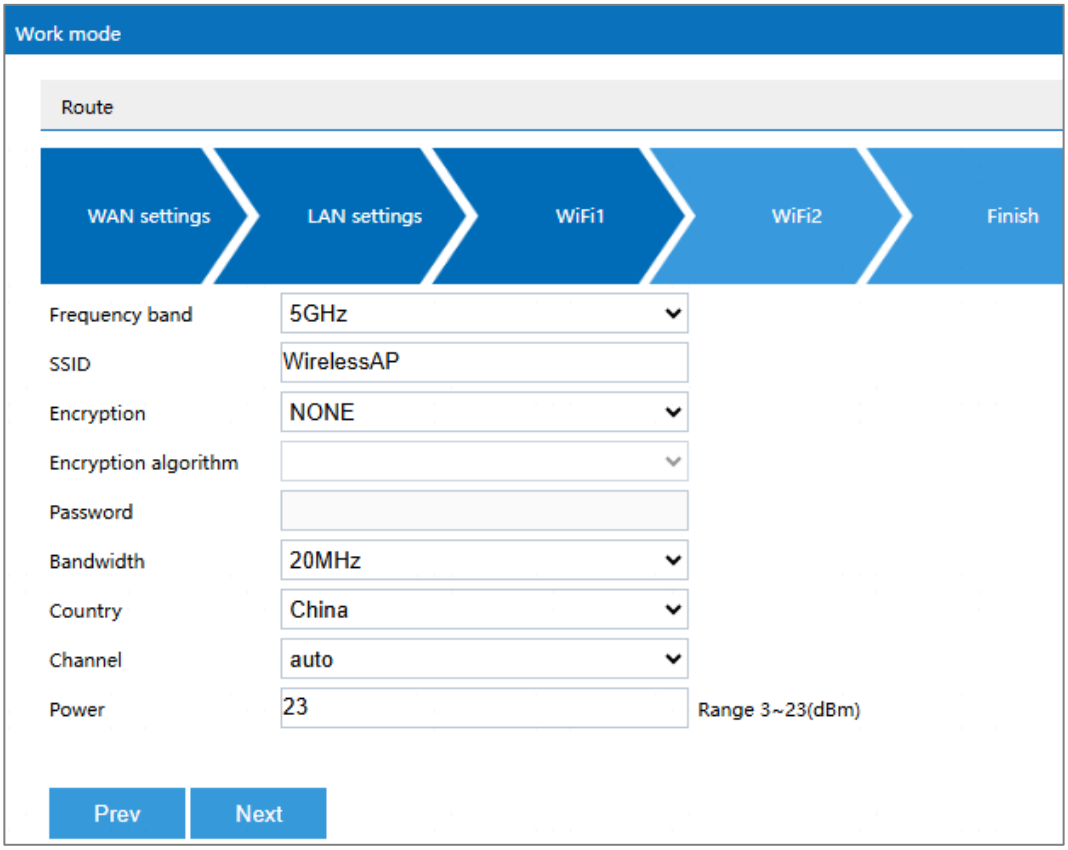
On the "WiFi 1" page of route mode, user can set the wireless parameters of RF1.

Operation Path

Please open in order: "Work mode > Route".

Interface Description

The WiFi 1 interface is as follows:



Main elements configuration descriptions of Wireless Settings 1 interface:

Interface Element	Description
Frequency band	The wireless frequency band corresponding to the current wireless setting, the options are as follows: • 2.4GHz • 5GHz
SSID	SSID name of wireless network, it supports 1-32 characters.
Encryption	Encryption mode of wireless network, options as follows: • No encryption; • WPA2: WiFi Protected Access II suits for the individual or

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	average family network. It adopts pre-shared key mode and supports TKIP (Temporal Key Integrity Protocol) and AES (Advanced Encryption Standard) encryption modes. • WPA/WPA2: mixed mode of WPA and WPA2, it uses WPA or WPA2 encryption algorithm. • WPA3: the third version of Wi-Fi protected access, with further security improvements over WPA2, longer encryption keys, and SAE authentication. • WPA2/WPA3: mixed mode of WPA2 and WPA3, it uses WPA2 or WPA3 encryption algorithm. Note: WPA2/WPA3 only supports personal edition and doesn't support enterprise edition currently. Other encryption algorithms are supported by both of them.
Encryption algorithm	Encryption algorithm of wireless network, options as follows: • AES (CCMP): advanced encryption standard; • TKIP/AES: the key integrates 2113 protocol or advanced encryption standard temporarily. Note: When the encryption method is WPA2/WPA3 and WPA3, only AES(CCMP) encryption algorithm is supported.
Password	Password of wireless network, it supports 8-63 characters. Note: Wireless password doesn’t support blanks. It represents no encryption for wireless network if no password is filled in.
Bandwidth	Wireless network channel bandwidth, options are as follows: • 20MHz; • 40MHz.
Country	Applied countries and regions of wireless network. Options are as follows: • China; • USA. Note: Different country opens different channels.
Channel	Working channel of 2.4G wireless network, options are as follows: • Auto: channel self-adaptation; • 1: main frequency band 2412MHz, frequency range 2401~2423MHz; • 2: main frequency band 2417MHz, frequency range 2406~2428MHz; • 3: main frequency band 2422MHz, frequency range 2411~2433MHz;

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	• 4: main frequency band 2427MHz, frequency range 2416~2438MHz; • 5: main frequency band 2432MHz, frequency range 2421~2443MHz; • 6: main frequency band 2437MHz, frequency range 2426~2448MHz; • 7: main frequency band 2442MHz, frequency range 2431~2453MHz; • 8: main frequency band 2447MHz, frequency range 2436~2458MHz; • 9: main frequency band 2452MHz, frequency range 2441~2463MHz; • 10: main frequency band 2457MHz, frequency range 2446~2468MHz; • 11: main frequency band 2462MHz, frequency range 2451~2473MHz; • 12: main frequency band 2467MHz, frequency range 2456~2478MHz, this frequency band is not open in America, so it's temporarily unavailable; • 13: main frequency band 2472MHz, frequency range 2461~2483MHz, this frequency band is not open in America, so it's temporarily unavailable; Working channel of 5G wireless network, options are as follows: • Auto: channel self-adaptation; • 36: main frequency band 5180MHz, frequency range 5170~5190MHz; • 40: main frequency band 5200MHz, frequency range 5190~5210MHz; • 44: main frequency band 5220MHz, frequency range 5210~5230MHz; • 48: main frequency band 5230MHz, frequency range 5210~5250MHz; • 52: main frequency band 5260MHz, frequency range 5250~5270MHz; • 56: main frequency band 5280MHz, frequency range 5270~5290MHz; • 60: main frequency band 5300MHz, frequency range 5290~5310MHz; • 64: main frequency band 5320MHz, frequency range 5310~5330MHz;

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	• 149: main frequency band 5745MHz, frequency range 5735~5755MHz; • 153: main frequency band 5765MHz, frequency range 5755~5775MHz; • 157: main frequency band 5785MHz, frequency range 5775~5795MHz; • 161: main frequency band 5805MHz, frequency range 5795~5815MHz; • 165: main frequency band 5825MHz, frequency range 5815~5835MHz. Note: • Different frequency bands and countries support different options. • In order to improve the network performance, please choose unused channel in the device working environment.
Power	Transmission power of device wireless signal. Note: • Greater the transmitted power, better the transmittability, longer the transmission range, but stronger the interference; • Different device may have different transmitted power range.

3.1.4 WiFi 2

Function Description

On the "WiFi 2" page of route mode, user can set the wireless parameters of RF2.

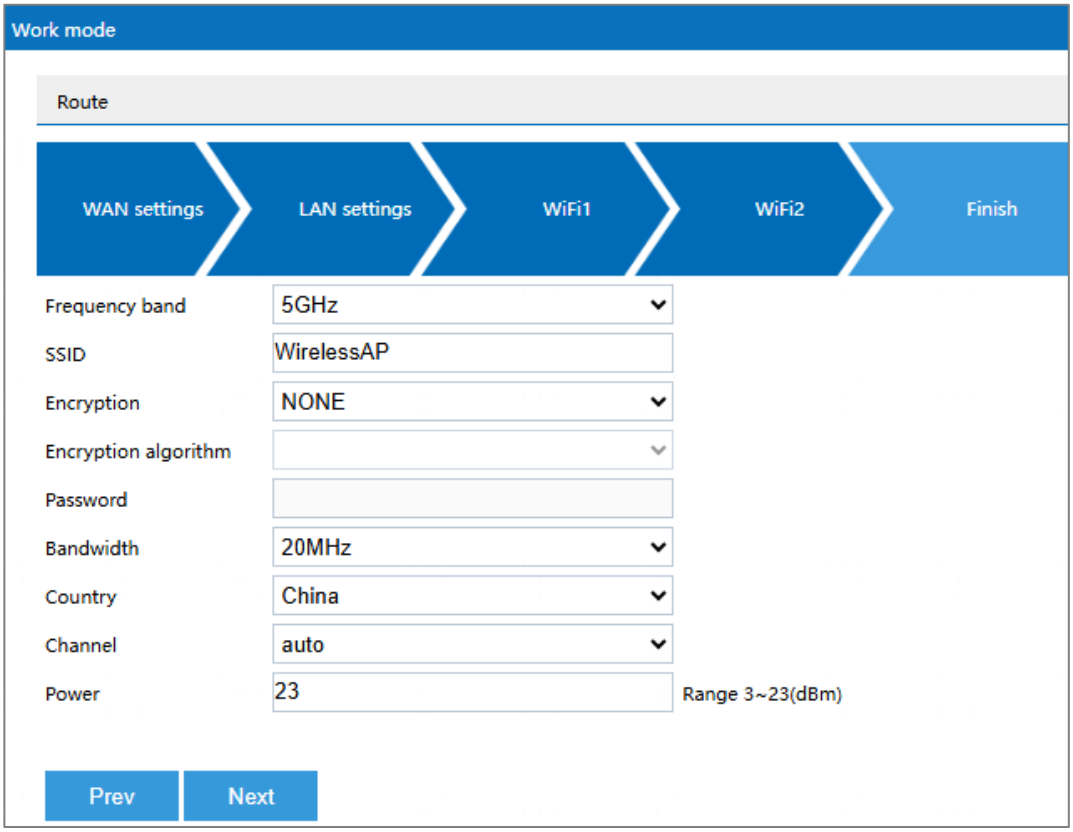
Operation Path

Please open in order: "Work mode > Route".

Interface Description

The WiFi 2 interface is as follows:

Copyright © 3onedata Co., Ltd.



Main elements configuration descriptions of WiFi 2 interface:

Interface Element	Description
Frequency band	The wireless frequency band corresponding to the current wireless setting, the options are as follows: • 2.4GHz • 5GHz
SSID	SSID name of wireless network, it supports 1-32 characters.
Encryption	Encryption mode of wireless network, options as follows: • No encryption; • WPA2: WiFi Protected Access II suits for the individual or average family network. It adopts pre-shared key mode and supports TKIP (Temporal Key Integrity Protocol) and AES (Advanced Encryption Standard) encryption modes. • WPA/WPA2: mixed mode of WPA and WPA2, it uses WPA or WPA2 encryption algorithm. • WPA3: the third version of Wi-Fi protected access, with further security improvements over WPA2, longer encryption keys, and SAE authentication. • WPA2/WPA3: mixed mode of WPA2 and WPA3, it uses WPA2 or WPA3 encryption algorithm.

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	Note: WPA2/WPA3 only supports personal edition and doesn't support enterprise edition currently. Other encryption algorithms are supported by both of them.
Encryption algorithm	Encryption algorithm of wireless network, options as follows: • AES (CCMP): advanced encryption standard; • TKIP/AES: the key integrates 2113 protocol or advanced encryption standard temporarily. Note: When the encryption method is WPA2/WPA3 and WPA3, only AES(CCMP) encryption algorithm is supported.
Password	Password of wireless network, it supports 8-63 characters. Note: Wireless password doesn't support blanks. It represents no encryption for wireless network if no password is filled in.
Bandwidth	Channel bandwidth of wireless network, it defaults to 80MHz, options are as follows: • 20MHz; • 40MHz.
Country	Applied countries and regions of wireless network. Options are as follows: • China; • USA. Note: Different country opens different channels.
Channel	Working channel of 2.4G wireless network, options are as follows: • Auto: channel self-adaptation; • 1: main frequency band 2412MHz, frequency range 2401~2423MHz; • 2: main frequency band 2417MHz, frequency range 2406~2428MHz; • 3: main frequency band 2422MHz, frequency range 2411~2433MHz; • 4: main frequency band 2427MHz, frequency range 2416~2438MHz; • 5: main frequency band 2432MHz, frequency range 2421~2443MHz; • 6: main frequency band 2437MHz, frequency range 2426~2448MHz; • 7: main frequency band 2442MHz, frequency range 2431~2453MHz; • 8: main frequency band 2447MHz, frequency range

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	2436~2458MHz; • 9: main frequency band 2452MHz, frequency range 2441~2463MHz; • 10: main frequency band 2457MHz, frequency range 2446~2468MHz; • 11: main frequency band 2462MHz, frequency range 2451~2473MHz; • 12: main frequency band 2467MHz, frequency range 2456~2478MHz, this frequency band is not open in America, so it's temporarily unavailable; • 13: main frequency band 2472MHz, frequency range 2461~2483MHz, this frequency band is not open in America, so it's temporarily unavailable; Working channel of 5G wireless network, options are as follows: • Auto: channel self-adaptation; • 36: main frequency band 5180MHz, frequency range 5170~5190MHz; • 40: main frequency band 5200MHz, frequency range 5190~5210MHz; • 44: main frequency band 5220MHz, frequency range 5210~5230MHz; • 48: main frequency band 5230MHz, frequency range 5210~5250MHz; • 52: main frequency band 5260MHz, frequency range 5250~5270MHz; • 56: main frequency band 5280MHz, frequency range 5270~5290MHz; • 60: main frequency band 5300MHz, frequency range 5290~5310MHz; • 64: main frequency band 5320MHz, frequency range 5310~5330MHz; • 149: main frequency band 5745MHz, frequency range 5735~5755MHz; • 153: main frequency band 5765MHz, frequency range 5755~5775MHz; • 157: main frequency band 5785MHz, frequency range 5775~5795MHz; • 161: main frequency band 5805MHz, frequency range 5795~5815MHz; • 165: main frequency band 5825MHz, frequency range

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	5815~5835MHz; Note: • Different frequency bands and countries support different options. • In order to improve the network performance, please choose unused channel in the device working environment.
Power	Transmission power of device wireless signal. Note: • Greater the transmitted power, better the transmittability, longer the transmission range, but stronger the interference; • Different device may has different transmitted power range.

3.1.5 Finish

Function Description

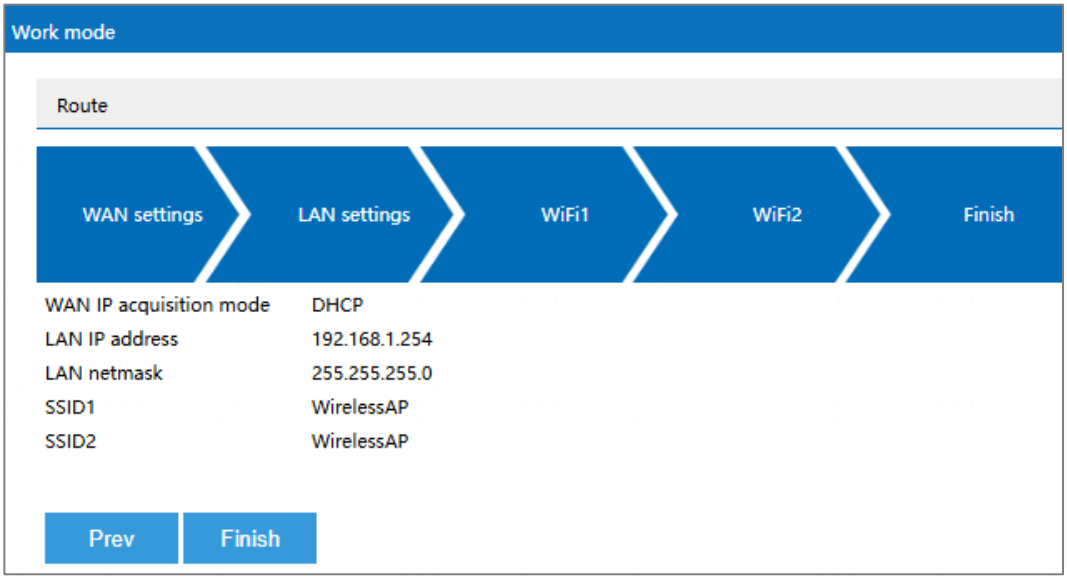
On the "Finish" page of route mode, user can check the main parameters of wireless route mode.

Operation Path

Please open in order: "Work mode > Route".

Interface Description

Finish interface is as follows:



The main element configuration description of finish interface:

Copyright © 3onedata Co., Ltd.

Interface Element	Description
WAN IP acquisition mode	• PPPoE • Static IP • DHCP
LAN IP address	IP address information of LAN.
LAN netmask	Subnet masks information of LAN.
SSID1	SSID name of wireless 1 network.
SSID2	SSID name of wireless 2 network.

3.2 AP

Notes

Only 5T devices (with WAN ports) support routing mode and AP mode.

Under AP mode, the device can be used as a wireless access point, the equivalent of the wireless switch. Under the mode, WAN port, LAN port and wireless signal are all in the same VLAN; LAN port is static IP, DHCP server defaults to closed.

The rapid configuration of AP mode of 2E single-frequency devices mainly includes three configuration links:

- LAN settings
- Wireless Settings
- Finish

The rapid configuration of AP mode of 2E2E dual-frequency devices mainly includes four configuration links:

- LAN settings
- Wireless settings 1
- Wireless settings 2
- Finish

“Wireless setting” of 2E single-frequency device is similar to “Wireless setting 1” or “Wireless setting 2” of 2E2E dual-frequency device, and it is explained in chapters according to the four configuration links of 2E2E dual-frequency device.

Copyright © 3onedata Co., Ltd.

3.2.1 LAN settings

Function Description

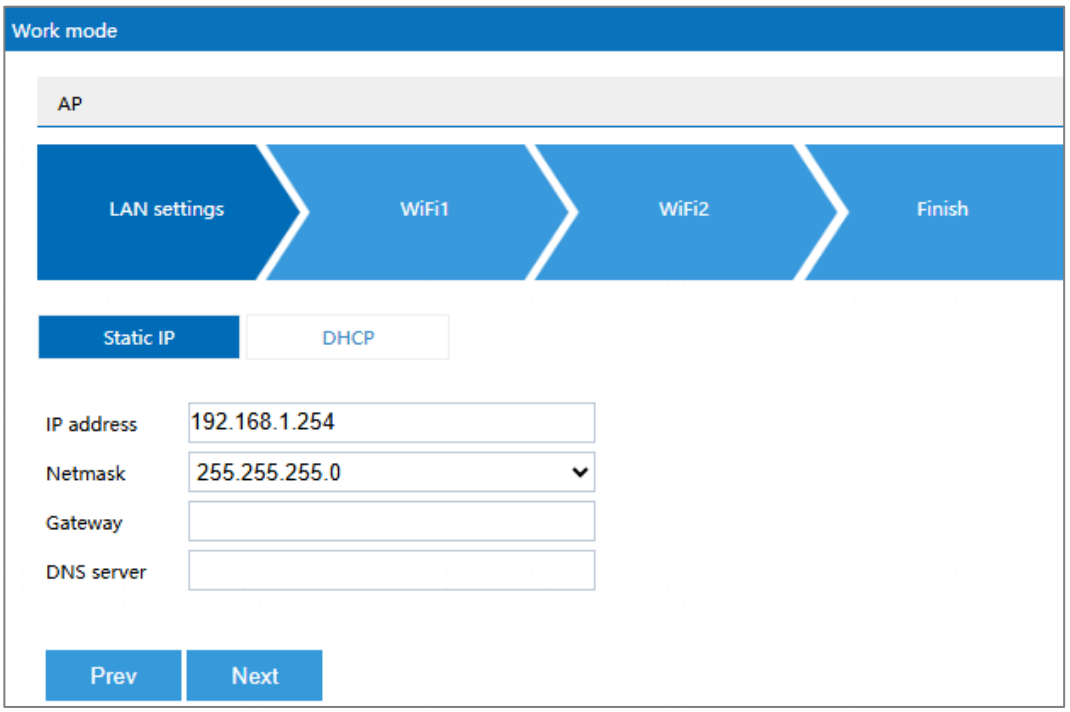
On the "LAN settings" page of AP mode, user can configure the IP address and subnet mask information of LAN.

Operation Path

Please open in order: "Work mode > AP".

Interface Description 1: Static IP

Static IP interface is as follows:



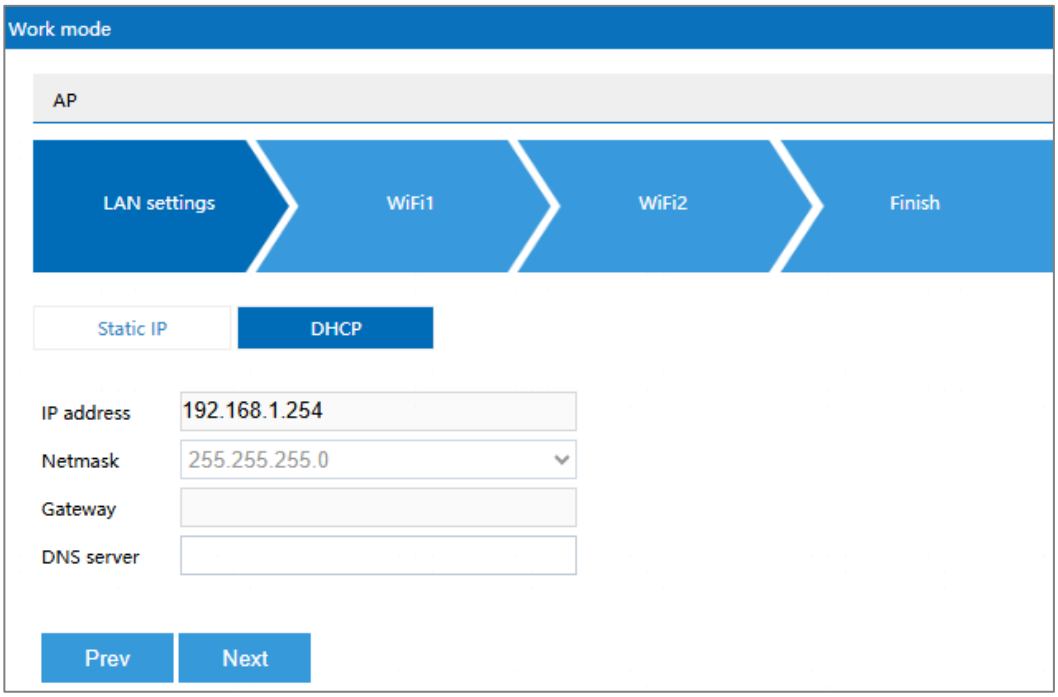
The main element configuration description of static IP interface:

Interface Element	Description
Static IP	Static IP tab.
IP address	IP address information of LAN.
Netmask	Drop-down list of netmask.
Gateway	Default gateway address of LAN.
DNS server	DNS server address.

Interface Description 2: DHCP

DHCP interface is as follows:

Copyright © 3onedata Co., Ltd.



Main elements configuration description of DHCP interface:

Interface Element	Description
DHCP	DHCP tab.
IP address	Dynamic acquisition of IP addresses information of LAN.
Netmask	Automatic acquisition of subnet masks information of LAN.
Gateway	Automatically acquired default gateway address.
DNS server	DNS server address. Note: The priority level of manually setting DNS server address is higher than the one of automatically acquired DNS server address.

3.2.2 WiFi 1

Function Description

On the "WiFi 1" page of AP mode, user can configure the wireless parameters of RF1.

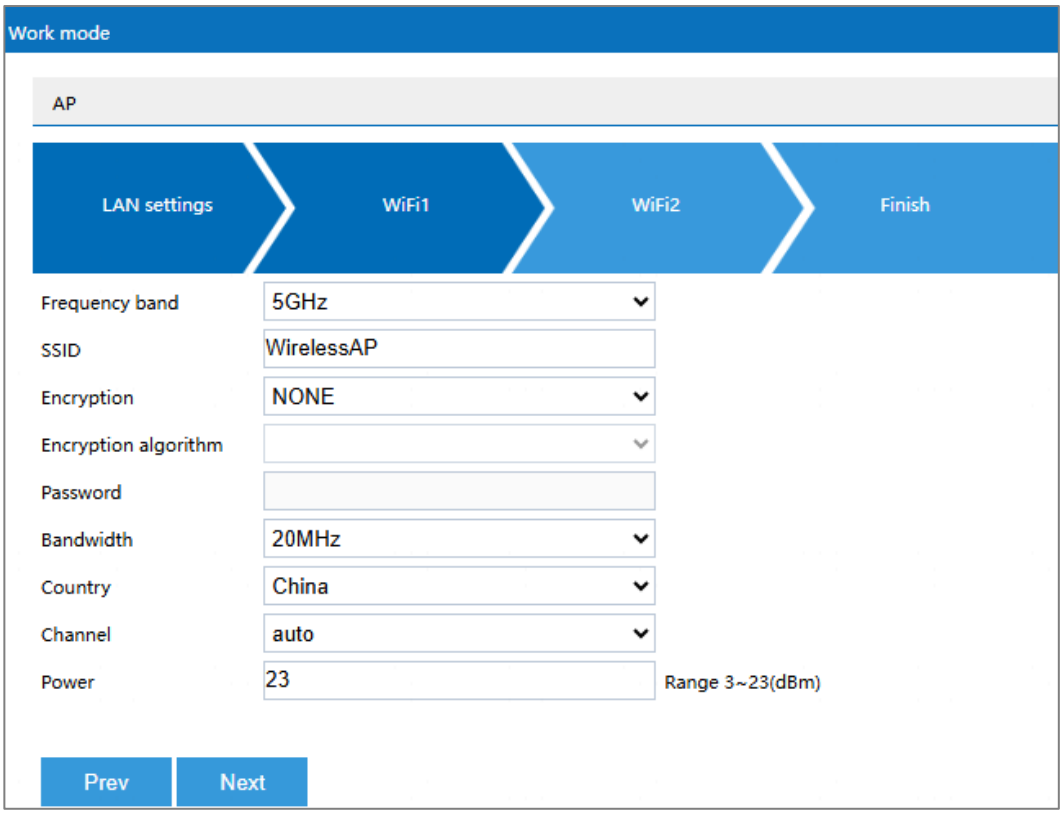
Operation Path

Please open in order: "Work mode > AP".

Interface Description

The WiFi 1 interface is as follows:

Copyright © 3onedata Co., Ltd.



Main elements configuration descriptions of WiFi 1 interface:

Interface Element	Description
Frequency band	The wireless frequency band corresponding to the current wireless setting, the options are as follows: • 2.4GHz • 5GHz
SSID	SSID name of wireless network, it supports 1-32 characters.
Encryption	Encryption mode of wireless network, options as follows: • No encryption; • WPA2: WiFi Protected Access II suits for the individual or average family network. It adopts pre-shared key mode and supports TKIP (Temporal Key Integrity Protocol) and AES (Advanced Encryption Standard) encryption modes. • WPA/WPA2: mixed mode of WPA and WPA2, it uses WPA or WPA2 encryption algorithm. • WPA3: the third version of Wi-Fi protected access, with further security improvements over WPA2, longer encryption keys, and SAE authentication. • WPA2/WPA3: mixed mode of WPA2 and WPA3, it uses WPA2 or WPA3 encryption algorithm. Note:

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	WPA2/WPA3 only supports personal edition and doesn't support enterprise edition currently. Other encryption algorithms are supported by both of them.
Encryption algorithm	Encryption algorithm of wireless network, options as follows: • AES (CCMP): advanced encryption standard; • TKIP/AES: the key integrates 2113 protocol or advanced encryption standard temporarily. Note: When the encryption method is WPA2/WPA3 and WPA3, only AES(CCMP) encryption algorithm is supported.
Password	Password of wireless network, it supports 8-63 characters. Note: Wireless password doesn't support blanks. It represents no encryption for wireless network if no password is filled in.
Bandwidth	Wireless network channel bandwidth, options are as follows: • 20MHz; • 40MHz.
Country	Applied countries and regions of wireless network. Options are as follows: • China; • USA. Note: Different country opens different channels.
Channel	Working channel of 2.4G wireless network, options are as follows: • Auto: channel self-adaptation; • 1: main frequency band 2412MHz, frequency range 2401~2423MHz; • 2: main frequency band 2417MHz, frequency range 2406~2428MHz; • 3: main frequency band 2422MHz, frequency range 2411~2433MHz; • 4: main frequency band 2427MHz, frequency range 2416~2438MHz; • 5: main frequency band 2432MHz, frequency range 2421~2443MHz; • 6: main frequency band 2437MHz, frequency range 2426~2448MHz; • 7: main frequency band 2442MHz, frequency range 2431~2453MHz; • 8: main frequency band 2447MHz, frequency range 2436~2458MHz; • 9: main frequency band 2452MHz, frequency range

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	2441~2463MHz; • 10: main frequency band 2457MHz, frequency range 2446~2468MHz; • 11: main frequency band 2462MHz, frequency range 2451~2473MHz; • 12: main frequency band 2467MHz, frequency range 2456~2478MHz, this frequency band is not open in America, so it's temporarily unavailable; • 13: main frequency band 2472MHz, frequency range 2461~2483MHz, this frequency band is not open in America, so it's temporarily unavailable; Working channel of 5G wireless network, options are as follows: • Auto: channel self-adaptation; • 36: main frequency band 5180MHz, frequency range 5170~5190MHz; • 40: main frequency band 5200MHz, frequency range 5190~5210MHz; • 44: main frequency band 5220MHz, frequency range 5210~5230MHz; • 48: main frequency band 5230MHz, frequency range 5210~5250MHz; • 52: main frequency band 5260MHz, frequency range 5250~5270MHz; • 56: main frequency band 5280MHz, frequency range 5270~5290MHz; • 60: main frequency band 5300MHz, frequency range 5290~5310MHz; • 64: main frequency band 5320MHz, frequency range 5310~5330MHz; • 149: main frequency band 5745MHz, frequency range 5735~5755MHz; • 153: main frequency band 5765MHz, frequency range 5755~5775MHz; • 157: main frequency band 5785MHz, frequency range 5775~5795MHz; • 161: main frequency band 5805MHz, frequency range 5795~5815MHz; • 165: main frequency band 5825MHz, frequency range 5815~5835MHz. Note:

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	• Different frequency bands and countries support different options. • In order to improve the network performance, please choose unused channel in the device working environment.
Power	Transmission power of device wireless signal. Note: • Greater the transmitted power, better the transmittability, longer the transmission range, but stronger the interference; • Different device may have different transmitted power range.

3.2.3 WiFi 2

Function Description

On the "WiFi 2" page of AP mode, user can configure the wireless parameters of RF2.

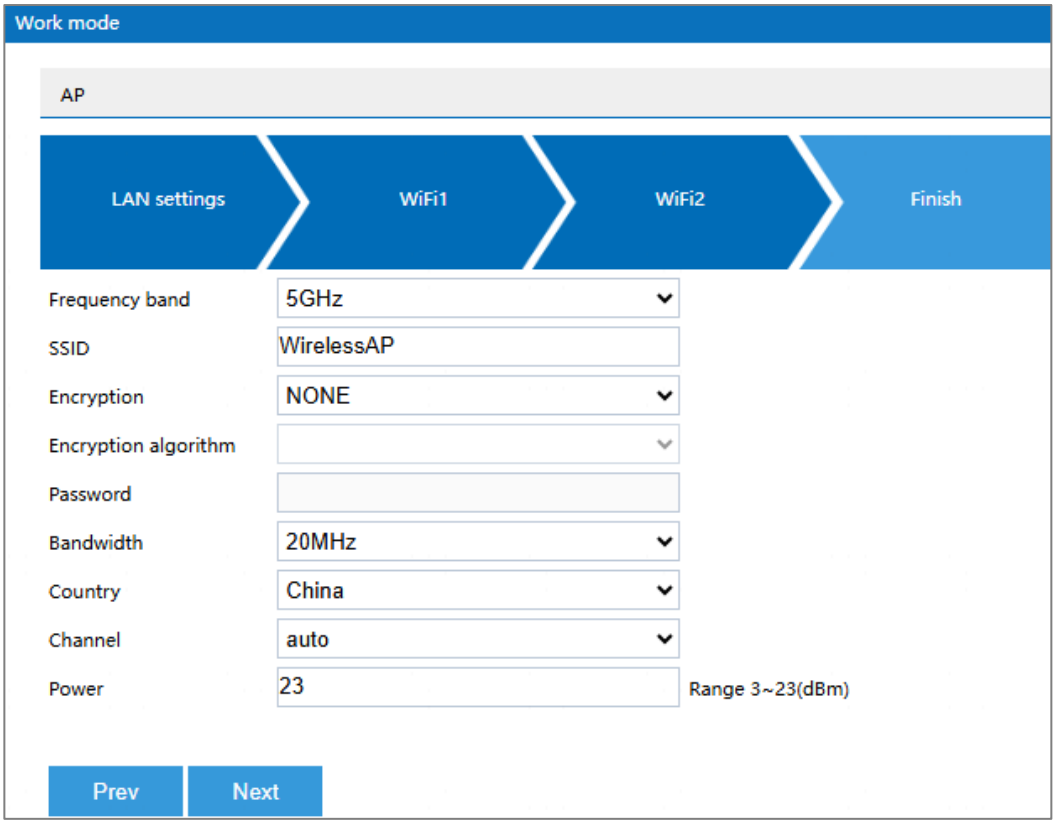
Operation Path

Please open in order: "Work mode > AP".

Interface Description

The WiFi 2 interface is as follows:

Copyright © 3onedata Co., Ltd.



Main elements configuration descriptions of WiFi 2 interface:

Interface Element	Description
Frequency band	The wireless frequency band corresponding to the current wireless setting, the options are as follows: • 2.4GHz • 5GHz
SSID	SSID name of wireless network, it supports 1-32 characters.
Encryption	Encryption mode of wireless network, options as follows: • No encryption; • WPA2: WiFi Protected Access II suits for the individual or average family network. It adopts pre-shared key mode and supports TKIP (Temporal Key Integrity Protocol) and AES (Advanced Encryption Standard) encryption modes. • WPA/WPA2: mixed mode of WPA and WPA2, it uses WPA or WPA2 encryption algorithm. • WPA3: the third version of Wi-Fi protected access, with further security improvements over WPA2, longer encryption keys, and SAE authentication. • WPA2/WPA3: mixed mode of WPA2 and WPA3, it uses WPA2 or WPA3 encryption algorithm. Note:

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	WPA2/WPA3 only supports personal edition and doesn't support enterprise edition currently. Other encryption algorithms are supported by both of them.
Encryption algorithm	Encryption algorithm of wireless network, options as follows: • AES (CCMP): advanced encryption standard; • TKIP/AES: the key integrates 2113 protocol or advanced encryption standard temporarily. Note: When the encryption method is WPA2/WPA3 and WPA3, only AES(CCMP) encryption algorithm is supported.
Password	Password of wireless network, it supports 8-63 characters. Note: Wireless password doesn't support blanks. It represents no encryption for wireless network if no password is filled in.
Bandwidth	Wireless network channel bandwidth, options are as follows: • 20MHz; • 40MHz.
Country	Applied countries and regions of wireless network. Options are as follows: • China; • USA. Note: Different country opens different channels.
Channel	Working channel of 2.4G wireless network, options are as follows: • Auto: channel self-adaptation; • 1: main frequency band 2412MHz, frequency range 2401~2423MHz; • 2: main frequency band 2417MHz, frequency range 2406~2428MHz; • 3: main frequency band 2422MHz, frequency range 2411~2433MHz; • 4: main frequency band 2427MHz, frequency range 2416~2438MHz; • 5: main frequency band 2432MHz, frequency range 2421~2443MHz; • 6: main frequency band 2437MHz, frequency range 2426~2448MHz; • 7: main frequency band 2442MHz, frequency range 2431~2453MHz; • 8: main frequency band 2447MHz, frequency range 2436~2458MHz; • 9: main frequency band 2452MHz, frequency range

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	2441~2463MHz; • 10: main frequency band 2457MHz, frequency range 2446~2468MHz; • 11: main frequency band 2462MHz, frequency range 2451~2473MHz; • 12: main frequency band 2467MHz, frequency range 2456~2478MHz, this frequency band is not open in America, so it's temporarily unavailable; • 13: main frequency band 2472MHz, frequency range 2461~2483MHz, this frequency band is not open in America, so it's temporarily unavailable; Working channel of 5G wireless network, options are as follows: • Auto: channel self-adaptation; • 36: main frequency band 5180MHz, frequency range 5170~5190MHz; • 40: main frequency band 5200MHz, frequency range 5190~5210MHz; • 44: main frequency band 5220MHz, frequency range 5210~5230MHz; • 48: main frequency band 5230MHz, frequency range 5210~5250MHz; • 52: main frequency band 5260MHz, frequency range 5250~5270MHz; • 56: main frequency band 5280MHz, frequency range 5270~5290MHz; • 60: main frequency band 5300MHz, frequency range 5290~5310MHz; • 64: main frequency band 5320MHz, frequency range 5310~5330MHz; • 149: main frequency band 5745MHz, frequency range 5735~5755MHz; • 153: main frequency band 5765MHz, frequency range 5755~5775MHz; • 157: main frequency band 5785MHz, frequency range 5775~5795MHz; • 161: main frequency band 5805MHz, frequency range 5795~5815MHz; • 165: main frequency band 5825MHz, frequency range 5815~5835MHz; Note:

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	• Different frequency bands and countries support different options. • In order to improve the network performance, please choose unused channel in the device working environment.
Power	Transmission power of device wireless signal. Note: • Greater the transmitted power, better the transmittability, longer the transmission range, but stronger the interference; • Different device may have different transmitted power range.

3.2.4 Finish

Function Description

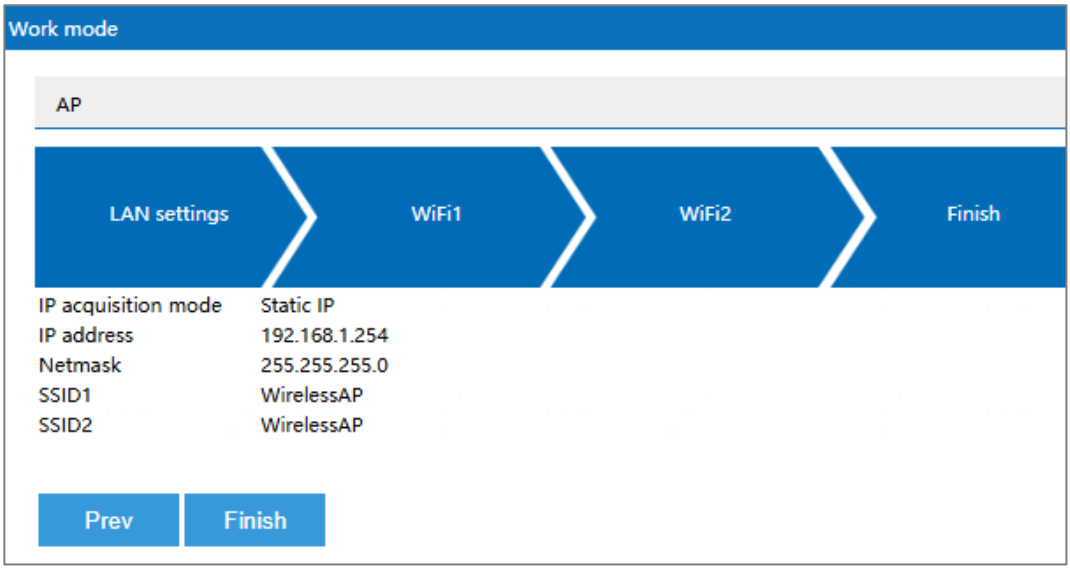
On the "Finish" page of AP mode, user can check the main parameters of AP mode.

Operation Path

Please open in order: "Work mode > AP".

Interface Description

Finish interface is as follows:



The main element configuration description of finish interface:

Interface Element	Description
IP acquisition mode.	• Static IP • DHCP
IP address	IP address information of LAN.

Copyright © 3onedata Co., Ltd.

Interface Element	Description
Netmask	Subnet masks information of LAN.
SSID1	SSID name of wireless 1 network.
SSID2	SSID name of wireless 2 network.

3.3 Bridge

Under the bridge mode, the device will convert received wireless signal to cable signal and a wireless access point signal. Under the mode, WAN port, LAN port and wireless signal are all in the same VLAN, DHCP server defaults to closed.

Notice

When WDS (Wireless Distribution System) wireless bridging is used for bridging connection, WDS function should be supported and turned on in the parent Wireless network.

The rapid configuration of bridge mode of 2E single-frequency devices mainly includes five configuration links:

- Connection Mode
- WAN settings

  Note:
  External network settings are only supported when the connection mode is "Wireless NAT".
- LAN settings
- Connection Settings
- Wireless Settings
- Finish

The rapid configuration of bridge mode of 2E2E dual-frequency devices mainly includes six configuration links:

- Connection Mode
- WAN settings

  Note:
  External network settings are only supported when the connection mode is "Wireless NAT".
- LAN settings
- Connection Settings
- Wireless settings 1
- Wireless settings 2
- Finish

“Wireless setting” of 2E single-frequency device is similar to “Wireless setting 1” or “Wireless setting 2” of 2E2E dual-frequency device, and it is explained in chapters according to the six configuration links of 2E2E dual-frequency device.

Copyright © 3onedata Co., Ltd.

3.3.1 Connection Mode

Function Description

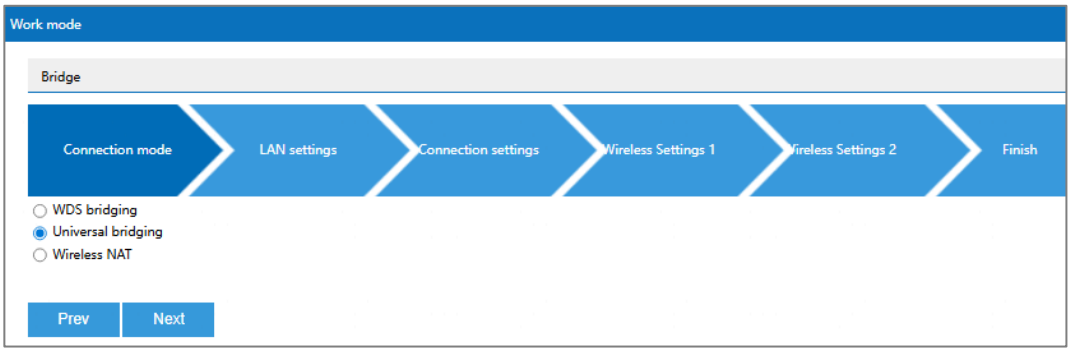
On the "Connection Mode" page of Bridge mode, user can choose universal bridging or WDS bridging.

Operation Path

Please open in order: "Work mode > Bridge".

Interface Description

The connection mode interface is as follows:



The main element configuration description of connection mode interface:

Interface Element	Description
WDS bridging	WDS (Wireless Distribution System) bridging is adopted. Note: In WDS bridging mode, the transmitted data is transparently transmitted. WDS bridging is recommended if the device WDS of the same brand or each supplier are compatible.
Universal bridging	Universal bridging is adopted. Note: In the universal bridging mode, the forwarding data is forwarded through the device agent, which is compatible with all kinds of supplier devices. However, the proxy forwarding mechanism hides the MAC address of the real wireless client, which is not suitable for the network environment with strict requirements on MAC address.
Wireless NAT	Wireless NAT(Network Address Translation) is adopted for connection. Note: Under the wireless NAT connection mode, the device wireless can connect to the external network via PPPoE dial-up, static IP and dynamic acquisition; the LAN port can be connected to LAN.

Copyright © 3onedata Co., Ltd.

3.3.2 WAN Settings

Function Description

Notice

External network settings are only supported when the connection mode is "Wireless NAT".

On the "WAN Settings" page of client mode(wireless NAT), Wireless can be connected to WAN via three methods:

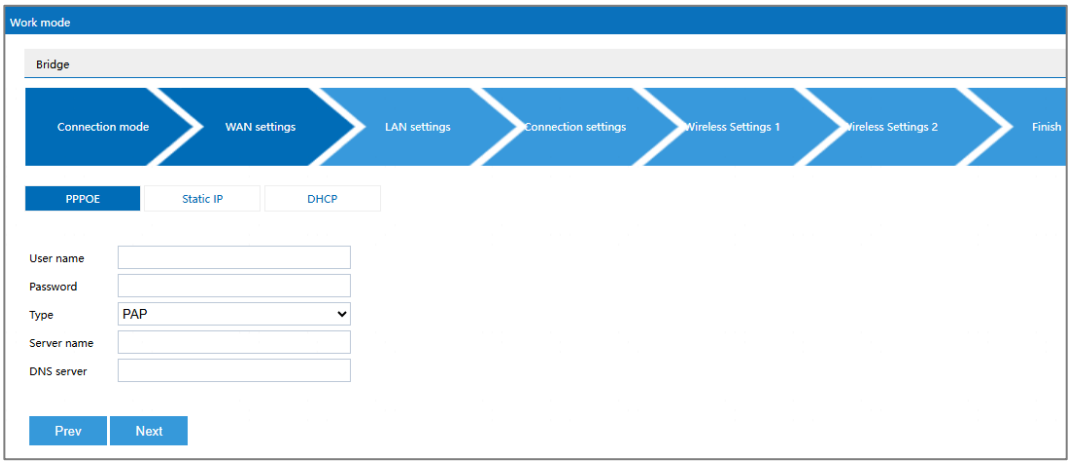
- PPPoE;
- Static IP;
- DHCP.

Operation Path

Please open in order: "Work mode > Client".

Interface Description 1: PPPoE

PPPoE interface is as follows:



The main element configuration description of PPPoE interface:

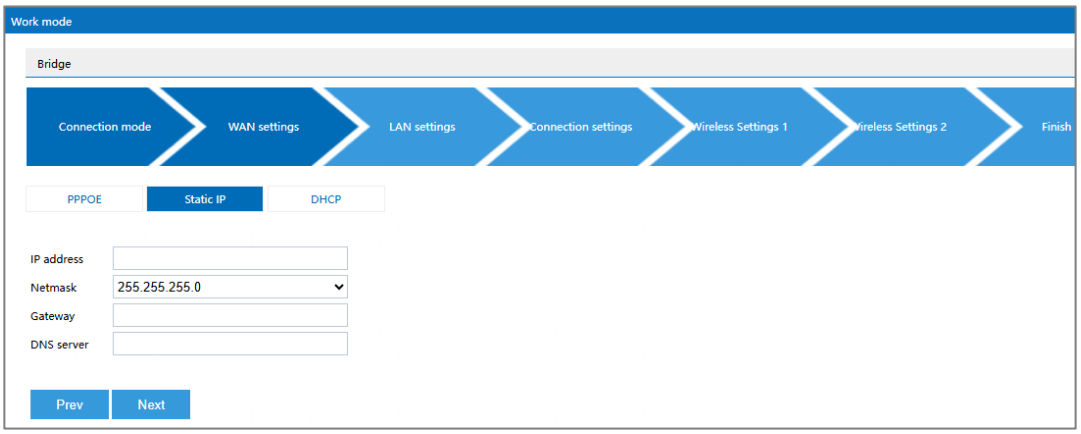
Interface Element	Description
PPPoE	Click the "PPPoE Dialing" button to dial through the point-to-point protocol on Ethernet to realize Internet access.
Username	User name of PPPoE connection. Note: User name, password and service name are provided by network provider.
Password	Password of PPPoE connection. Note:

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	User name, password and service name are provided by network provider.
Type	The type of PPPoE dialing: • PAP: Password Authentication Protocol, which sends user name or password over the network; • CHAP: Challenge Handshake Authentication Protocol, it only transmits user name; • PAP/CHAP: uses Password Authentication Protocol or Challenge Handshake Authentication Protocol.
Server name	Server name, not fill if network provider doesn't supply. Note: User name, password and service name are provided by network provider.
DNS server	The DNS server address provided by network provider or WAN.

Interface Description 2: Static IP

Static IP interface is as follows:



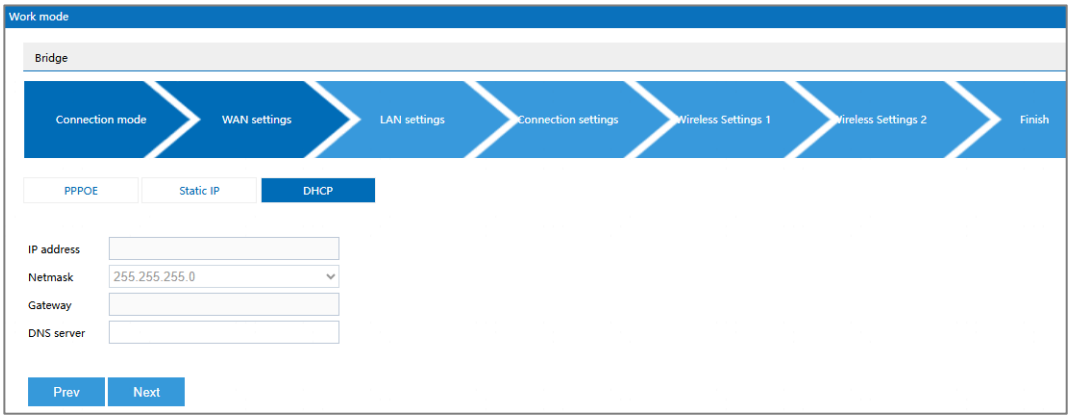
The main element configuration description of static IP interface:

Interface Element	Description
Static IP	Click the "Static IP" button to configure the WAN network information of the device.
IP address	The fixed IP address provided by network provider or WAN.
Netmask	The subnet mask provided by network provider or LAN.
Gateway	Default gateway address provided by network provider or WAN.
DNS server	The DNS server address provided by network provider or WAN.

Copyright © 3onedata Co., Ltd.

Interface Description 3: DHCP

DHCP interface is as follows:



Main elements configuration description of DHCP interface:

Interface Element	Description
DHCP	Click the "dynamic acquisition" button to automatically acquire the WAN port network information of the device. Note: The device automatically acquires the network address information distributed by network provider or WAN.
IP address	IP address automatically distributed by network provider or WAN.
Netmask	The subnet mask automatically distributed by network provider or WAN.
Gateway	Gateway address automatically distributed by network provider or WAN.
DNS server	DNS server address. Note: The priority level of manually setting DNS server address is higher than the one of automatically acquired DNS server address.

3.3.3 LAN Settings

Function Description

On the "LAN settings" page of bridge mode, user can configure the IP address and subnet mask of LAN.

Copyright © 3onedata Co., Ltd.

Notes

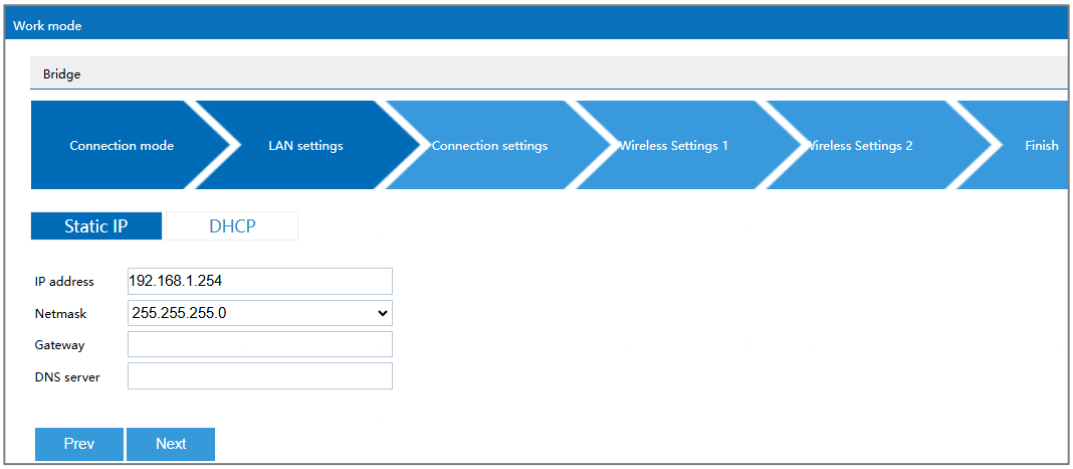
- In universal bridging mode, supports "static IP".
- In WDS bridging mode, supports "static IP" and "DHCP".

Operation Path

Please open in order: "Work mode > Bridge".

Interface Description 1: Static IP

Static IP interface is as follows:



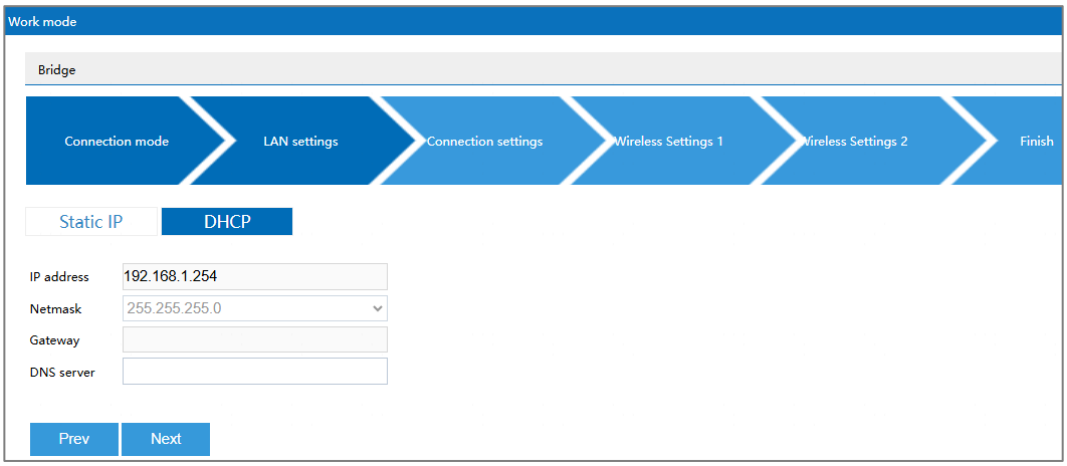
The main element configuration description of static IP interface:

Interface Element	Description
Static IP	Static IP tab.
IP address	IP address information of LAN.
Netmask	Drop-down list of netmask.
Gateway	Default gateway address of LAN.
DNS server	DNS server address.

Interface Description 2: DHCP

DHCP interface is as follows:

Copyright © 3onedata Co., Ltd.



Main elements configuration description of DHCP interface:

Interface Element	Description
DHCP	DHCP tab.
IP address	Dynamic acquisition of IP addresses information of LAN.
Netmask	Automatic acquisition of subnet masks information of LAN.
Gateway	Automatically acquired default gateway address.
DNS server	DNS server address. Note: The priority level of manually setting DNS server address is higher than the one of automatically acquired DNS server address.

3.3.4 Connection Settings

Function Description

On the "Connection Setting" page of Bridge mode, user can configure the parameters of bridging superior wireless network.

Operation Path

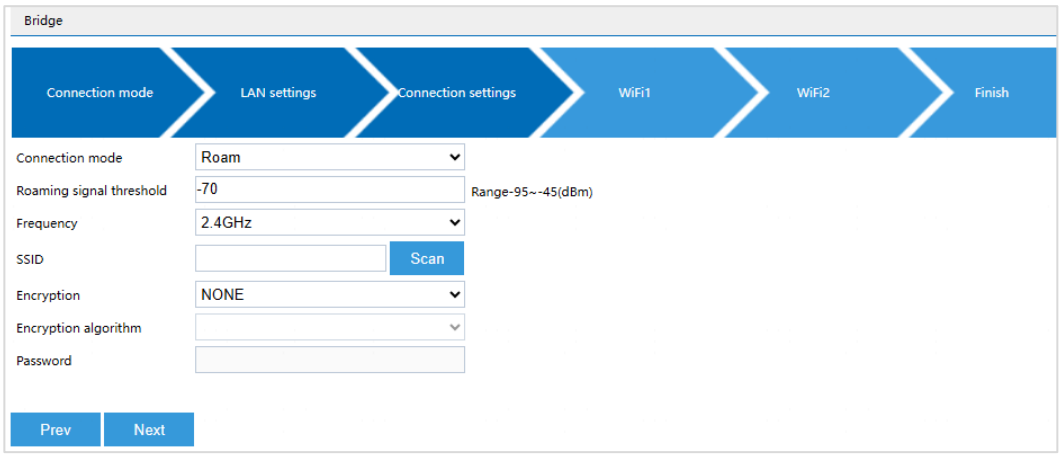
Please open in order: "Work mode > Bridge".

Interface Description

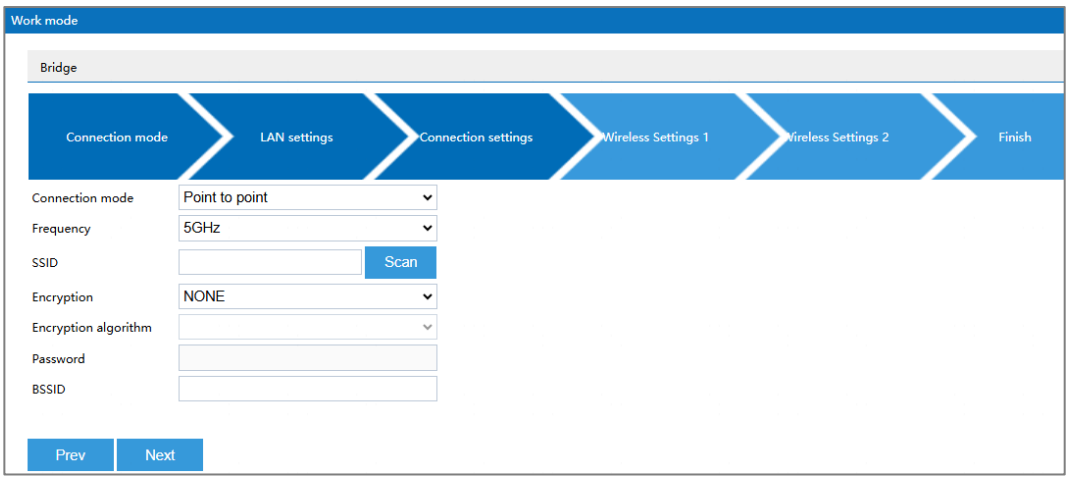
Connection setting interface is as follows:

Roaming Page:

Copyright © 3onedata Co., Ltd.



Point-to-Point Page:



The main element configuration description of connection setting interface:

Interface Element	Description
Connection mode	Connection mode of the device and opposite terminal wireless device, options as follows: • Point to point: it's used for connecting the appointed wireless device; • Roam: Switching among wireless devices with the same SSID.
Roaming signal threshold	Textbox of roaming signal threshold. • When the signal strength RSSI falls below this threshold, roaming will be triggered. • When the signal strength RSSI is higher than this threshold, roaming will not be triggered. Note: This input box is displayed only when connection mode is selected as roaming.
Frequency	Scanning frequency band. Options are as follows: • 2.4GHz • 5GHz

Copyright © 3onedata Co., Ltd.

Interface Element	Description
SSID	SSID name of the opposite device wireless network. Note: User can add the wireless device for bridge via scan button.
Encryption	Encryption mode of opposite device wireless network, options as follows: • No encryption; • WPA2: WiFi Protected Access II suits for the individual or average family network. It adopts pre-shared key mode and supports TKIP (Temporal Key Integrity Protocol) and AES (Advanced Encryption Standard) encryption modes. • WPA/WPA2: mixed mode of WPA and WPA2, it uses WPA or WPA2 encryption algorithm. • WPA3: the third version of Wi-Fi protected access, with further security improvements over WPA2, longer encryption keys, and SAE authentication. • WPA2/WPA3: mixed mode of WPA2 and WPA3, it uses WPA2 or WPA3 encryption algorithm. Note: WPA2/WPA3 only supports personal edition and doesn't support enterprise edition currently. Other encryption algorithms are supported by both of them.
Encryption algorithm	Wireless network encryption algorithm of the opposite device, options as follows: • AES (CCMP): advanced encryption standard; • TKIP/AES: the key integrates 2113 protocol or advanced encryption standard temporarily. Note: When the encryption method is WPA2/WPA3 and WPA3, only AES(CCMP) encryption algorithm is supported.
Password	Password of opposite device wireless network.
BSSID	MAC address of opposite device wireless network. Note: This input box is displayed only when “connection mode” is selected as “point to point”.

3.3.5 Wireless Settings 1

Function Description

On the "Wireless Settings 1" page of bridge mode, user can configure the wireless parameters of RF1.

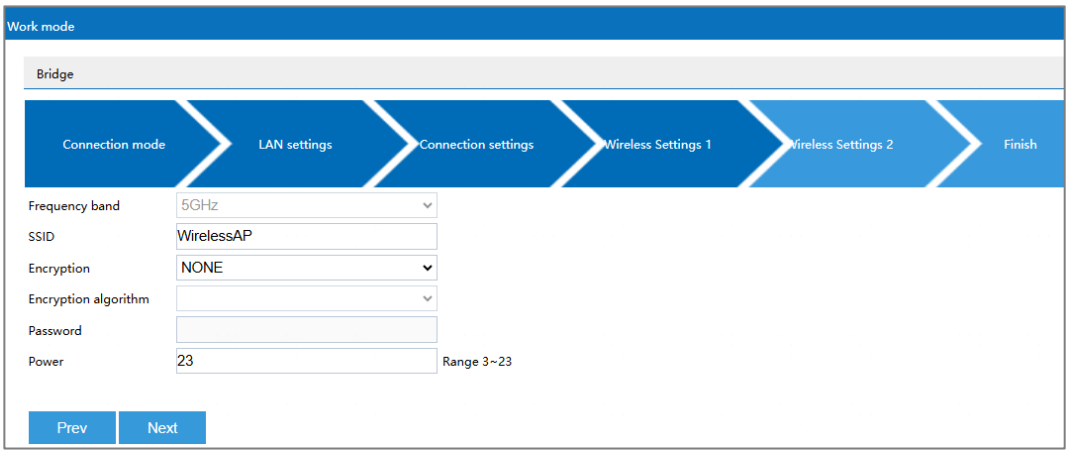
Copyright © 3onedata Co., Ltd.

Operation Path

Please open in order: "Work mode > Bridge".

Interface Description

The Wireless Settings 1 interface is as follows:



Main elements configuration descriptions of Wireless Settings 1 interface:

Interface Element	Description
Frequency band	The wireless frequency band used by the bridging corresponding to the current wireless setting.
SSID	SSID name of wireless network, it supports 1-32 characters.
Encryption	Encryption mode of wireless network, options as follows: • No encryption; • WPA2: WiFi Protected Access II suits for the individual or average family network. It adopts pre-shared key mode and supports TKIP (Temporal Key Integrity Protocol) and AES (Advanced Encryption Standard) encryption modes. • WPA/WPA2: mixed mode of WPA and WPA2, it uses WPA or WPA2 encryption algorithm. • WPA3: the third version of Wi-Fi protected access, with further security improvements over WPA2, longer encryption keys, and SAE authentication. • WPA2/WPA3: mixed mode of WPA2 and WPA3, it uses WPA2 or WPA3 encryption algorithm. Note: WPA2/WPA3 only supports personal edition and doesn't support enterprise edition currently. Other encryption algorithms are supported by both of them.
Encryption algorithm	Encryption algorithm of wireless network, options as follows: • AES (CCMP): advanced encryption standard; • TKIP/AES: the key integrates 2113 protocol or advanced

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	encryption standard temporarily. Note: When the encryption method is WPA2/WPA3 and WPA3, only AES(CCMP) encryption algorithm is supported.
Password	Password of wireless network, it supports 8-63 characters. Note: Wireless password doesn't support blanks. It represents no encryption for wireless network if no password is filled in.
Power	Transmission power of device wireless signal. Note: • Greater the transmitted power, better the transmittability, longer the transmission range, but stronger the interference; • Different device may have different transmitted power range.

3.3.6 Wireless Setting 2

Function Description

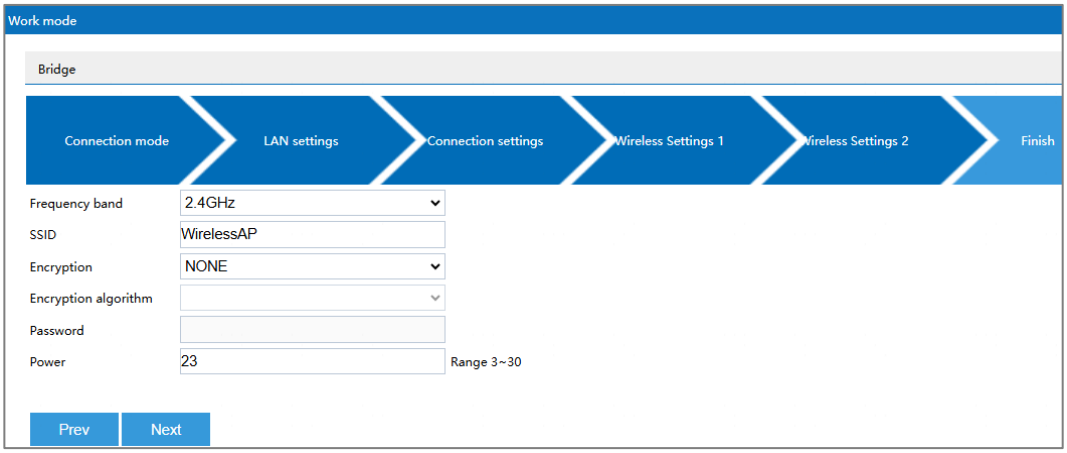
On the "Wireless Settings 2" page of bridge mode, user can configure the wireless parameters of RF2.

Operation Path

Please open in order: "Work mode > Bridge".

Interface Description

The Wireless Settings 2 interface is as follows:



Main elements configuration descriptions of Wireless Settings 2 interface:

Interface Element	Description
Frequency band	The wireless frequency band corresponding to the current

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	wireless setting, the options are as follows: • 2.4GHz • 5GHz
SSID	SSID name of wireless network, it supports 1-32 characters.
Encryption	Encryption mode of wireless network, options as follows: • No encryption; • WPA2: WiFi Protected Access II suits for the individual or average family network. It adopts pre-shared key mode and supports TKIP (Temporal Key Integrity Protocol) and AES (Advanced Encryption Standard) encryption modes. • WPA/WPA2: mixed mode of WPA and WPA2, it uses WPA or WPA2 encryption algorithm. • WPA3: the third version of Wi-Fi protected access, with further security improvements over WPA2, longer encryption keys, and SAE authentication. • WPA2/WPA3: mixed mode of WPA2 and WPA3, it uses WPA2 or WPA3 encryption algorithm. Note: WPA2/WPA3 only supports personal edition and doesn't support enterprise edition currently. Other encryption algorithms are supported by both of them.
Encryption algorithm	Encryption algorithm of wireless network, options as follows: • AES (CCMP): advanced encryption standard; • TKIP/AES: the key integrates 2113 protocol or advanced encryption standard temporarily. Note: When the encryption method is WPA2/WPA3 and WPA3, only AES(CCMP) encryption algorithm is supported.
Password	Password of wireless network, it supports 8-63 characters. Note: Wireless password doesn’t support blanks. It represents no encryption for wireless network if no password is filled in.
Power	Transmission power of device wireless signal. Note: • Greater the transmitted power, better the transmittability, longer the transmission range, but stronger the interference; • Different device may has different transmitted power range.

Copyright © 3onedata Co., Ltd.

3.3.7 Finish

Function Description

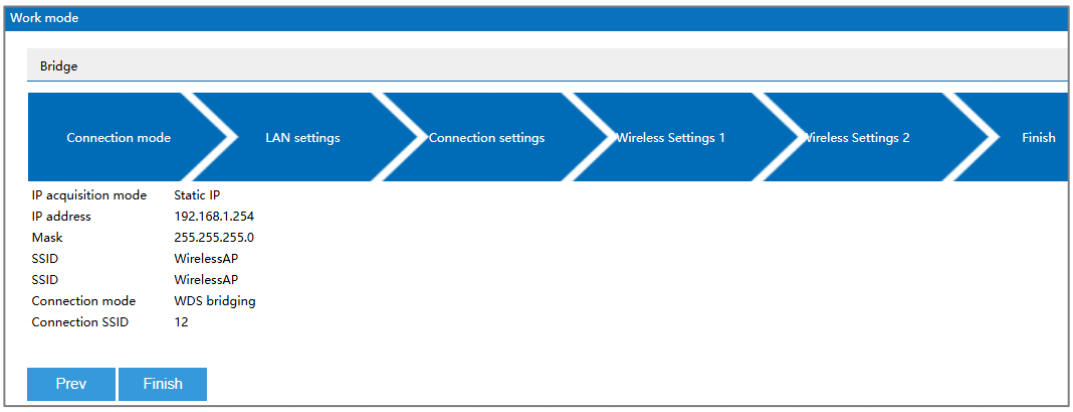
On the "Finish" page of bridge mode, user can check the main parameters of bridge mode.

Operation Path

Please open in order: "Work mode > Bridge".

Interface Description

Finish interface is as follows:



The main element configuration description of finish interface:

Interface Element	Description
IP acquisition mode	• Static IP • DHCP
IP address	IP address information of LAN.
Mask	Subnet masks information of LAN.
SSID1	SSID name of wireless 1 network.
SSID2	SSID name of wireless 2 network.
Connection mode	Display Wireless bridging Method.
Connection SSID	Display the SSID name of the opposite end of the bridge.

3.4 Client

Under the client mode, the device will convert received wireless signal to cable signal.

- Under WDS bridging and universal bridging in this mode, WAN port, LAN port and wireless signal are all in the same VLAN, and DHCP server is disabled by

Copyright © 3onedata Co., Ltd.

default.

- In the wireless NAT mode of this mode, the wireless signal is connected to the external network, the WAN port and LAN port are in the internal network, and the DHCP server is enabled by default.

Notice

There are three client connection modes: WDS (Wireless Distribution System), universal bridging and wireless NAT. When WDS bridging is used, the superior wireless network device needs to support and enable the WDS function.

The client mode mainly has five configuration links:

- Connection Mode
- WAN settings

  Note:
  External network settings are only supported when the connection mode is "Wireless NAT".
- LAN settings
- Connection Settings
- Finish

Following is the explanation of those configuration links.

3.4.1 Connection Mode

Function Description

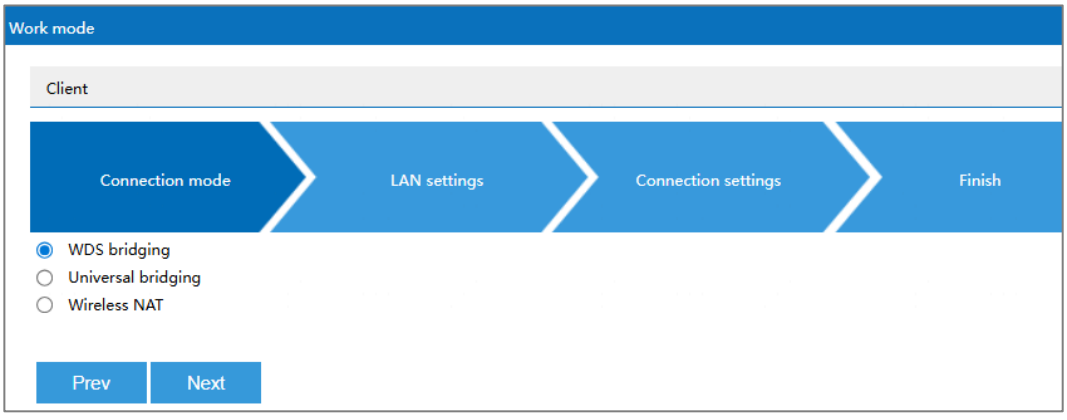
On the "Connection Mode" page of client mode, user can choose universal bridging,WDS bridging and wireless NAT.

Operation Path

Please open in order: "Work mode > Client".

Interface Description

The connection mode interface is as follows:



Copyright © 3onedata Co., Ltd.

The main element configuration description of connection mode interface:

Interface Element	Description
WDS bridging	The client connection adopts WDS (wireless distribution system) wireless distribution system bridging mode. Note: In WDS bridging mode, the transmitted data is transparently transmitted. WDS bridging is recommended if the device WDS of the same brand or each supplier are compatible.
Universal bridging	The client connection adopts universal bridge mode. Note: In the universal bridging mode, the forwarding data is forwarded through the device agent, which is compatible with all kinds of supplier devices. However, the proxy forwarding mechanism hides the MAC address of the real wireless client, which is not suitable for the network environment with strict requirements on MAC address.
Wireless NAT	Wireless NAT(Network Address Translation) is adopted for connection. Note: Under the wireless NAT connection mode, the device wireless can connect to the external network via PPPoE dial-up, static IP and dynamic acquisition; the LAN port can be connected to LAN.

3.4.2 WAN Settings

Function Description

Notice

WAN settings are only supported when the connection mode is "Wireless NAT".

On the "WAN Settings" page of client mode(wireless NAT), Wireless can be connected to WAN via three methods:

- PPPoE;
- Static IP;
- DHCP.

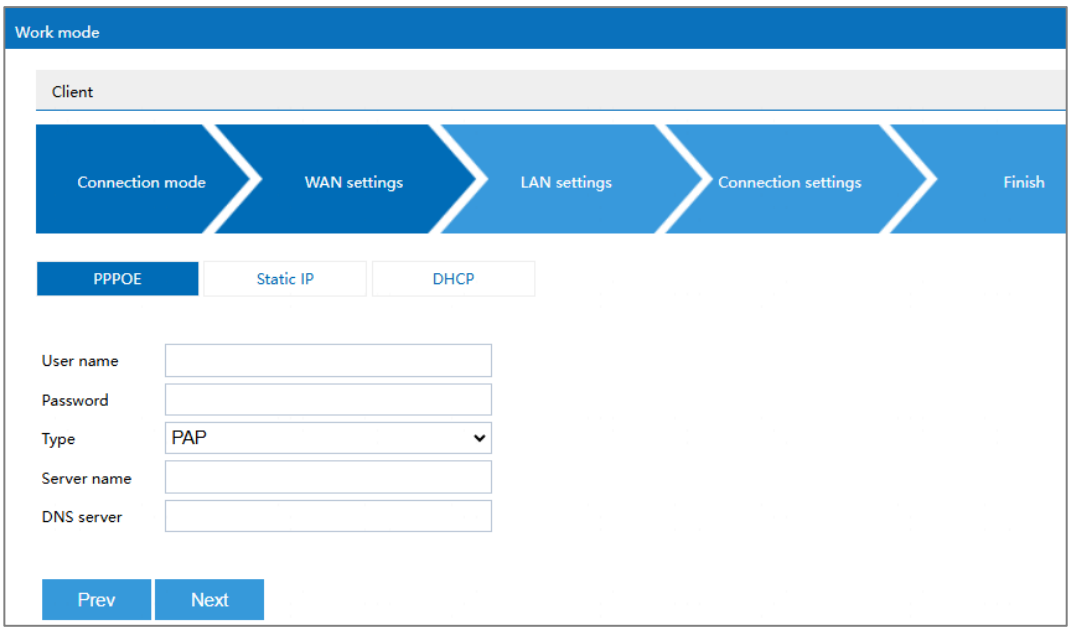
Operation Path

Please open in order: "Work mode > Client".

Interface Description 1: PPPoE

PPPoE interface is as follows:

Copyright © 3onedata Co., Ltd.



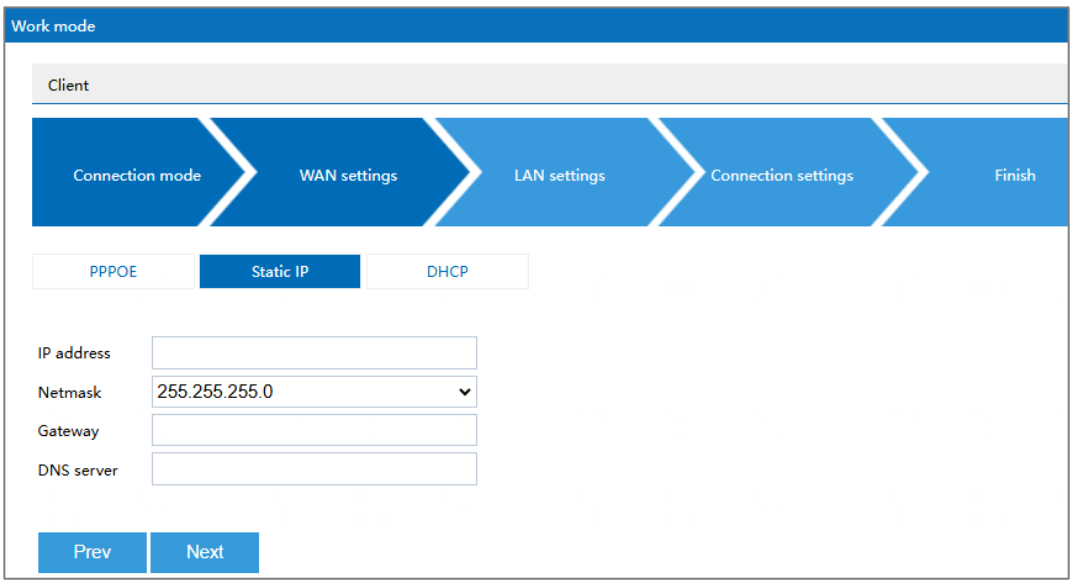
The main element configuration description of PPPoE interface:

Interface Element	Description
PPPoE	Click the "PPPoE Dialing" button to dial through the point-to-point protocol on Ethernet to realize Internet access.
User name	User name of PPPoE connection. Note: User name, password and service name are provided by network provider.
Password	Password of PPPoE connection. Note: User name, password and service name are provided by network provider.
Type	The type of PPPoE dialing: • PAP: Password Authentication Protocol, which sends user name or password over the network; • CHAP: Challenge Handshake Authentication Protocol, it only transmits user name; • PAP/CHAP: uses Password Authentication Protocol or Challenge Handshake Authentication Protocol.
Server name	Server name, not fill if network provider doesn't supply. Note: User name, password and service name are provided by network provider.
DNS server	The DNS server address provided by network provider or WAN.

Copyright © 3onedata Co., Ltd.

Interface Description 2: Static IP

Static IP interface is as follows:



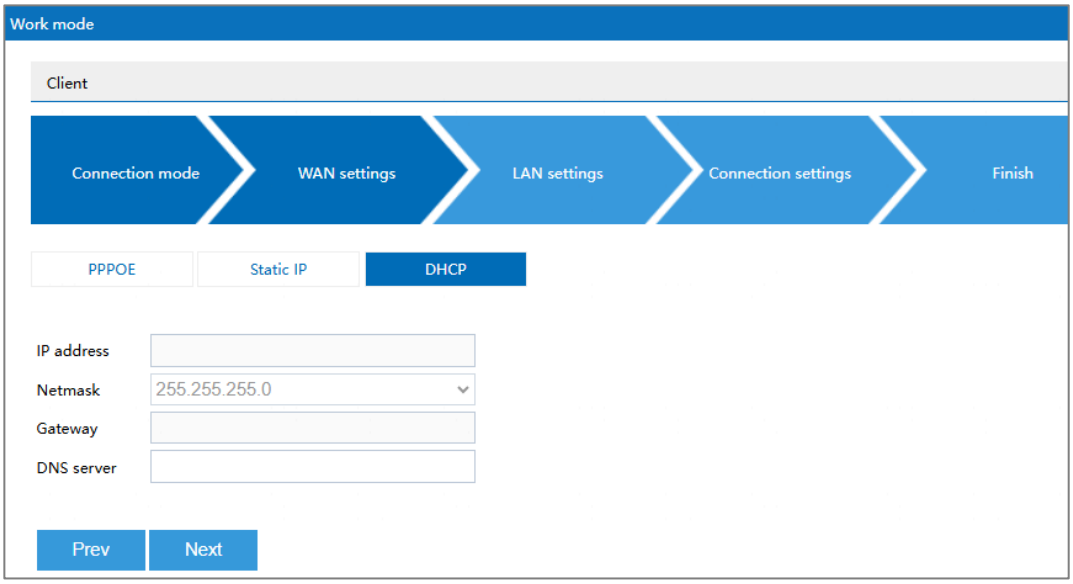
The main element configuration description of static IP interface:

Interface Element	Description
Static IP	Click the "Static IP" button to configure the WAN network information of the device.
IP address	The fixed IP address provided by network provider or WAN.
Netmask	The subnet mask provided by network provider or LAN.
Gateway	Default gateway address provided by network provider or WAN.
DNS server	The DNS server address provided by network provider or WAN.

Interface Description 3: DHCP

DHCP interface is as follows:

Copyright © 3onedata Co., Ltd.



Main elements configuration description of DHCP interface:

Interface Element	Description
DHCP	Click the "dynamic acquisition" button to automatically acquire the WAN port network information of the device. Note: The device automatically acquires the network address information distributed by network provider or WAN.
IP address	IP address automatically distributed by network provider or WAN.
Netmask	The subnet mask automatically distributed by network provider or WAN.
Gateway	Gateway address automatically distributed by network provider or WAN.
DNS server	DNS server address. Note: The priority level of manually setting DNS server address is higher than the one of automatically acquired DNS server address.

3.4.3 LAN Settings

Function Description

On the "LAN settings" page of client mode, user can configure the IP address and subnet mask information of LAN.

Copyright © 3onedata Co., Ltd.

Notes

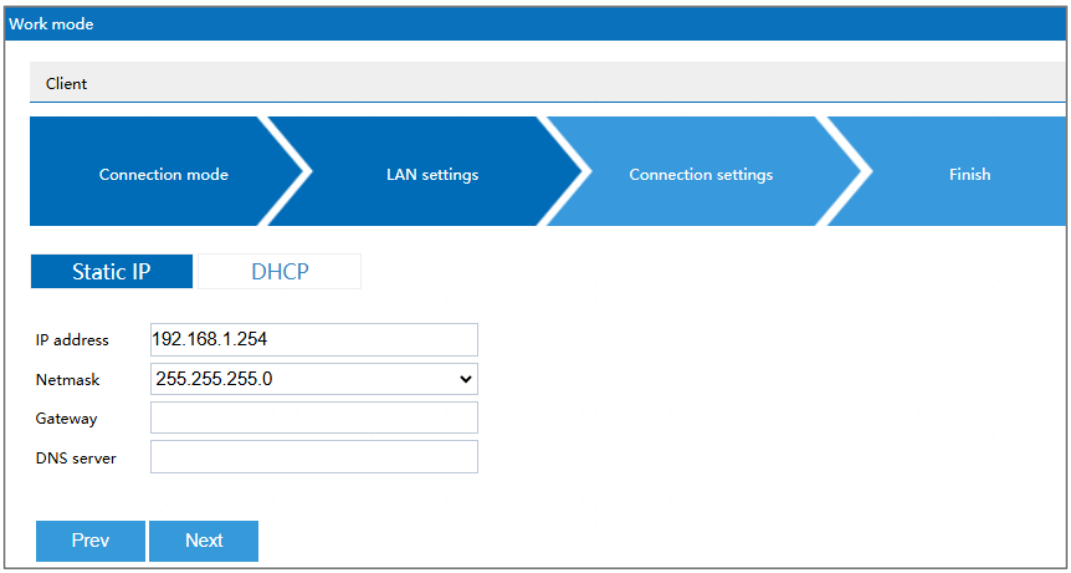
- In universal bridging and wireless NAT mode, "static IP" is supported.
- In WDS bridging mode, supports "static IP" and "DHCP".

Operation Path

Please open in order: "Work mode > Client".

Interface Description 1: Static IP

Static IP interface is as follows:



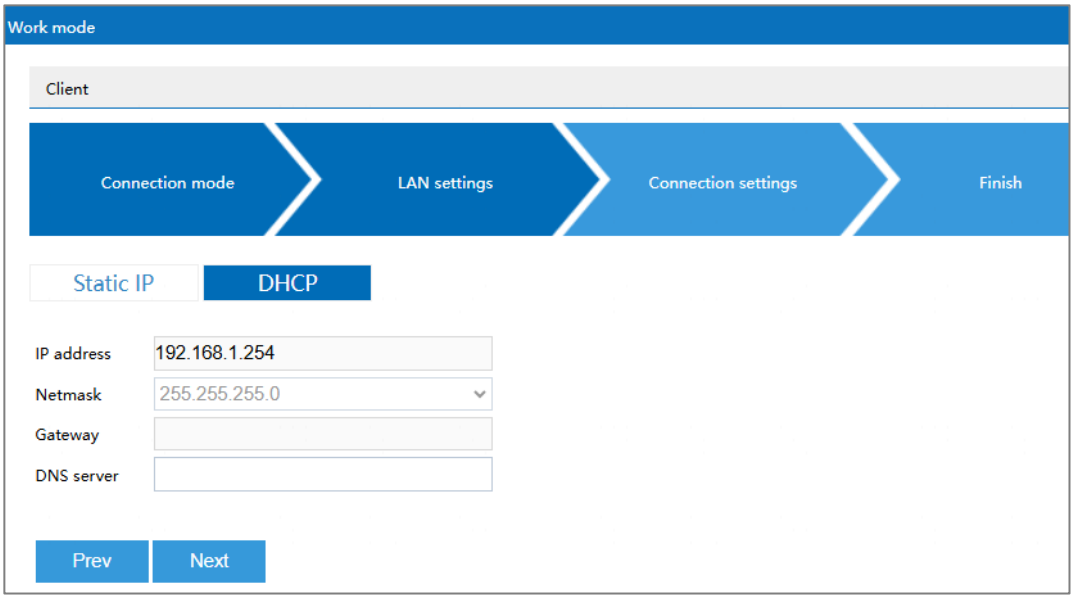
The main element configuration description of static IP interface:

Interface Element	Description
Static IP	Static IP tab.
IP address	IP address information of LAN.
Netmask	Drop-down list of netmask.
Gateway	Default gateway address of LAN.
DNS server	DNS server address.

Interface Description 2: DHCP

DHCP interface is as follows:

Copyright © 3onedata Co., Ltd.



Main elements configuration description of DHCP interface:

Interface Element	Description
DHCP	DHCP tab.
IP address	Dynamic acquisition of IP addresses information of LAN.
Netmask	Drop-down list of netmask.
Gateway	Automatically acquired default gateway address.
DNS server	DNS server address. Note: The priority level of manually setting DNS server address is higher than the one of automatically acquired DNS server address.

3.4.4 Connection Settings

Function Description

On the "Connection Setting" page of Client mode, user can configure the parameters of bridging superior wireless network.

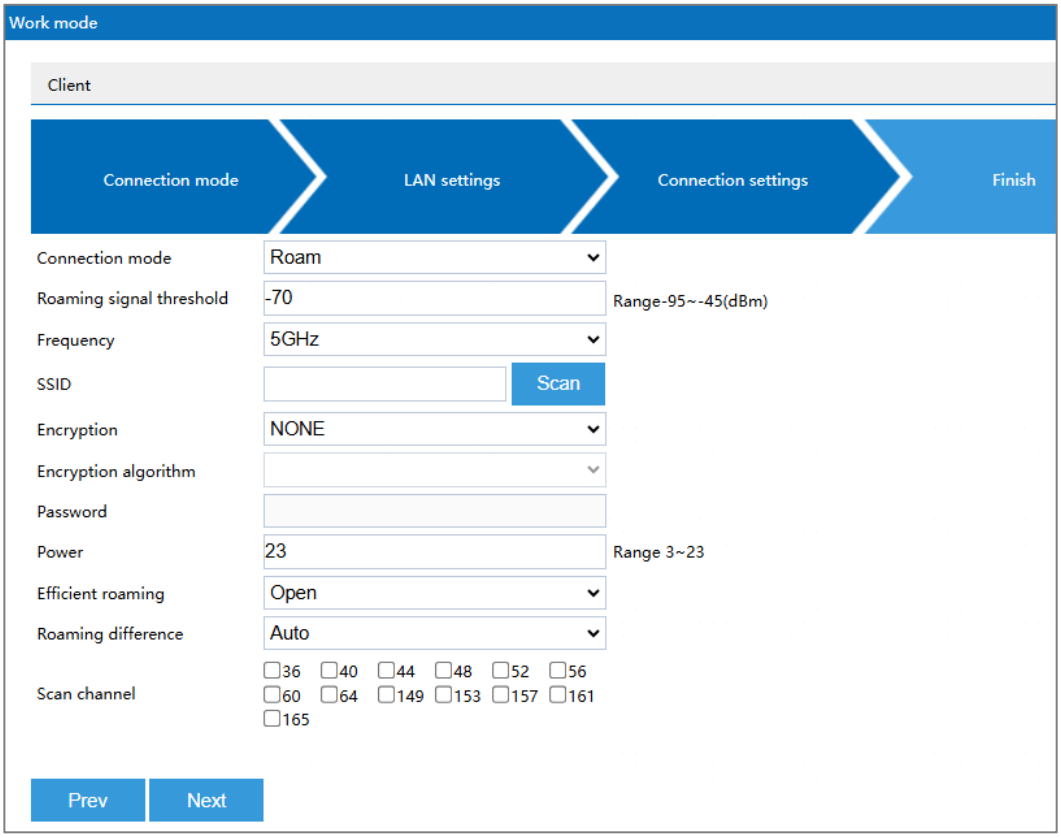
Operation Path

Please open in order: "Work mode > Client".

Interface Description

The interface of connection setting is as follows:

Copyright © 3onedata Co., Ltd.



The main element configuration description of connection setting interface:

Interface Element	Description
Connection mode	Connection mode of the device and opposite terminal wireless device, options as follows: • Point to point: it's used for connecting the appointed wireless device; • Roam: Switching among wireless devices with the same SSID.
Roaming signal threshold	Textbox of roaming signal threshold. • When the signal strength RSSI falls below this threshold, roaming will be triggered. • When the signal strength RSSI is higher than this threshold, roaming will not be triggered. Note: This input box is displayed only when connection mode is selected as roaming.
Frequency	Scanning frequency band. Options are as follows: • 2.4GHz • 5GHz
SSID	SSID name of the opposite device wireless network. Note: User can add the wireless device for bridge via scan button.

Copyright © 3onedata Co., Ltd.

Interface Element	Description
Encryption	Encryption mode of opposite device wireless network, options as follows: • No encryption; • WPA2: WiFi Protected Access II suits for the individual or average family network. It adopts pre-shared key mode and supports TKIP (Temporal Key Integrity Protocol) and AES (Advanced Encryption Standard) encryption modes. • WPA/WPA2: mixed mode of WPA and WPA2, it uses WPA or WPA2 encryption algorithm. • WPA3: the third version of Wi-Fi protected access, with further security improvements over WPA2, longer encryption keys, and SAE authentication. • WPA2/WPA3: mixed mode of WPA2 and WPA3, it uses WPA2 or WPA3 encryption algorithm. Note: WPA2/WPA3 only supports personal edition and doesn't support enterprise edition currently. Other encryption algorithms are supported by both of them.
Encryption algorithm	Wireless network encryption algorithm of the opposite device, options as follows: • AES (CCMP): advanced encryption standard; • TKIP/AES: the key integrates 2113 protocol or advanced encryption standard temporarily. Note: When the encryption method is WPA2/WPA3 and WPA3, only AES(CCMP) encryption algorithm is supported.
Password	Password of opposite device wireless network.
BSSID	MAC address of opposite device wireless network. Note: This item is displayed when the connection mode is “Point-to-Point” connection.
Power	Transmission power of device wireless signal. Note: • Greater the transmitted power, better the transmittability, longer the transmission range, but stronger the interference; • Different device may has different transmitted power range.
Efficient roaming	The switch of efficient roaming function Efficient roaming is a roaming acceleration technology independently developed by our company. Ordinary roaming requires all-channel scanning, while efficient roaming specifies any channels for scanning, and which has optimized the roaming strategy and

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	greatly shortened the roaming time. Note: Efficient roaming can only be enabled when the“Roaming” is selected as the “Connection Mode”.
Roaming difference	Roaming RSSI difference of efficient roaming function. The default is the dynamic value calculated automatically, or you can select a fixed value in the drop-down list (range: 5-20). • When the signal strength RSSI difference between the new AP and the current associated AP is higher than this threshold, roaming is triggered; • When the RSSI difference between the signal strength of the new AP and the current associated AP is lower than this threshold, roaming will not be triggered; Note: This drop-down box is displayed only when efficient roaming is enabled.
Scan channel	High-priority scan channels under efficient roaming function. No channel is checked by default, that is, there is no priority channel, and all channels are scanned in sequence. When some channels are checked, the designated channel is scanned first, and if no stable signal can be scanned in the designated channel, other channels will be scanned. Note: This item is displayed only when “efficient roaming” is enabled.

3.4.5 Finish

Function Description

On the "Finish" page of client mode, user can check the main parameters of client.

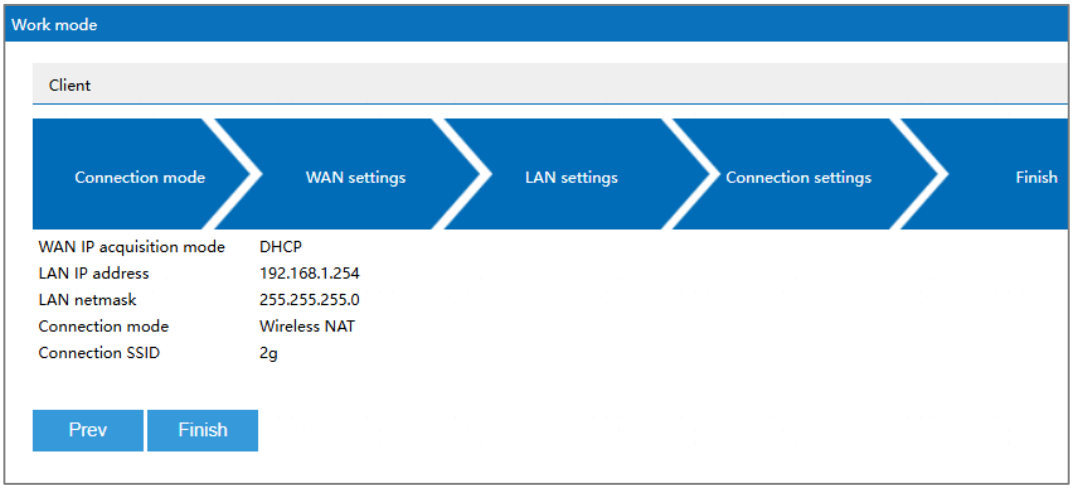
Operation Path

Please open in order: "Work mode > Client".

Interface Description

Finish interface is as follows:

Copyright © 3onedata Co., Ltd.



The main element configuration description of finish interface:

Interface Element	Description
IP acquisition mode/WAN IP acquisition mode	• PPPoE • Static IP • DHCP
IP Address/LAN IP Address	IP address information of LAN.
Netmask/LAN Netmask	Subnet masks information of LAN.
Connection mode	Display Wireless bridging Method.
Connection SSID	Display the SSID name of the opposite end of the bridge.

3.5 Dual-link Mode

Notes

Only 2E2E dual-frequency devices support dual link mode, and 2E single-frequency devices do not support dual link mode.

In dual-link mode, dual-link client is supported, and dual-frequency seamless roaming and link backup are supported.

The principle of dual-frequency seamless roaming is using two wireless bands to complete the roaming action at the same time, the two bands can be 2.4G+5G, or dual-5G. The two frequency bands are respectively associated with different BSSIDs, one of which is the main frequency band and responsible for data communication with AP;

Copyright © 3onedata Co., Ltd.

The other band, which acts as a backup, scans when the signal strength is below the threshold and connects to a better source automatically if it is found. This process is the same as that of single frequency roaming. When the communication quality of the primary frequency band is significantly reduced and the signal strength of the backup frequency band is strong enough, the backup frequency band will be switched to the primary frequency band, and take over the data communication with AP, while the original primary frequency band will be converted to the backup frequency band. When switching between the primary and backup frequency bands, both frequency bands are in the state of associated AP without the process of disconnecting and reassociating AP, so seamless roaming can be achieved.

Dual link mode mainly has five configuration links:

- Connection Mode
- WAN settings

  Note:
  External network settings are only supported when the connection mode is "Wireless NAT".
- LAN settings
- Connection Settings
- Finish

Following is the explanation of those configuration links.

3.5.1 Connection Mode

Function Description

On the "Connection Mode " page of dual-link mode, user can choose dual WDS, dual universal bridging and dual wireless NAT.

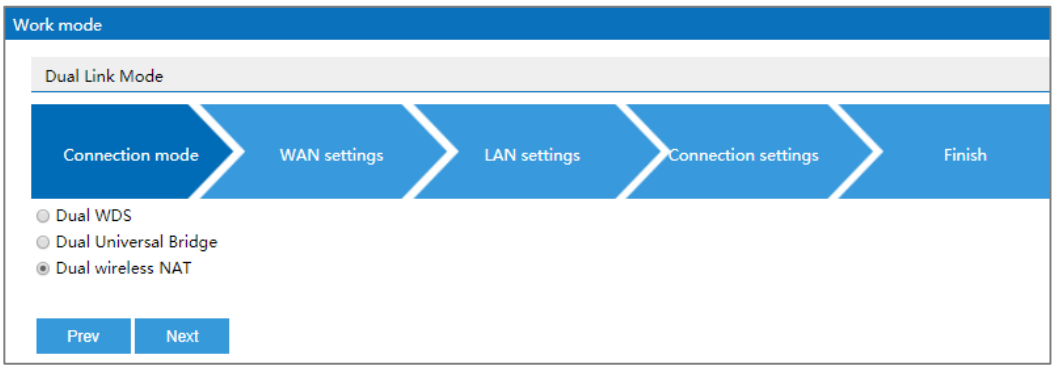
Operation Path

Please open in order: “Mode Settings > Dual-link Mode".

Interface Description

The connection mode interface is as follows:

Copyright © 3onedata Co., Ltd.



The main element configuration description of connection mode interface:

Interface Element	Description
Dual WDS	The connection mode adopts the bridge mode of dual WDS (wireless distribution system). This mode is mainly used for realizing seamless roaming. Note: In dual WDS mode, the transmitted data is transparently transmitted. WDS bridging is recommended if the device WDS of the same brand or each supplier are compatible.
Dual Universal Bridge	The connection mode adopts dual universal bridging. This mode is mainly used for realizing seamless roaming. Note: In the universal bridging mode, the forwarding data is forwarded through the device agent, which is compatible with all kinds of supplier devices. However, the proxy forwarding mechanism hides the MAC address of the real wireless client, which is not suitable for the network environment with strict requirements on MAC address.
Dual wireless NAT	Wireless NAT(Network Address Translation) is adopted for connection. Note: Under the wireless NAT connection mode, the device wireless can connect to the external network via PPPoE dial-up, static IP and dynamic acquisition; the LAN port can be connected to LAN.

3.5.2 WAN Settings

Function Description

Notice

Only dual wireless NAT mode supports external network settings.

On the "WAN Settings" page of dual link mode (dual wireless NAT), wireless can connect to the WAN in three modes:

Copyright © 3onedata Co., Ltd.

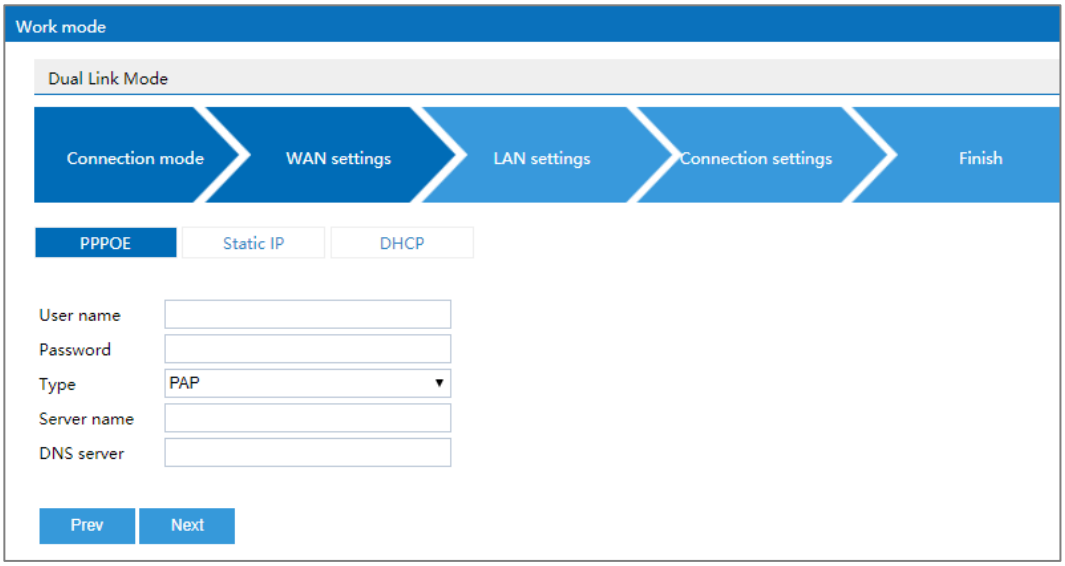
- PPPoE;
- Static IP;
- DHCP.

Operation Path

Please open in order: “Mode Settings > Dual-link Mode".

Interface Description 1: PPPoE

PPPoE interface is as follows:



The main element configuration description of PPPoE interface:

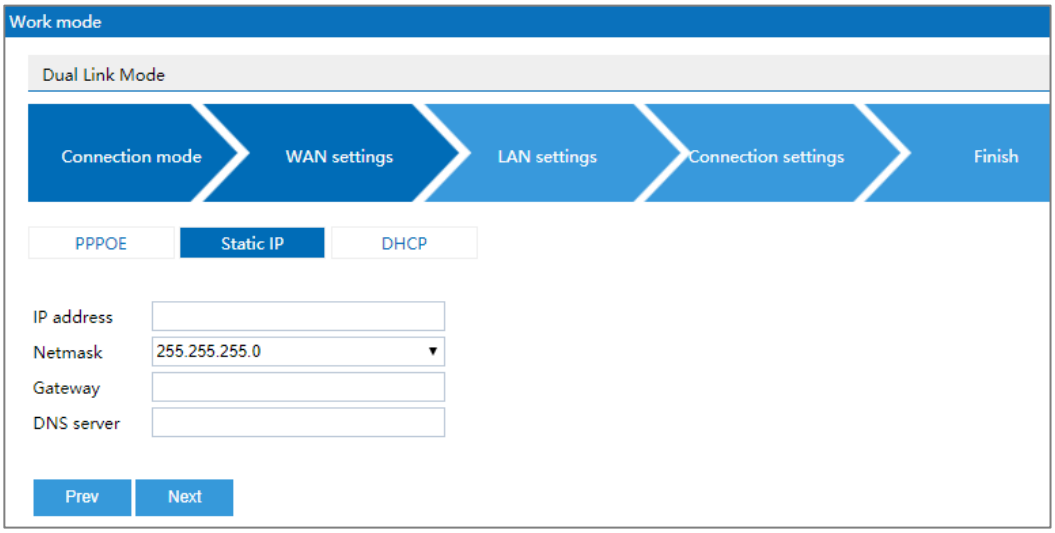
Interface Element	Description
PPPoE	Click the "PPPoE Dialing" button to dial through the point-to-point protocol on Ethernet to realize Internet access.
Username	User name of PPPoE connection. Note: User name, password and service name are provided by network provider.
Password	Password of PPPoE connection. Note: User name, password and service name are provided by network provider.
Type	The type of PPPoE dialing: • PAP: Password Authentication Protocol, which sends user name or password over the network; • CHAP: Challenge Handshake Authentication Protocol, it only transmits user name; • PAP/CHAP: uses Password Authentication Protocol or Challenge Handshake Authentication Protocol.
Server Name	Server name, not fill if network provider doesn't supply.

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	Note: User name, password and service name are provided by network provider.
DNS Server	The DNS server address provided by network provider or WAN.

Interface Description 2: Static IP

Static IP interface is as follows:



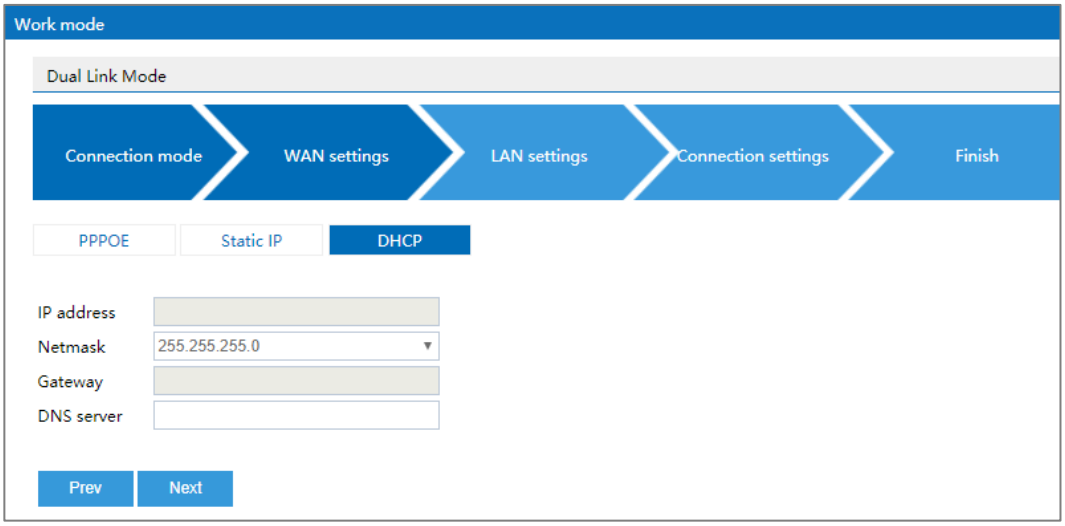
The main element configuration description of static IP interface:

Interface Element	Description
Static IP	Click the "Static IP" button to configure the WAN network information of the device.
IP address	The fixed IP address provided by network provider or WAN.
Netmask	Drop-down list of netmask.
Gateway	Default gateway address provided by network provider or WAN.
DNS server	The DNS server address provided by network provider or WAN.

Interface Description 3: DHCP

DHCP interface is as follows:

Copyright © 3onedata Co., Ltd.



Main elements configuration description of DHCP interface:

Interface Element	Description
DHCP	Click the "dynamic acquisition" button to automatically acquire the WAN port network information of the device. Note: The device automatically acquires the network address information distributed by network provider or WAN.
IP address	IP address automatically distributed by network provider or WAN.
Netmask	Drop-down list of netmask.
Gateway	Gateway address automatically distributed by network provider or WAN.
DNS server	DNS server address. Note: The priority level of manually setting DNS server address is higher than the one of automatically acquired DNS server address.

3.5.3 LAN Settings

Function Description

On the "Intranet Settings" page of dual-link mode, user can configure the IP address and subnet mask information of LAN.

Note

- In dual universal bridging and dual wireless NAT mode, "Static IP" is supported.
- In dual WDS bridging mode, supports "static IP" and "DHCP".

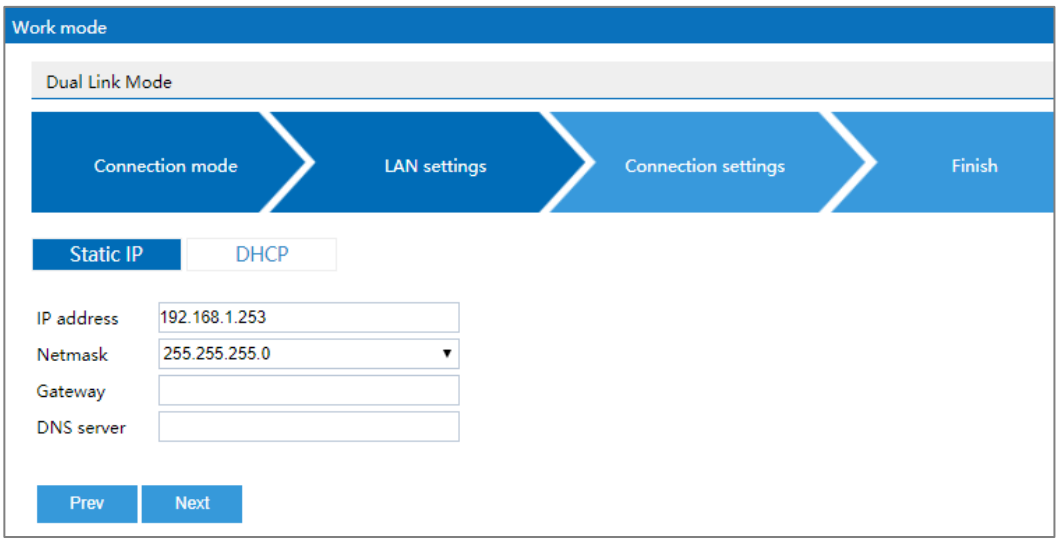
Copyright © 3onedata Co., Ltd.

Operation Path

Please open in order: “Mode Settings > Dual-link Mode".

Interface Description 1: Static IP

Static IP interface is as follows:



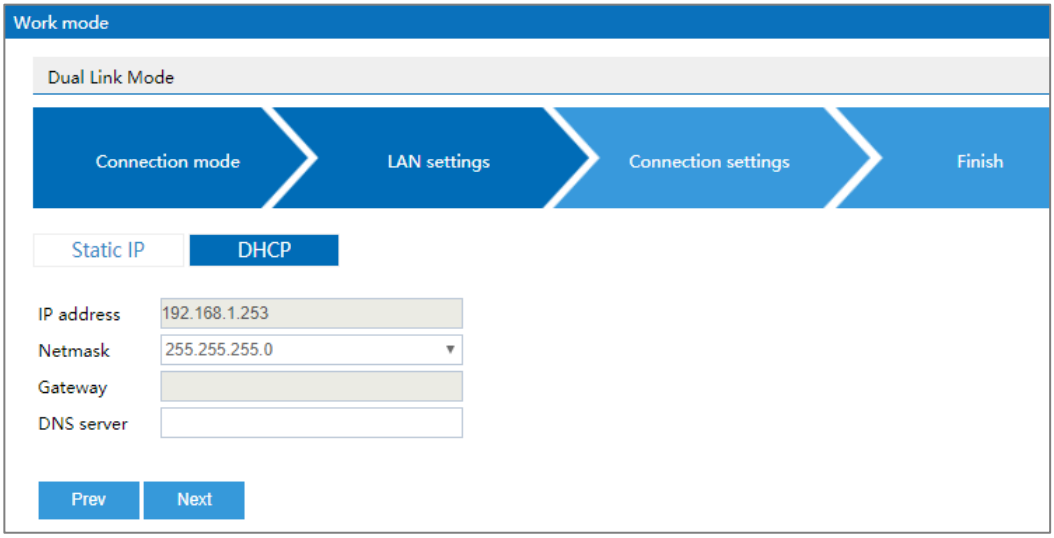
The main element configuration description of static IP interface:

Interface Element	Description
Static IP	Static IP tab.
IP address	IP address information of LAN.
Netmask	Drop-down list of netmask.
Gateway	Default gateway address of LAN.
DNS server	DNS server address.

Interface Description 2: DHCP

DHCP interface is as follows:

Copyright © 3onedata Co., Ltd.



Main elements configuration description of DHCP interface:

Interface Element	Description
DHCP	DHCP tab.
IP address	Dynamic acquisition of IP addresses information of LAN.
Netmask	Drop-down list of netmask.
Gateway	Automatically acquired default gateway address.
DNS server	DNS server address. Note: The priority level of manually setting DNS server address is higher than the one of automatically acquired DNS server address.

3.5.4 Connection Settings

Function Description

On the "Connection Settings" page of dual-link mode, user can configure the parameters of bridging superior wireless network.

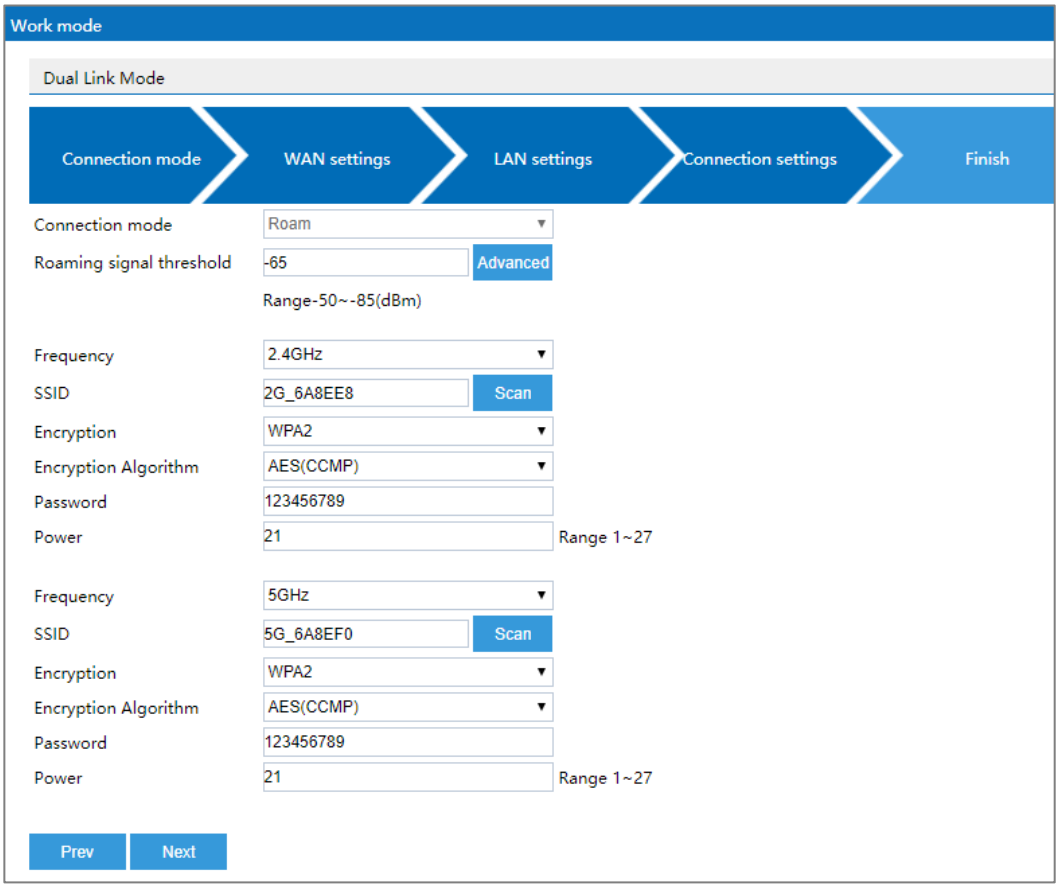
Operation Path

Please open in order: “Mode Settings > Dual-link Mode".

Interface Description

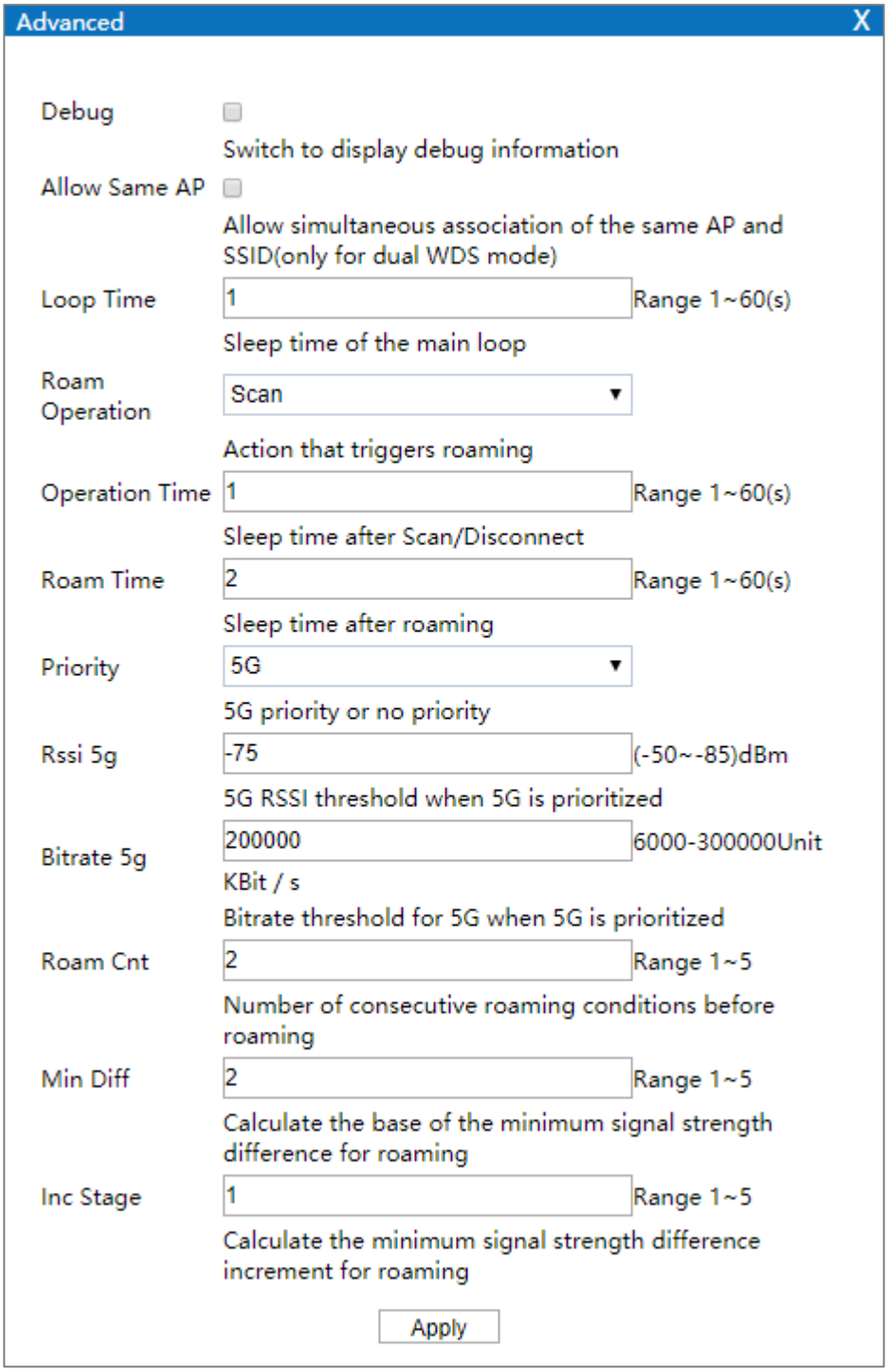
The interface of dual-link connection setting is as follows:

Copyright © 3onedata Co., Ltd.



The settings interface of “Advanced” button is as follows:

Copyright © 3onedata Co., Ltd.



The main element configuration description of connection setting interface:

Interface Element	Description
Connection mode	The default mode of connection between the device and the wireless device on the other side is roaming: seamless switching between wireless devices with two SSIDs that are not in use.
Roaming signal	The roaming signal threshold of the backup frequency band for

Copyright © 3onedata Co., Ltd.

Interface Element	Description
threshold	scanning is -70 by default. When the roaming threshold of the backup band is lower than this value, it will scan.
Advanced	**Click the "Advanced" button to pop up the Advanced configuration bar**
Debug	Debug information switch, default is off: • I: Open, the system debugging information will be constantly printed in the log; • 0: Close, the system debugging information is not printed in the log;
Allow Same AP	The same SSID of the same AP is allowed to be associated at the same time, and it is only used in dual WDS mode.
Loop Time	The sleep time of the main loop of the dual-band seamless roaming is 1 second by default.
Roam Operation	The drop-down list of backup band roaming operation, the options are as follows: • Scan • Disconnect
Operation Time	The sleep time after Scan/Disconnect the backup frequency band is 2 seconds by default.
Roam Time	The sleep time after switching the primary and secondary frequency band is 2 seconds by default.
Priority	Priority setting, options: • 5G: 5G first; • None: no priority Note: • 2.4G+5G displays this item, and the default is 5G first. • Dual 2G or dual 5G does not display this item.
Rssi 5g	In the case of 5G priority, the signal strength threshold of 5G roaming. The default is -75. This parameter needs to be smaller than the roaming signal threshold. Note: Only 2.4G+5G displays this item, and it can be configured when 5G is preferred; Dual 2G or dual 5G does not display this item.
Bitrate 5g	In the case of 5G priority, the connection rate threshold of 5G roaming is 200000 by default. Note: Only 2.4G+5G displays this item, and it can be configured when 5G is preferred; Dual 2G or dual 5G does not display this item.
Roam Cnt	The default number of times that the roaming conditions are

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	satisfied continuously is 3 times, that is, the primary and standby switching will only be carried out if the roaming conditions are satisfied for 3 consecutive times in the backup frequency band.
Min Diff	The cardinality for calculating the minimum difference of roaming signal strength is 2 by default.
Inc Stage	Calculate the increment value of the minimum difference value of roaming signal strength, the default is 2.
RF 1 Configuration	**RF 1 Configuration Area**
Frequency	Scanning frequency band 1. Options are as follows: • 2.4GHz • 5GHz
SSID	SSID name of the opposite device wireless network 1. Note: User can add the wireless device for bridge via scan button.
Encryption	Encryption mode of the opposite device wireless network 1, options as follows: • No encryption; • WPA2: WiFi Protected Access II is suitable for the individual or average family network. It adopts pre-shared key and supports TKIP (Temporal Key Integrity Protocol) and AES (Advanced Encryption Standard) encryption modes. • WPA/WPA2: mixed mode of WPA and WPA2, it uses WPA or WPA2 encryption algorithm. • WPA3: the third version of Wi-Fi protected access, with further security improvements over WPA2, longer encryption keys, and SAE authentication. • WPA2/WPA3: mixed mode of WPA2 and WPA3, it uses WPA2 or WPA3 encryption algorithm. Note: WPA2/WPA3 only supports personal edition and doesn't support enterprise edition currently. Other encryption algorithms are supported by both of them.
Encryption algorithm	The encryption algorithm of the opposite device wireless network 1, options as follows: • AES (CCMP): advanced encryption standard; • TKIP/AES: the key integrates 2113 protocol or advanced encryption standard temporarily. Note:

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	When the encryption method is WPA2/WPA3 and WPA3, only AES(CCMP) encryption algorithm is supported.
Password	Password of opposite device wireless network 1.
Power	Transmission power of device wireless signal 1. Note: • Greater the transmitted power, better the transmittability, longer the transmission range, but stronger the interference; • Different device may have different transmitted power range.
RF 2 Configuration	**RF 2 Configuration Area**
Frequency	Scanning frequency band 2. Options are as follows: • 2.4GHz • 5GHz
SSID	SSID name of the opposite device wireless network 2. Note: User can add the wireless device for bridge via scan button.
Encryption	Encryption mode of the opposite device wireless network 2, options as follows: • No encryption; • WPA2: WiFi Protected Access II is suitable for the individual or average family network. It adopts pre-shared key and supports TKIP (Temporal Key Integrity Protocol) and AES (Advanced Encryption Standard) encryption modes. • WPA/WPA2: mixed mode of WPA and WPA2, it uses WPA or WPA2 encryption algorithm. • WPA3: the third version of Wi-Fi protected access, with further security improvements over WPA2, longer encryption keys, and SAE authentication. • WPA2/WPA3: mixed mode of WPA2 and WPA3, it uses WPA2 or WPA3 encryption algorithm. Note: WPA2/WPA3 only supports personal edition and doesn't support enterprise edition currently. Other encryption algorithms are supported by both of them.
Encryption algorithm	Wireless network 2 encryption algorithm of the opposite device, options as follows: • AES (CCMP): advanced encryption standard; • TKIP/AES: the key integrates 2113 protocol or advanced encryption standard temporarily. Note: When the encryption method is WPA2/WPA3 and WPA3, only AES(CCMP) encryption algorithm is supported.

Copyright © 3onedata Co., Ltd.

Interface Element	Description
Password	Password of the opposite device wireless network 2.
Power	Transmission power of device wireless signal 2. Note: • Greater the transmitted power, better the transmittability, longer the transmission range, but stronger the interference; • Different device may have different transmitted power range.

3.5.5 Finish

Function Description

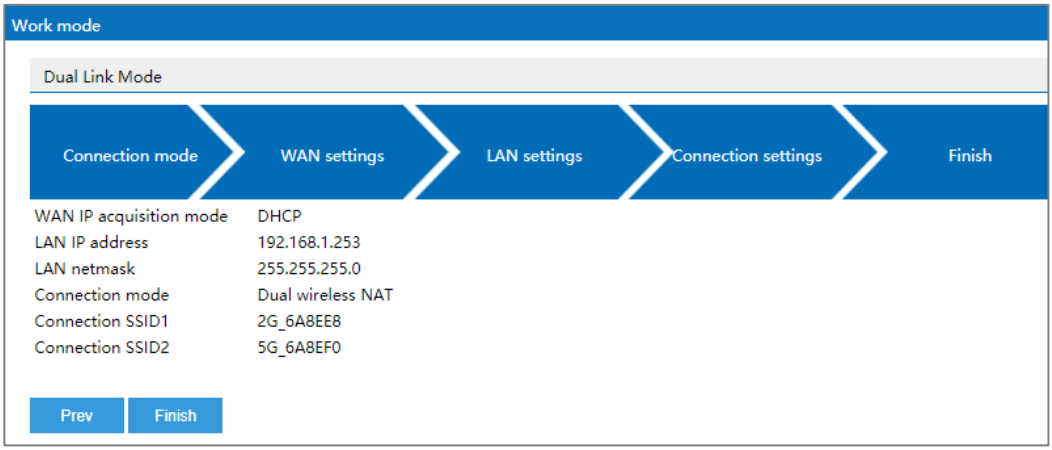
On the Dual link Mode “Finish” page, users can view the main parameters of the dual link.

Operation Path

Please open in order: “Mode Settings > Dual-link Mode".

Interface Description

Finish interface is as follows:



The main element configuration description of finish interface:

Interface Element	Description
WAN IP Acquisition Mode	• Static IP • DHCP
LAN IP Address	IP address information of LAN.
LAN Netmask	Subnet masks information of LAN.
Connection Mode	Display Wireless bridging Method.
Connection SSID1	Display the SSID1 name of the bridge.

Copyright © 3onedata Co., Ltd.

Interface Element	Description
Connection SSID2	Display the SSID2 name of the bridge.

Copyright © 3onedata Co., Ltd.

4 Status Center

In the status center, you can view system status, network status, wireless status, device statistics, ARP table and routing table.

4.1 System Status

Function Description

In the system status, you can view system information, memory information and CPU information.

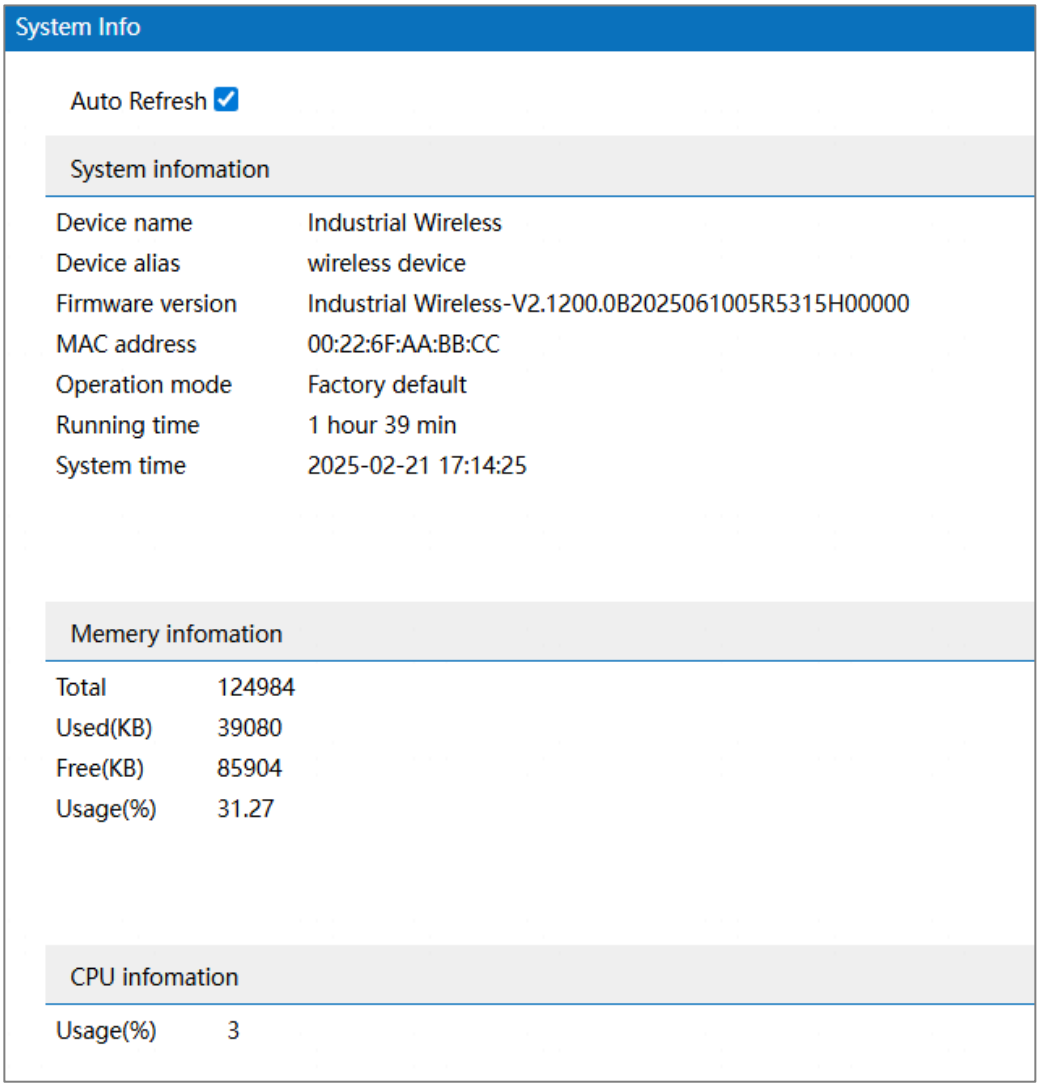
Operation Path

Please open: Status Center > System Status.

Interface Description

System status interface is as follows:

3onedata proprietary and confidential
Copyright © 3onedata Co., Ltd.



4.2 Network Status

Function Description

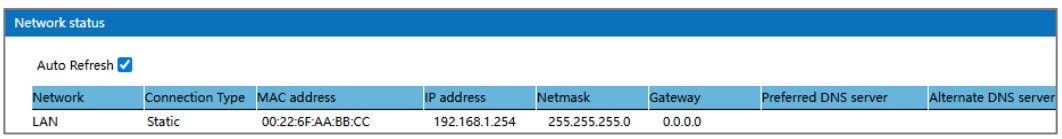
In network status, you can view the network status of the LAN port and WAN port of the device.

Operation Path

Please open: Status Center > Network Status.

Interface Description

The network status interface is as follows:



Copyright © 3onedata Co., Ltd.

4.3 Wireless Status

Function Description

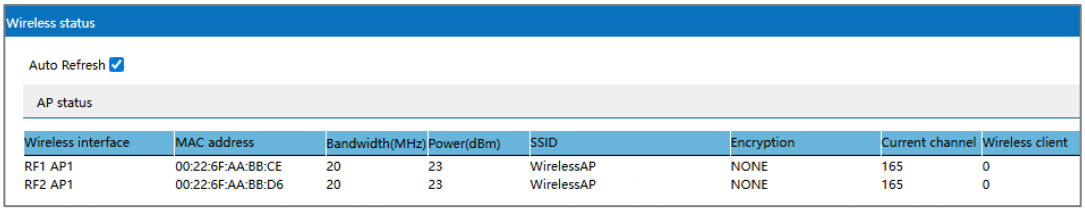
In the network status, you can view the wireless network parameters of the radio frequency of this device.

Operation Path

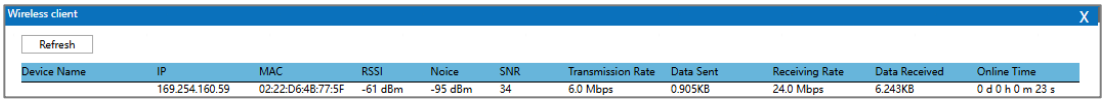
Please open: Status Center > Wireless Status.

Interface Description

The network status interface is as follows:



When the number of wireless users is greater than 0, click on the number of wireless users, and the detailed information of wireless users will be displayed as follows:



4.4 Device Statistics

Function Description

In device statistics, you can view the information statistics of data sent and received by this device.

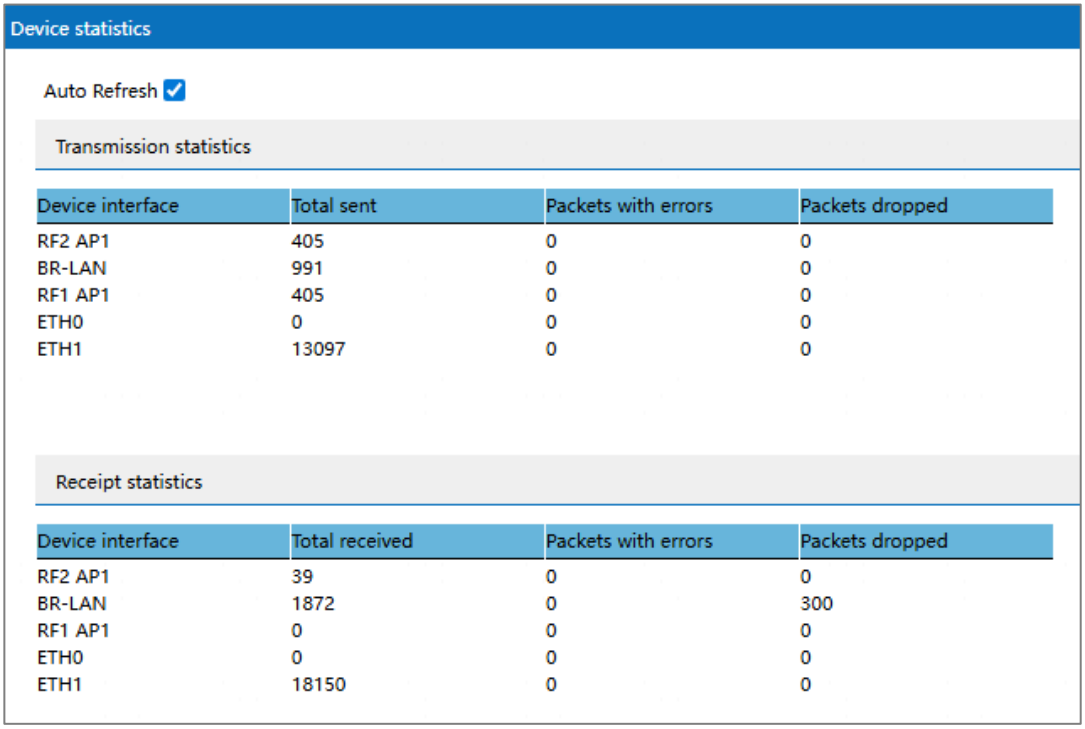
Operation Path

Please open: Status Center > Device Statistics.

Interface Description

The device statistics interface is as follows:

Copyright © 3onedata Co., Ltd.



4.5 ARP Table

Function Description

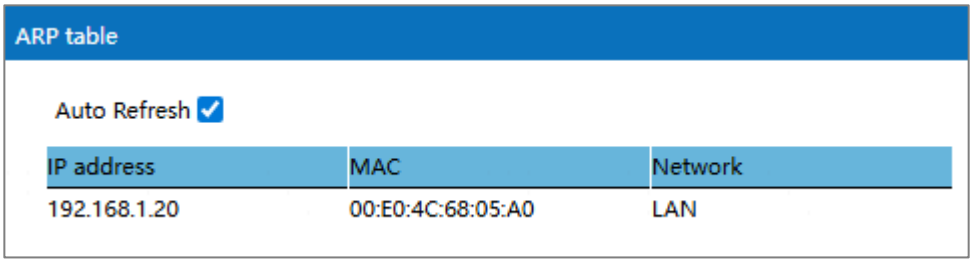
In ARP table, you can view the IP address and MAC information detected in the same LAN.

Operation Path

Please open: Status Center > ARP Table.

Interface Description

ARP table interface is as follows:



Copyright © 3onedata Co., Ltd.

4.6 Route Table

Function Description

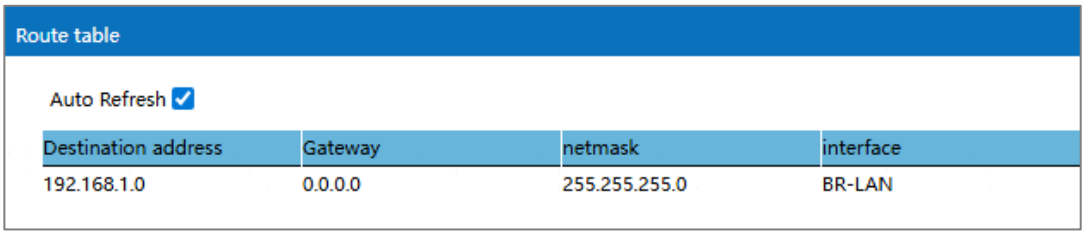
In the routing table, you can view the destination address and interface of data forwarding.

Operation Path

Please open: Status Center > Route Table.

Interface Description

The route table interface is as follows:



4.7 Seamless Roaming

Notes

Seamless roaming is displayed and takes effect only when the working mode of the device is dual-link mode. This function is not available in other modes.

Function Description

On the page of "Seamless Roaming", users can check the signal strength range of the main link, the difference of minimum roaming signal strength, the current state and roaming history of seamless roaming, and also export the roaming history information.

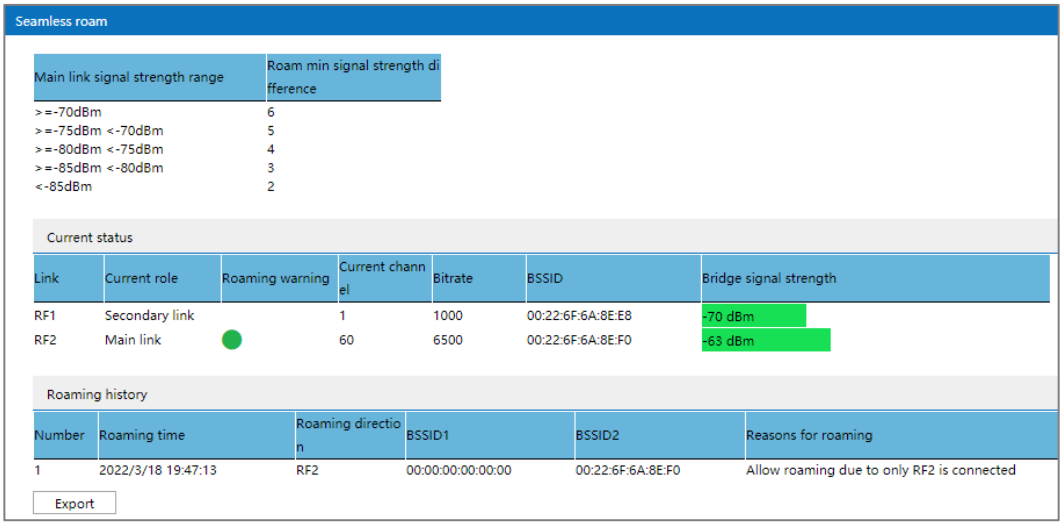
Operation Path

In the navigation bar, choose "Seamless Roaming."

Interface Description

The seamless roaming interface is as follows:

Copyright © 3onedata Co., Ltd.



Description of main elements of seamless roaming interface:

Interface Element	Description
Main Link Signal Strength Range	Main link signal strength range list
Roaming Minimum Signal Strength Difference	Minimum signal strength difference that triggers roaming. When the difference between the signal strength of the sub link and the signal strength of the main link is greater than this value, roaming is triggered, otherwise there is no roaming
Current Status	**Current status display bar**
Link	Display wireless interface RF1 or RF2
Current Role	Display the current role of the link: main link/sub link
Roaming Warning	Prompt whether the current roaming conditions have been met and whether the roaming is about to take place, values are: • ⚠ : At present, the roaming conditions have been satisfied, and the roaming will happen soon. • ● : At present, the roaming conditions are not satisfied, so there is no need for roaming
Current Channel	Displays the current channel where the link is located
Bitrate	Displays the current link information transmission rate
BSSID	Displays the MAC address of the wireless network where the current link is bridged
Bridge Signal Strength	Displays the strength of the current link bridge signal in dBm. The stronger the signal strength, the longer the green shading length displayed on the interface
Roaming History	**Roaming history display bar**

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	Note: Displays only the last 20 roaming records.
Number	Displays the serial number of roaming history
Roaming Time	Displays the time when this roaming occurs
Roaming Direction	Display the main link after roaming, for example: when the value of roaming direction is RF2, it means roaming from RF1 to RF2
Bssid1	Display BSSID1 information
Bssid2	Display BSSID2 information
Reasons for Roaming	Reason why the roaming was triggered
Export	Click the "Export" button to export all roaming history for viewing

Copyright © 3onedata Co., Ltd.

5 Log Center

5.1 Wireless User Log

Function Description

On the "Wireless User Log" page of system tools, user can check the device wireless user log message.

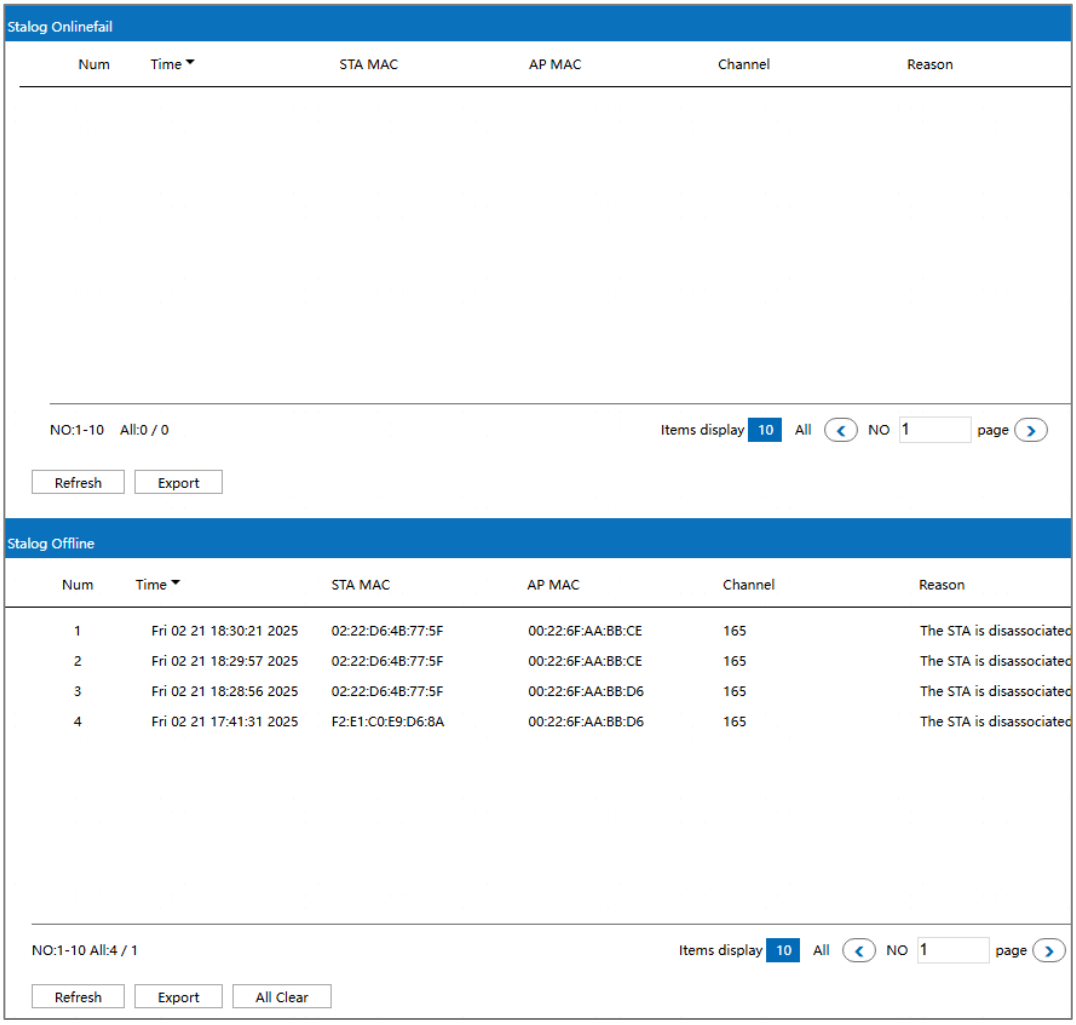
Operation Path

Please open: "Log Center > Wireless User Log".

Interface Description

Wireless user log interface is as follows:

3onedata proprietary and confidential
Copyright © 3onedata Co., Ltd.



The main element configuration description of wireless user log interface:

Interface Element	Description
Num	Log messages display sequence.
Time	The date and time filter button for log information. Note: Click the "Time" button to filter the start date and end date.
STA MAC	STA MAC is the MAC address of the device terminal. Example: 2A:66:38:98:FD:69.
AP MAC	AP MAC is the MAC address used by device users for WiFi. For example: 00:22:6F: 25:10:20.
Channel	The WiFi communication channel used by device users. For example: 161.
Reason	Detailed description of log online failures and offline records.
Refresh	Click the "Refresh" button to regain the latest log information of the device. Note: System log can store maximum 256KB log messages of the device in the most recent period.

Copyright © 3onedata Co., Ltd.

Interface Element	Description
Export	Click "Export" to save the log messages to the local host in the form of ".txt".
Clear All	Click the 'Clear All' button to delete the current wireless user log information.
Items display	"Items display", log information display mode, options are as follows: • 10: Display 10 log messages per page; • All: a single page displays all log information.

5.2 Seamless Roaming Log


Notes

This page is displayed when the device works in dual link mode.

Function Description

On the "Seamless Roaming Log" page of system tools, user can check the device roaming message.

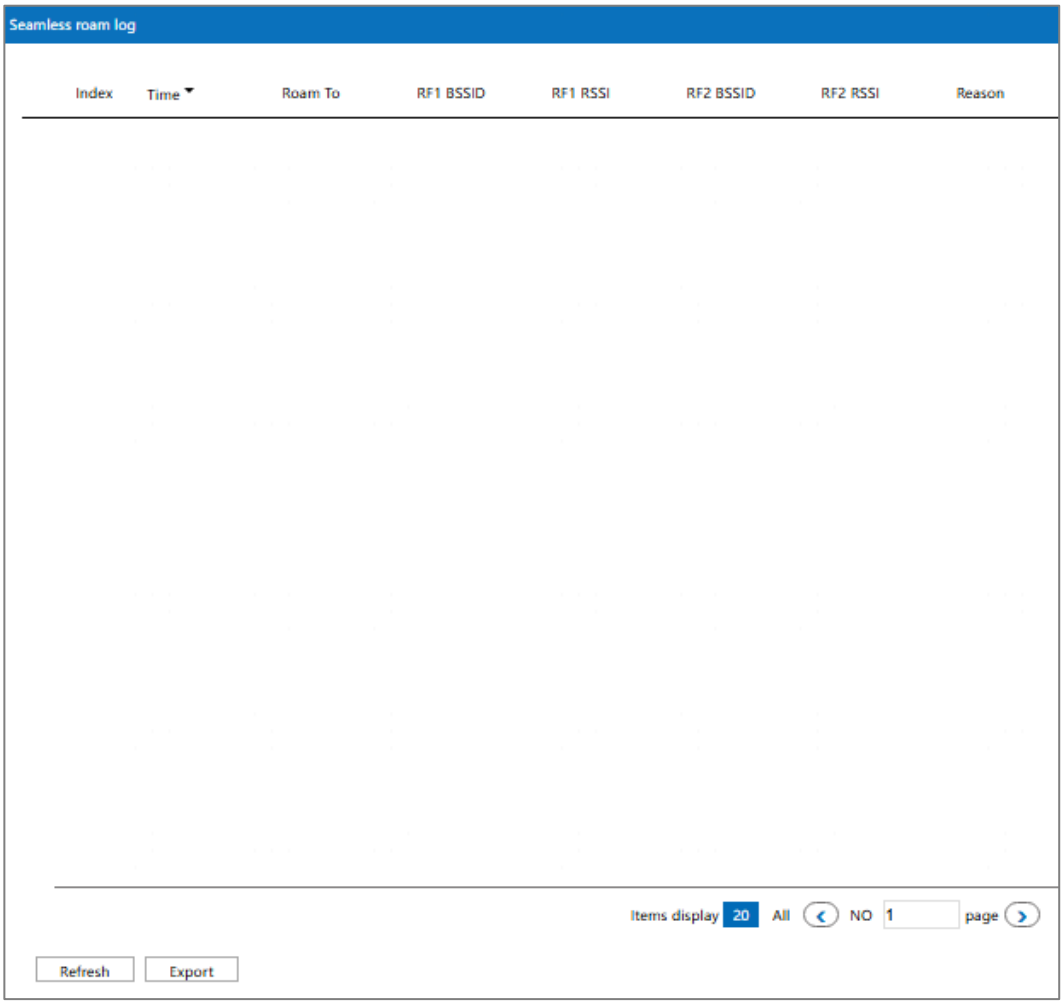
Operation Path

Please open in order: "Log Center > Seamless Roaming Log".

Interface Description

Roaming log interface is as follows:

Copyright © 3onedata Co., Ltd.



The main element configuration description of seamless roaming log interface:

Interface Element	Description
Index	Display the number of times the device has roamed.
Time	The date and time filter button for log information. Note: Click the "Time" button to filter the start date and end date.
Roam To	Display that interface information of the main link to which the device is currently connected.
RF1 BSSID	Display the device RF1 BSSID information after roaming.
RF1 RSSI	Display the device RF1 signal strength after roaming.
RF2 BSSID	Display the device RF2 BSSID information after roaming.
RF2 RSSI	Display the device RF2 signal strength after roaming.
Reason	Detailed description of log online failures and offline records.
Refresh	Click the "Refresh" button to regain the latest log information of the device.

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	Note: System log can store maximum 256KB log messages of the device in the most recent period.
Export	Click "Export" to save the log messages to the local host in the form of ".txt".
Clear All	Click the 'Clear All' button to delete the current wireless user log information.
Items display	"Items display", log information display mode, options are as follows: • 20: Display 20 log messages per page; • All: a single page displays all log information.

5.3 System Log

Function Description

On the "System log" page of system tools, user can check the device system log message.

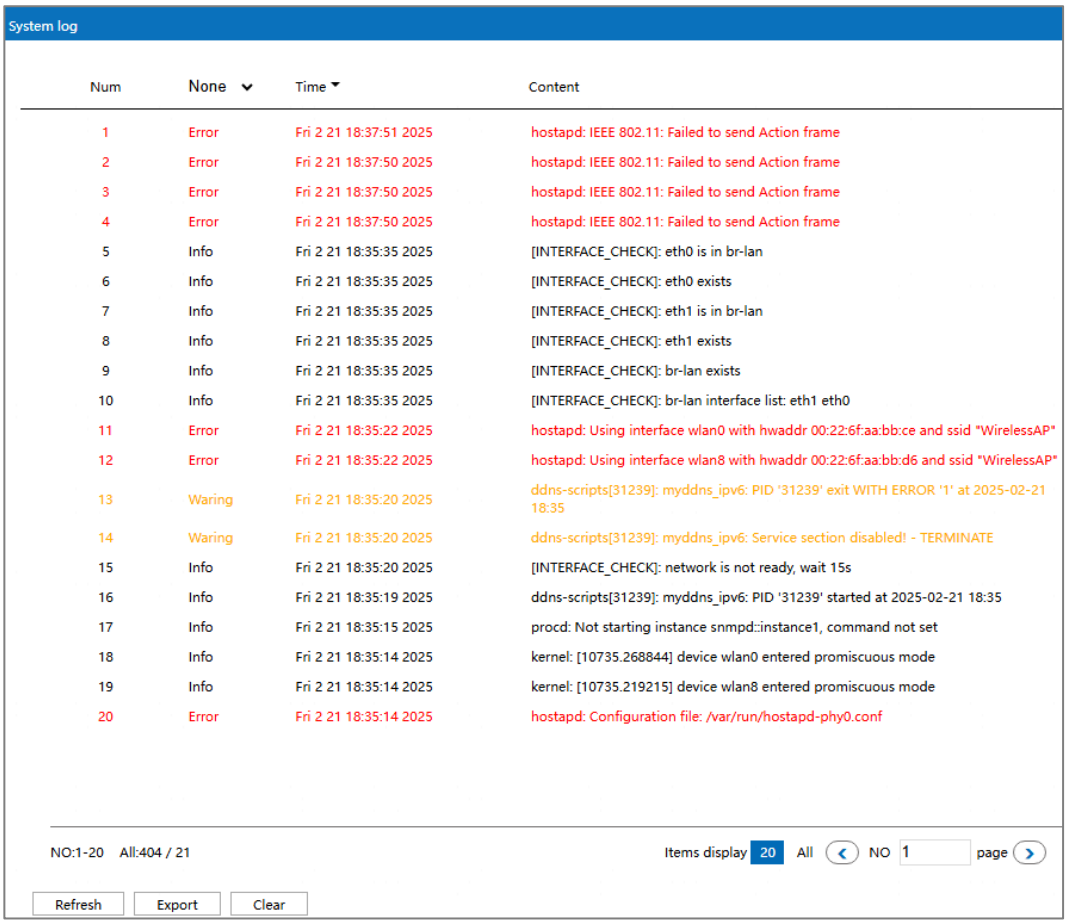
Operation Path

Please open: “Log Center > System Log".

Interface Description

The system log interface is as follows:

Copyright © 3onedata Co., Ltd.



The main element configuration description of system log interface:

Interface Element	Description
Num	Log messages display sequence.
None	Log message type, options as follows: • NONE: display all information; • Warning: alarm information; • Error: error information.
Time	The date and time filter button for log information. Note: Click the "Time" button to filter the start date and end date.
Content	A detailed description of the log contents.
Refresh	Click the "Refresh" button to regain the latest log information of the device. Note: System log can store maximum 256KB log messages of the device in the most recent period.
Export	Click "Export" to save the log messages to the local host in the form of ".txt".
Clear	Click the “Clear” button to delete the current system log

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	information record.
Items display	"Items display", log information display mode, options are as follows: • 20: Display 20 log messages per page; • All: a single page displays all log information.

5.4 Serial Log

Function Description

On the system tool ‘Serial Port Log’ page, you can enable, view, export, and clear the log of the serial port.

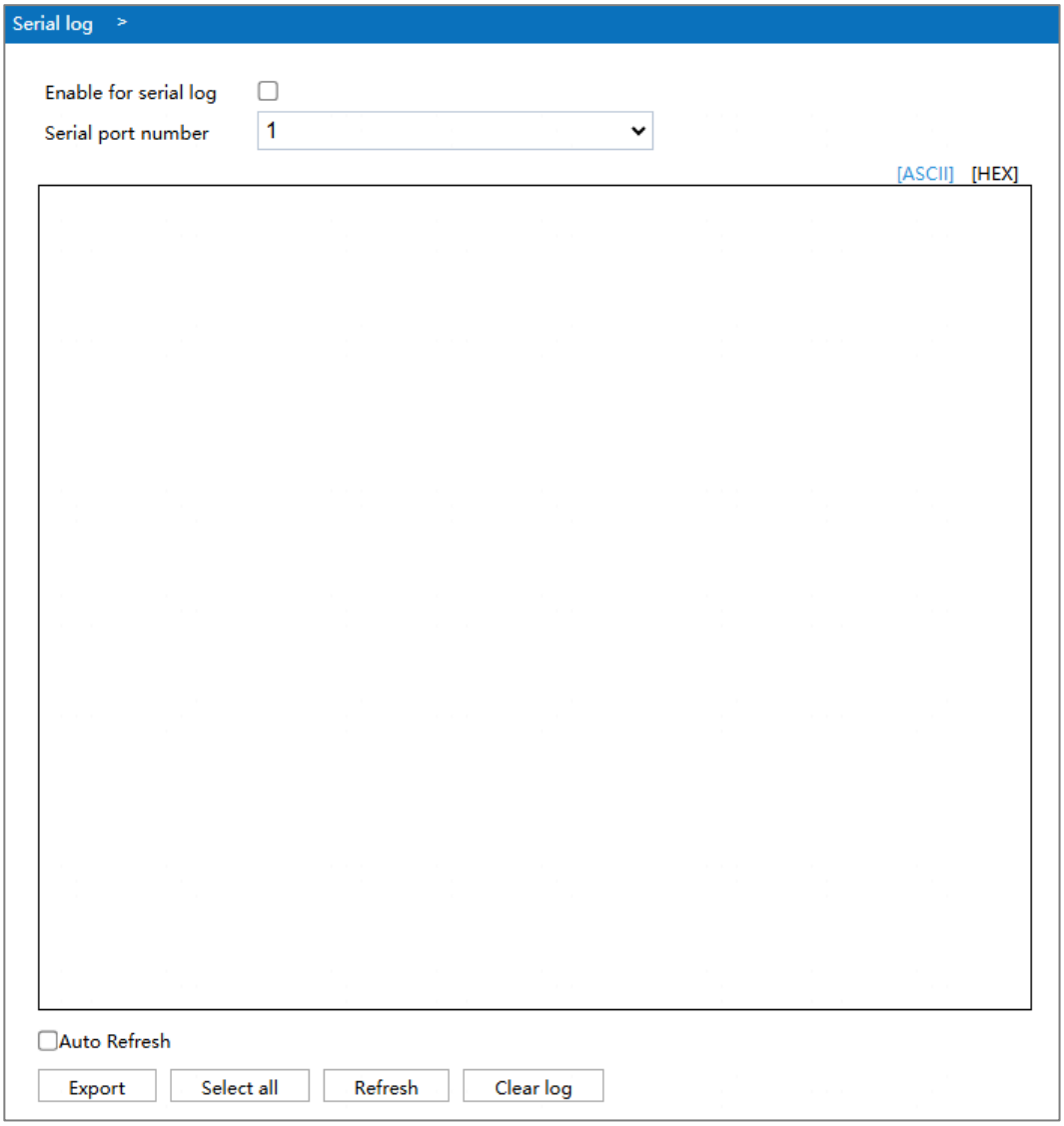
Operation Path

Please open: "Log Center > Serial Port Log".

Interface Description

The system log interface is as follows:

Copyright © 3onedata Co., Ltd.



Main elements configuration description of serial log interface:

Interface Element	Description
Enable for serial log	Serial log switch check box, check it to enable serial log function to record serial data communication.
Serial port number	The drop-down list of serial number, you can choose the corresponding serial number.
[ASCII] [HEX]	Click to display the communication data in the serial port log in ASCII characters or HEX.
Auto-refresh	The check box of automatic refresh, and check it to automatically refresh the serial log information of the page every 30 seconds.
Refresh	Click the "Refresh" button to regain the latest log information of the device. Note:

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	System log can store maximum 256KB log messages of the device in the most recent period.
Export	Click "Export" to save the log messages to the local host in the form of ".txt".
All	Click the 'Select All' button to select all current serial port log contents.
Clear log	Click the “Clear log” button to clear current system serial log information.

Copyright © 3onedata Co., Ltd.

6 Network

6.1 LAN Settings

LAN settings are slightly different in different modes and different connection modes, which are introduced separately below.

- LAN settings 1
  - Route.
- LAN settings 2
  - Universal bridging in bridge/client/dual link mode;
  - Wireless NAT of Client/Dual Link Mode.
- LAN settings 3
  - AP;
  - "WDS bridge" in bridge mode;
  - “Universal bridging” in client mode.

6.1.1 LAN Settings 1

Function Description

In route mode, the static LAN IP address and DHCP server parameters can be set on the "LAN Settings" page of network settings, here: in route mode, the DHCP server function is enabled by default. DHCP (Dynamic Host Configuration Protocol) is a LAN protocol which uses UDP protocol to allocate IP address to internal network automatically and improve IP address utilization. Client in network environment can acquire dynamic IP address, Gateway address, DNS server address and other information from DHCP server.

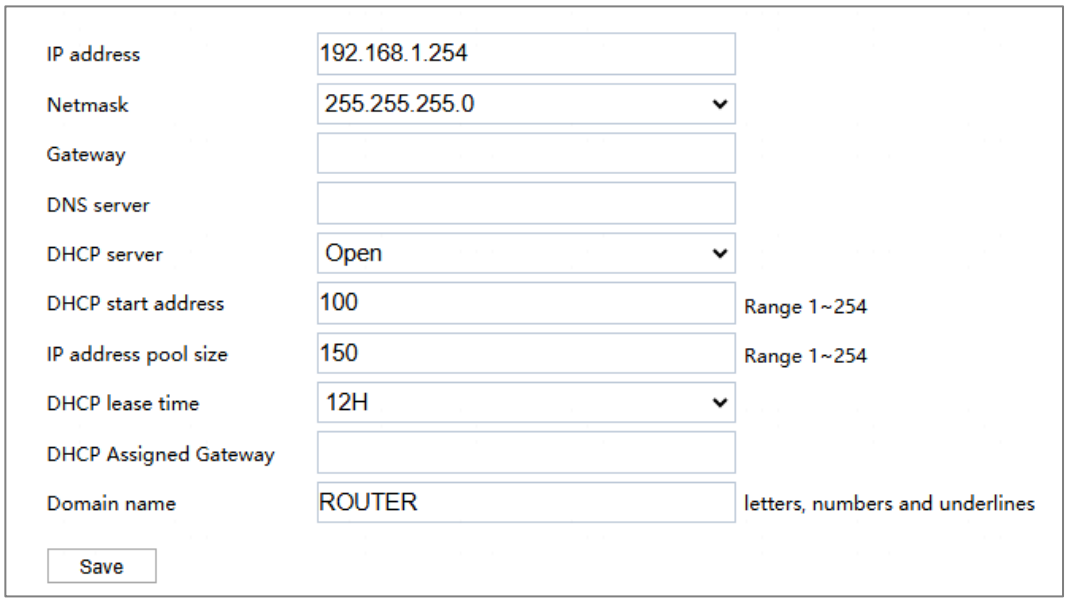
Operation Path

Please open in order: "Network Settings > LAN Settings".

Copyright © 3onedata Co., Ltd.

Interface Description

LAN settings interface is as follows:



The main element configuration description of LAN settings interface:

Interface Element	Description
IP address	IP address of the device LAN port.
Netmask	Drop-down list of netmask.
DHCP Server	The drop-down list of DHCP server. The options are as follows: • Disable; • Enable.
DHCP start address	The minimum IP address host number allocated by DHCP address pool. Value range is 1-254.
IP address pool size	The maximum IP address number allocated by DHCP address pool. Value range is 1-254.
DHCP lease time	Valid time of IP address distributed by DHCP address pool, it defaults to 12 hours. Drop-down list of time unit, options as follows: • 30m; • 1 hour; • 6h; • 12h; • 1 day; • 3 days; • 7 days.
DHCP Assigned	DHCP assigns gateway IP address.

Copyright © 3onedata Co., Ltd.

Interface Element	Description
Gateway	
Domain name	DHCP domain name is composed of letter, number and underline; it supports 0-32 valid characters.

6.1.2 LAN Settings 2

Function Description

Under the universal bridge of bridge/client mode, and under the wireless NAT of client mode, the static intranet IP address and DHCP server parameters can be set on the "Intranet Settings" page of network settings, here:

- In the bridge/client mode, when the connection mode is universal bridge, the DHCP server function is disabled by default.
- In the client mode, when the connection mode is wireless NAT, the DHCP server function is enabled by default.

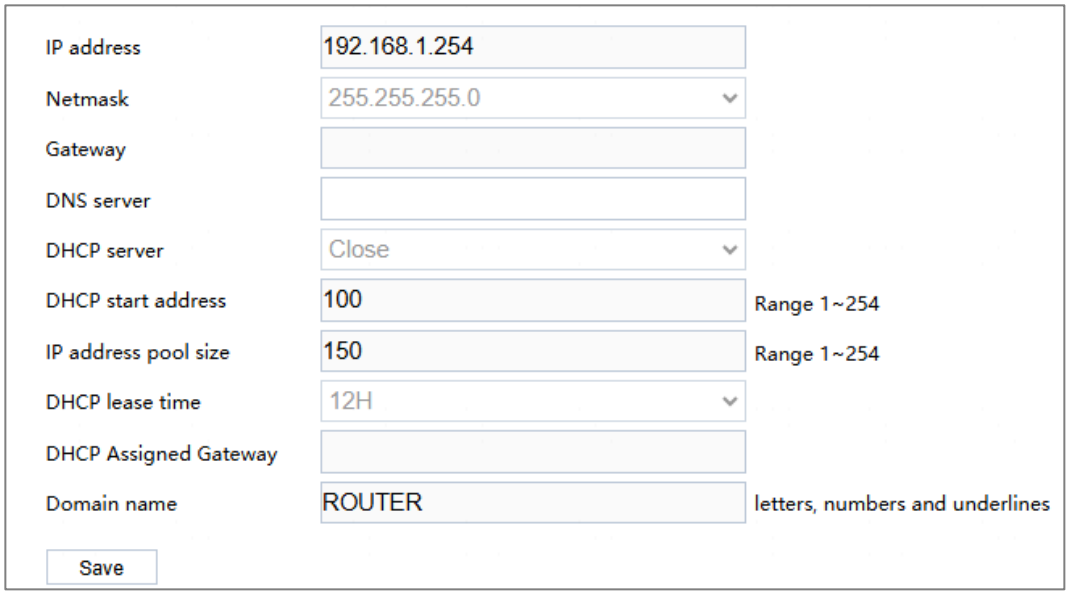
DHCP (Dynamic Host Configuration Protocol) is a LAN protocol which uses UDP protocol to allocate IP address to internal network automatically and improve IP address utilization. Client in network environment can acquire dynamic IP address, Gateway address, DNS server address and other information from DHCP server.

Operation Path

Please open in order: "Network Settings > LAN Settings".

Interface Description 1:

LAN settings interface is as follows:



Copyright © 3onedata Co., Ltd.

The main element configuration description of LAN settings interface:

Interface Element	Description
IP address	IP address of the device LAN port.
Netmask	Drop-down list of netmask.
Gateway	Default gateway address of LAN.
DNS server	DNS server address.
DHCP Server	The drop-down list of DHCP server. The options are as follows: • Disable; • Enable.
DHCP start address	The minimum IP address host number allocated by DHCP address pool. Value range is 1-254.
IP address pool size	The maximum IP address number allocated by DHCP address pool. Value range is 1-254.
DHCP lease time	Valid time of IP address distributed by DHCP address pool, it defaults to 12 hours. Drop-down list of time unit, options as follows: • 30m; • 1 hour; • 6h; • 12h; • 1 day; • 3 days; • 7 days.
DHCP Assigned Gateway	DHCP assigns gateway IP address.
Domain name	DHCP domain name is composed of letter, number and underline; it supports 0-32 valid characters.

6.1.3 LAN Settings 3

Function Description

On the “LAN Settings” page of other modes, static IP and dynamic access are supported in setting LAN IP. The DHCP server is disabled by default.

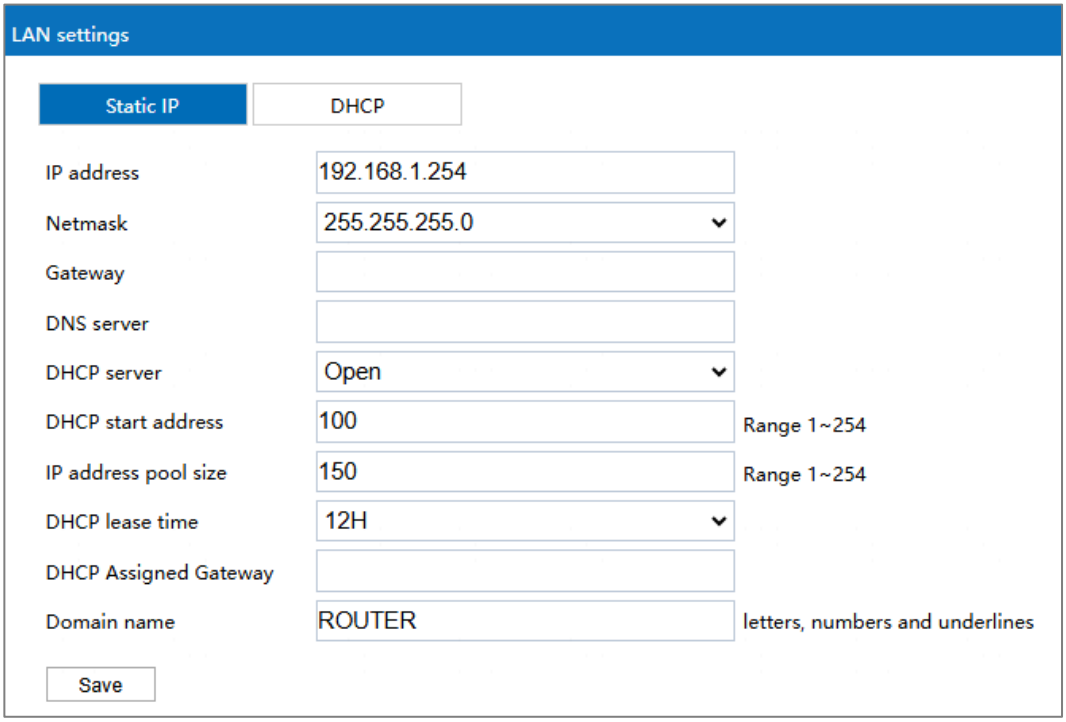
Operation Path

Please open in order: "Network Settings > LAN Settings".

Copyright © 3onedata Co., Ltd.

Interface Description 1: Static IP

Static IP interface is as follows:



The main element configuration description of static IP interface:

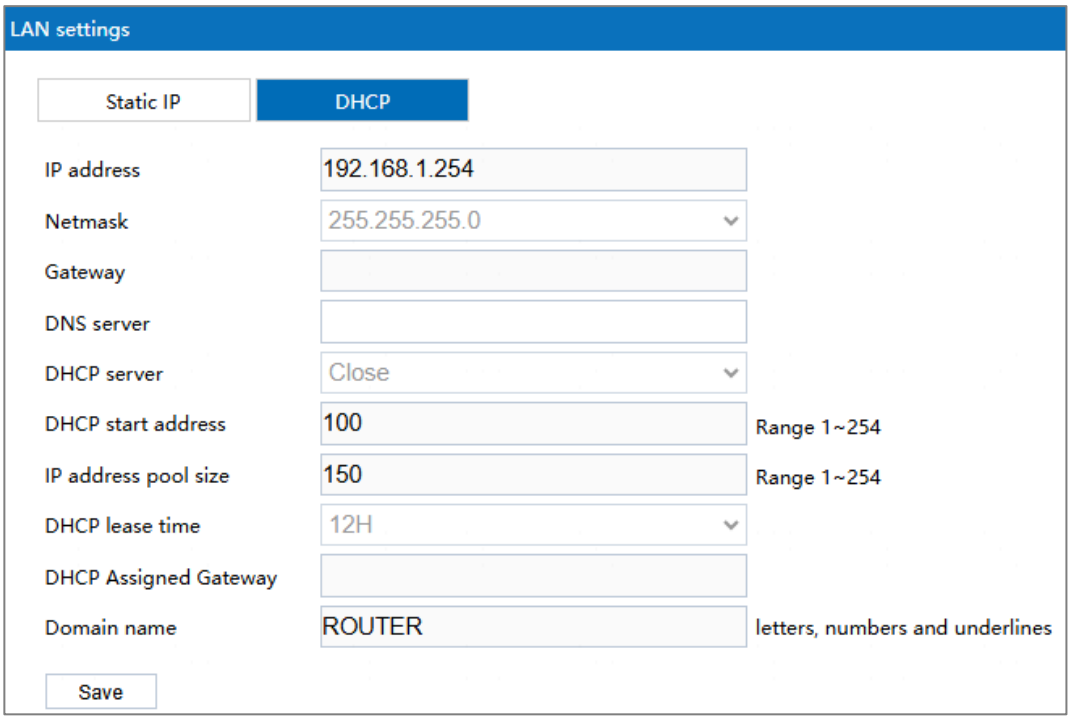
Interface Element	Description
IP address	IP address of the device LAN port.
Netmask	Drop-down list of netmask.
Gateway	Default gateway address of LAN.
DNS server	DNS server address.
DHCP server	The drop-down list of DHCP server. The options are as follows: • Disable; • Enable.
DHCP start address	The minimum IP address host number allocated by DHCP address pool. Value range is 1-255.
IP address pool size	The maximum IP address number allocated by DHCP address pool. Value range is 1-255.
DHCP lease time	Valid time of IP address distributed by DHCP address pool, it defaults to 12 hours. Drop-down list of time unit, options as follows: • 30m; • 1 hour; • 6h;

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	• 12h; • 1 day; • 3 days; • 7 days.
DHCP Assigned Gateway	DHCP assigns gateway IP address
Domain name	DHCP domain name is composed of letter, number and underline; it supports 0-32 valid characters.

Interface Description 2: DHCP

DHCP interface is as follows:



Main elements configuration description of DHCP interface:

Interface Element	Description
IP address	Automatically acquired IP address of the device LAN port.
Netmask	Drop-down list of netmask.
Gateway	Default gateway address of LAN.
DNS server	DNS server address.
DHCP server	The drop-down list of DHCP server. The options are as follows: • Disable; • Enable.

Copyright © 3onedata Co., Ltd.

Interface Element	Description
DHCP start address	The minimum IP address host number allocated by DHCP address pool. Value range is 1-255.
IP address pool size	The maximum IP address number allocated by DHCP address pool. Value range is 1-255.
DHCP lease time	Valid time of IP address distributed by DHCP address pool, it defaults to 12 hours. Drop-down list of time unit, options as follows: • 30m; • 1 hour; • 6h; • 12h; • 1 day; • 3 days; • 7 days.
DHCP Assigned Gateway	DHCP assigns gateway IP address
Domain name	DHCP domain name is composed of letter, number and underline; it supports 0-32 valid characters.

6.2 WAN Settings

Function Description

On the "WAN settings" page of network, user can configure three connection modes between WAN port and WAN:

- PPPoE;
- Static IP;
- DHCP.

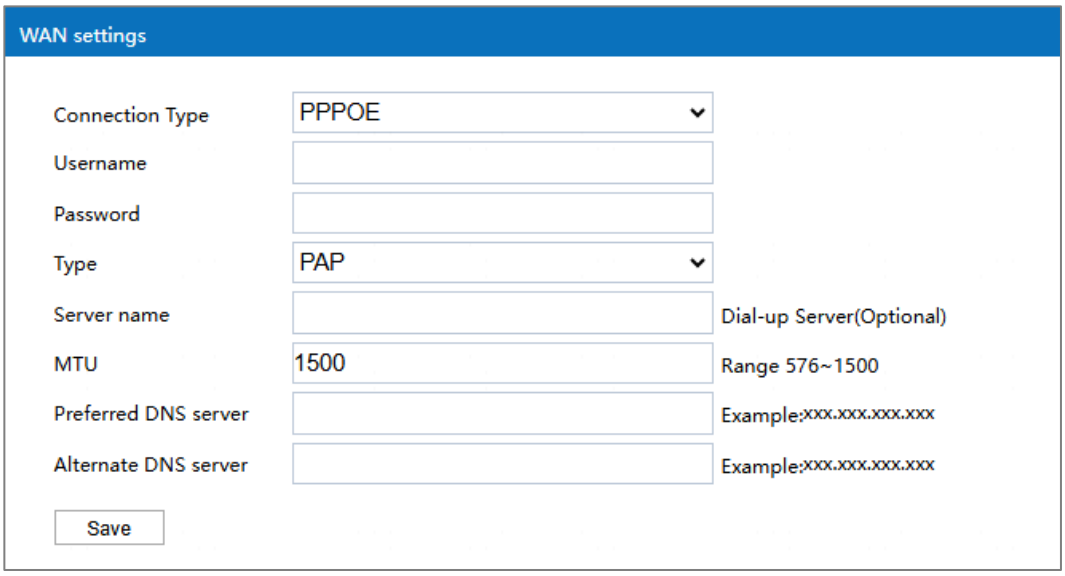
Operation Path

Please open in order: "Network > WAN settings".

Interface Description 1: PPPoE

PPPoE interface is as follows:

Copyright © 3onedata Co., Ltd.



The main element configuration description of PPPoE interface:

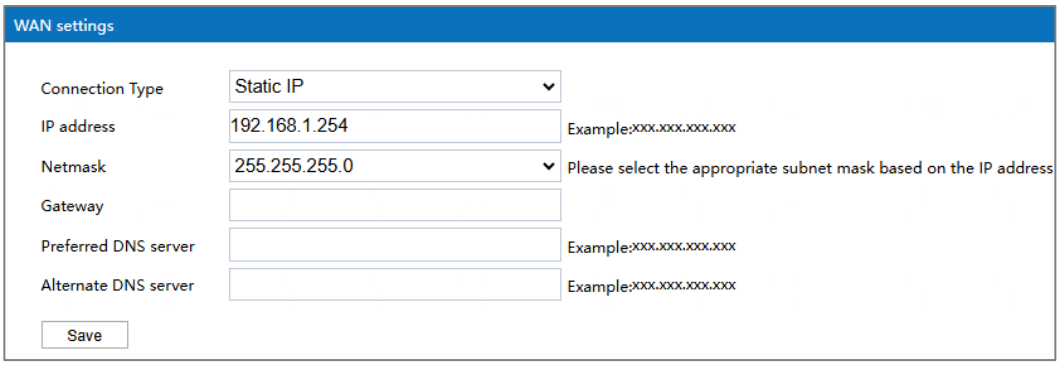
Interface Element	Description
PPPoE	PPPoE tab, it supports PPPoE to achieve Internet access.
Username	User name of PPPoE connection. Note: User name, password and service name are provided by network provider.
Password	Password of PPPoE connection. Note: User name, password and service name are provided by network provider.
Type	The type of PPPoE dialing: • PAP: Password Authentication Protocol, which sends user name or password over the network; • CHAP: Challenge Handshake Authentication Protocol, it only transmits user name; • PAP/CHAP: uses Password Authentication Protocol or Challenge Handshake Authentication Protocol.
Server name	Dial-up server name, not fill if network provider doesn't supply. Note: User name, password and service name are provided by network provider.
MTU	The maximum length of a single message that can get through in PPPoE protocol dialing, with a value range of 576-1500 bytes. Note: • MTU (Maximum Transmission Unit), the device will divide

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	the data packet into multiple small packets if the maximum length of single message exceeds the given MTU value; so reasonable setting can optimize network speed; • MTU value is recommended to be same to the one of superior router.
Preferred DNS server	Address of primary DNS server.
Alternate DNS server	Address of backup DNS server. Note: ● The priority level of primary DNS server address is higher than the one of backup DNS server address; ● The priority level of manually setting DNS server address is higher than the one of automatically acquired DNS server address.

Interface Description 2: Static IP

Static IP interface is as follows:



The main element configuration description of static IP interface:

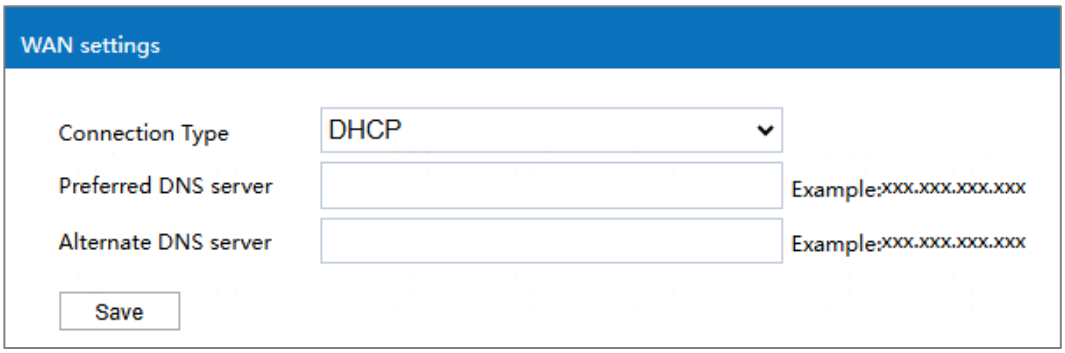
Interface Element	Description
Connection type	Static IP tab, network information configuration of device WAN.
IP address	The fixed IP address provided by network provider or WAN.
Netmask	Drop-down list of netmask.
Gateway	Default gateway address provided by network provider or WAN.
Preferred DNS server	Address of primary DNS server.
Alternate DNS server	Backup DNS server address, DNS server address offered by network provider or WAN. Note: ● The priority level of primary DNS server address is higher than the one of backup DNS server address;

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	• The priority level of manually setting DNS server address is higher than the one of automatically acquired DNS server address.

Interface Description 3: DHCP

DHCP interface is as follows:



Main elements configuration description of DHCP interface:

Interface Element	Description
Connection Type	In the dynamic acquisition tab, the WAN network information of the device is automatically obtained. Note: The device automatically acquires the network address information distributed by network provider or WAN.
Preferred DNS server	Address of primary DNS server.
Alternate DNS server	Address of backup DNS server. Note: • The priority level of primary DNS server address is higher than the one of backup DNS server address; • The priority level of manually setting DNS server address is higher than the one of automatically acquired DNS server address.

6.3 Wireless Settings-AP

Notes

The wireless setting page is different in different working modes:

- Routing, AP mode, factory default mode: only the "Wireless Settings -AP" page is displayed.
- Bridge Mode: The “Wireless Settings-AP” page and the “Wireless Settings-Client” page

Copyright © 3onedata Co., Ltd.

are displayed.

- Client mode: only the “Wireless Settings-Client” page is displayed.

6.3.1 RF 1 Configuration

Notes

- The "RF Configuration" page of the 2E single-frequency device is displayed, which is the same as the "RF 1 Configuration" of the 2E2E dual-frequency device.
- The 2E2E dual-band device displays "RF 1 Configuration" and "RF 2 Configuration" pages.

Function Description

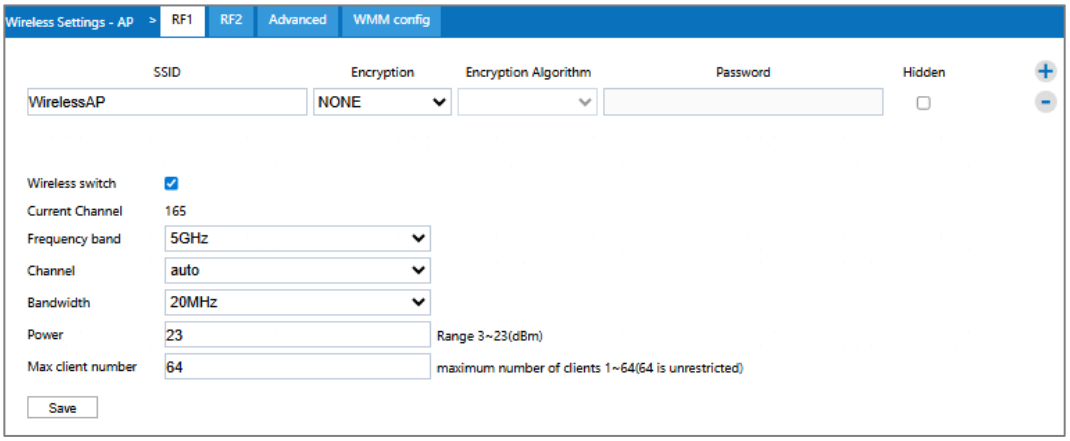
On the "RF 1 Configuration" page of wireless settings, user can configure relative parameters of RF 1 wireless network, such as wireless switch, hidden SSID, new SSID, channel, bandwidth, max client number and other wireless configuration.

Operation Path

Please open in order: "Network > Wireless Settings-AP > RF1".

Interface Description

The RF1 configuration interface is as follows:



The main element configuration description of RF1 configuration interface:

Interface Element	Description
SSID	SSID name of wireless network, it supports 1-32 characters.
Encryption	Encryption mode of wireless network, options as follows: • NONE;

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	• WPA2: WiFi Protected Access II is suitable for the individual or average family network. It adopts pre-shared key and supports TKIP (Temporal Key Integrity Protocol) and AES (Advanced Encryption Standard) encryption modes. • WPA/WPA2: mixed mode of WPA and WPA2, it uses WPA or WPA2 encryption algorithm. • WPA3: the third version of Wi-Fi protected access, with further security improvements over WPA2, longer encryption keys, and SAE authentication. • WPA2/WPA3: mixed mode of WPA2 and WPA3, it uses WPA2 or WPA3 encryption algorithm. Note: WPA2/WPA3 only supports personal edition and doesn't support enterprise edition currently. Other encryption algorithms are supported by both of them.
Encryption Algorithm	Encryption algorithm of wireless network, options as follows: • AES (CCMP): advanced encryption standard; • TKIP/AES: the key integrates 2113 protocol or advanced encryption standard temporarily. Note: When the encryption method is WPA2/WPA3 and WPA3, only AES(CCMP) encryption algorithm is supported.
Password	Password of wireless network, it supports 8-63 valid characters.
Wireless switch	Wireless Network function enable checkbox, check to enable wireless network function.
Hidden	Hidden SSID function enable checkbox, check to enable hidden SSID function. SSID name of the device wireless signal will be hidden and displayed as unnamed network. Please enter the SSID name of wireless signal manually while connecting hidden wireless signal.
Current channel	The working channel of current wireless network.
Frequency band	The wireless frequency band corresponding to the current wireless setting, the options are as follows: • 2.4GHz • 5GHz Note: When the device is in bridge mode, RF 1 is used for bridge by default, and the channel and frequency band information will automatically be consistent with the bridge information.

Copyright © 3onedata Co., Ltd.

Interface Element	Description
Channel	Working channel of 2.4G wireless network, options are as follows: • Auto: channel self-adaptation; • 1: main frequency band 2412MHz, frequency range 2401~2423MHz; • 2: main frequency band 2417MHz, frequency range 2406~2428MHz; • 3: main frequency band 2422MHz, frequency range 2411~2433MHz; • 4: main frequency band 2427MHz, frequency range 2416~2438MHz; • 5: main frequency band 2432MHz, frequency range 2421~2443MHz; • 6: main frequency band 2437MHz, frequency range 2426~2448MHz; • 7: main frequency band 2442MHz, frequency range 2431~2453MHz; • 8: main frequency band 2447MHz, frequency range 2436~2458MHz; • 9: main frequency band 2452MHz, frequency range 2441~2463MHz; • 10: main frequency band 2457MHz, frequency range 2446~2468MHz; • 11: main frequency band 2462MHz, frequency range 2451~2473MHz; • 12: main frequency band 2467MHz, frequency range 2456~2478MHz, this frequency band is not open in America, so it's temporarily unavailable; • 13: main frequency band 2472MHz, frequency range 2461~2483MHz, this frequency band is not open in America, so it's temporarily unavailable; Working channel of 5G wireless network, options are as follows: • 36: main frequency band 5180MHz, frequency range 5170~5190MHz; • 40: main frequency band 5200MHz, frequency range 5190~5210MHz; • 44: main frequency band 5220MHz, frequency range 5210~5230MHz; • 48: main frequency band 5230MHz, frequency range 5210~5250MHz;

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	• 52: main frequency band 5260MHz, frequency range 5250~5270MHz; • 56: main frequency band 5280MHz, frequency range 5270~5290MHz; • 60: main frequency band 5300MHz, frequency range 5290~5310MHz; • 64: main frequency band 5320MHz, frequency range 5310~5330MHz; • 149: main frequency band 5745MHz, frequency range 5735~5755MHz; • 153: main frequency band 5765MHz, frequency range 5755~5775MHz; • 157: main frequency band 5785MHz, frequency range 5775~5795MHz; • 161: main frequency band 5805MHz, frequency range 5795~5815MHz; • 165: main frequency band 5825MHz, frequency range 5815~5835MHz. Note: • In order to improve the network performance, please choose unused channel in the device working environment. • Different frequency bands and countries support different channel options.
Bandwidth	Channel bandwidth of wireless network, it defaults to 20MHz, options are as follows: • 20MHz; • 40MHz. Note: 40MHz bandwidth binds two 20MHz bandwidth channels together to gain the throughput capacity more than twice of the 20MHz bandwidth.
Power	Transmission power of device wireless signal. Note: • Greater the transmitted power, better the transmittability, longer the transmission range, but stronger the interference; • Different device may have different transmitted power range.
Max client number	Maximum client number of the device wireless signal, value range 1-64, when the value is 64, it represents the unlimited connected clients number.

Copyright © 3onedata Co., Ltd.

6.3.2 RF 2 Configuration

Function Description

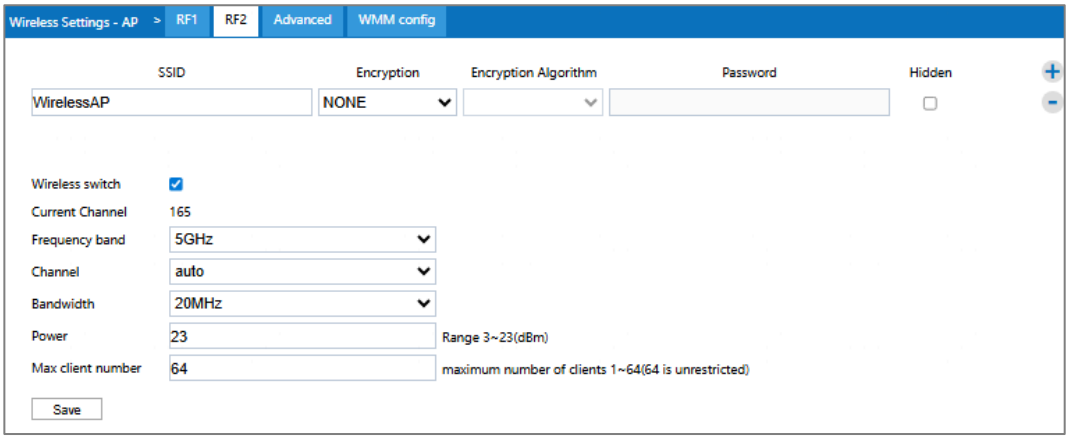
On the "RF 2 Configuration" page of wireless settings, user can configure relative parameters of RF 2 wireless network, such as wireless switch, hidden SSID, new SSID, channel, bandwidth, max client number and other wireless configuration.

Operation Path

Please open in order: "Network > Wireless Settings-AP > RF2".

Interface Description

The RF 2 configuration interface is as follows:



The main element configuration description of RF 2 configuration interface:

Interface Element	Description
SSID	SSID name of wireless network, it supports 1-32 characters.
Encryption	Encryption mode of wireless network, options as follows: • NONE; • WPA2: WiFi Protected Access II is suitable for the individual or average family network. It adopts pre-shared key and supports TKIP (Temporal Key Integrity Protocol) and AES (Advanced Encryption Standard) encryption modes. • WPA/WPA2: mixed mode of WPA and WPA2, it uses WPA or WPA2 encryption algorithm. • WPA3: the third version of Wi-Fi protected access, with further security improvements over WPA2, longer encryption keys, and SAE authentication. • WPA2/WPA3: mixed mode of WPA2 and WPA3, it uses WPA2 or WPA3 encryption algorithm.

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	Note: WPA2/WPA3 only supports personal edition and doesn't support enterprise edition currently. Other encryption algorithms are supported by both of them.
Encryption Algorithm	Encryption algorithm of wireless network, options as follows: • AES (CCMP): advanced encryption standard; • TKIP/AES: the key integrates 2113 protocol or advanced encryption standard temporarily. Note: When the encryption method is WPA2/WPA3 and WPA3, only AES(CCMP) encryption algorithm is supported.
Password	Password of wireless network, it supports 8-63 valid characters.
Wireless switch	Wireless Network function enable checkbox, check to enable wireless network function.
Hidden	Hidden SSID function enable checkbox, check to enable hidden SSID function. SSID name of the device wireless signal will be hidden and displayed as unnamed network. Please enter the SSID name of wireless signal manually while connecting hidden wireless signal.
Current channel	The working channel of current wireless network.
Frequency band	The wireless frequency band corresponding to the current wireless setting, the options are as follows: • 2.4GHz • 5GHz Note: When the device is in bridge mode, RF 1 is used for bridge by default, and the channel and frequency band information will automatically be consistent with the bridge information.
Channel	Working channel of 2.4G wireless network, options are as follows: • Auto: channel self-adaptation; • 1: main frequency band 2412MHz, frequency range 2401~2423MHz; • 2: main frequency band 2417MHz, frequency range 2406~2428MHz; • 3: main frequency band 2422MHz, frequency range 2411~2433MHz; • 4: main frequency band 2427MHz, frequency range 2416~2438MHz; • 5: main frequency band 2432MHz, frequency range

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	2421~2443MHz; • 6: main frequency band 2437MHz, frequency range 2426~2448MHz; • 7: main frequency band 2442MHz, frequency range 2431~2453MHz; • 8: main frequency band 2447MHz, frequency range 2436~2458MHz; • 9: main frequency band 2452MHz, frequency range 2441~2463MHz; • 10: main frequency band 2457MHz, frequency range 2446~2468MHz; • 11: main frequency band 2462MHz, frequency range 2451~2473MHz; • 12: main frequency band 2467MHz, frequency range 2456~2478MHz, this frequency band is not open in America, so it's temporarily unavailable; • 13: main frequency band 2472MHz, frequency range 2461~2483MHz, this frequency band is not open in America, so it's temporarily unavailable; Working channel of 5G wireless network, options are as follows: • Auto: channel self-adaptation; • 36: main frequency band 5180MHz, frequency range 5170~5190MHz; • 40: main frequency band 5200MHz, frequency range 5190~5210MHz; • 44: main frequency band 5220MHz, frequency range 5210~5230MHz; • 48: main frequency band 5230MHz, frequency range 5210~5250MHz; • 52: main frequency band 5260MHz, frequency range 5250~5270MHz; • 56: main frequency band 5280MHz, frequency range 5270~5290MHz; • 60: main frequency band 5300MHz, frequency range 5290~5310MHz; • 64: main frequency band 5320MHz, frequency range 5310~5330MHz; • 149: main frequency band 5745MHz, frequency range 5735~5755MHz; • 153: main frequency band 5765MHz, frequency range

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	5755~5775MHz; • 157: main frequency band 5785MHz, frequency range 5775~5795MHz; • 161: main frequency band 5805MHz, frequency range 5795~5815MHz; • 165: main frequency band 5825MHz, frequency range 5815~5835MHz. Note: • In order to improve the network performance, please choose unused channel in the device working environment. • Different frequency bands and countries support different channel options.
Bandwidth	Wireless network channel bandwidth, options are as follows: • 20MHz; • 40MHz.
Power	Transmission power of device wireless signal. Note: • Greater the transmitted power, better the transmittability, longer the transmission range, but stronger the interference; • Different device may have different transmitted power range.
Max client number	Maximum client number of the device wireless signal, value range 1-64, when the value is 64, it represents the unlimited connected clients number.

6.3.3 Advanced Configuration

Function Description

On the "Advanced" page of wireless settings, user can enable short GI, wireless isolate, fragmentation threshold, RTS and other functions.

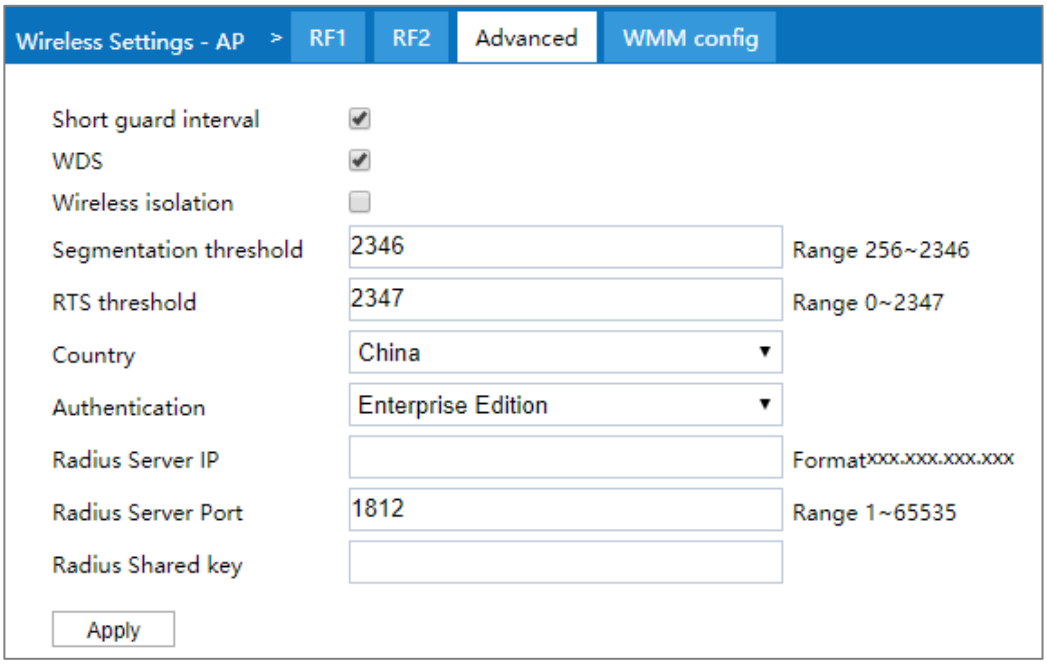
Operation Path

Please open in order: "Network > Wireless settings-AP > Advanced".

Interface Description

The advanced configuration interface is as follows:

Copyright © 3onedata Co., Ltd.



The main element configuration description of advanced interface:

Interface Element	Description
Short Guard Interval	Short GI (Short Guard Interval) checkbox: • Check: enabling the function can reduce the gap between two data packets to 400ns, and improve the data transmission speed. • Uncheck: after disabling the function, the transmission interval of data packet defaults to 800ns. Note: Under high signal strength and low latency, this function can be enabled to improve nearly 10% handling capacity.
WDS	WDS (Wireless Distribution System), this function is used for bridging multiple WLAN. Note: Please enable WDS function while bridging the device with other wireless devices.
Wireless Isolation	Wireless user isolation, it's used for isolating the wireless clients connected to the device wireless network with same SSID, defaults to disabled. Note: After enabling the wireless isolation function, two wireless clients connected to the same SSID can't mutually access, and this function can further enhance the wireless network security.
80211r	802.11r check box, check it to enable the fast-roaming function. Note: 802.11r configuration is supported only in AP mode.

Copyright © 3onedata Co., Ltd.

Interface Element	Description
Segmentation Threshold	Fragment threshold of data packet, value range is 256-2346, defaults to 2346. Note: • The data frame will be segmented when its length surpasses fragment threshold. • With large interference or high utilization ratio of wireless network, user can adopt smaller fragmentation threshold to increase the transmission reliability; but it is low efficiency. • The wireless network is easy to be interfered while adopting large fragment threshold; but it is high efficiency.
RTS Threshold	Data packet RTS (Request to Send) threshold, value range 0-2347, defaults to 2347. • RTS threshold = 0: it needs to detect whether there exists collision only if the data packet is sent out; AP will send RTS signal; • 0 < RTS threshold < 2347: when the length of data packet surpasses RTS threshold, the device wireless terminal will send RTS signal to avoid signal conflict; • RTS threshold = 2347: the device wireless terminal won't send RTS signal. Note: • As for the wireless nodes in different wireless detection range of AP range, collision will occur when the nodes send out signals; RTS function can avoid the collision. • The device will send RTS to destination station for negotiation when the length of data packet surpasses RTS threshold. After receiving RTS frame, the wireless station will send a CTS (Clear to Send) frame to the device, which represents the two can conduct wireless communication.
Country	Applied countries and regions of wireless network. Options are as follows: • China • USA Note: Different country opens different channels.
Authentication	Authentication mode of wireless network, options as follows: • Personal edition: wireless network WPA/WPA2/WPA3 uses WPA/WPA2-PSK/ WPA3-SAE encryption method and pre-shared key. Personal edition is suitable for personal and home users; • Enterprise edition: wireless network WPA/WPA2/WPA3

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	uses WPA-802.1X/WPA2-802.1X/WPA3-802.1X encryption method. It is necessary to install Radius server to authenticate, and suitable for enterprise users with high security requirements. Note: Authentication mode can be configured after the wireless network is encrypted, WAP2/WAP3 encryption mode does not support enterprise authentication mode for the time being.
Radius Server IP	IP address of RADIUS(Remote Authentication Dial In User Service) sever. Note: The item will display as an text input box when the wireless network authentication method is enterprise edition.
Radius Server Port	The authentication port number of the RADIUS server,value range is 1-65535. Note: The item will display as a text input box when the wireless network authentication method is enterprise edition.
RADIUS Shared Key	Shared key of RADIUS server. Note: The item will display as an text input box when the wireless network authentication method is enterprise edition.

6.3.4 WMM Configuration

802.11 network provides wireless access services based on competition, but different application requirements have different requirements on the network, and the original network cannot provide access services of different quality for different applications, so it's unable to meet the needs of practical applications. IEEE 802.11e adds QoS features to WLAN system based on 802.11 protocol, which has been standardized for a long time. In this process, the Wi-Fi organization defines WMM (Wi-Fi Multimedia) standard in order to ensure interoperability between devices provided QoS by different WLAN vendors. The WMM standard enables WLAN networks to provide QoS services. WMM is a wireless QoS protocol, which is used to ensure that high-priority messages have the priority of sending, so as to ensure the better quality of voice, video and other applications in wireless networks.

Function Description

On the "WMM Settings" page of wireless settings, user can configure the relevant parameters of WMM.

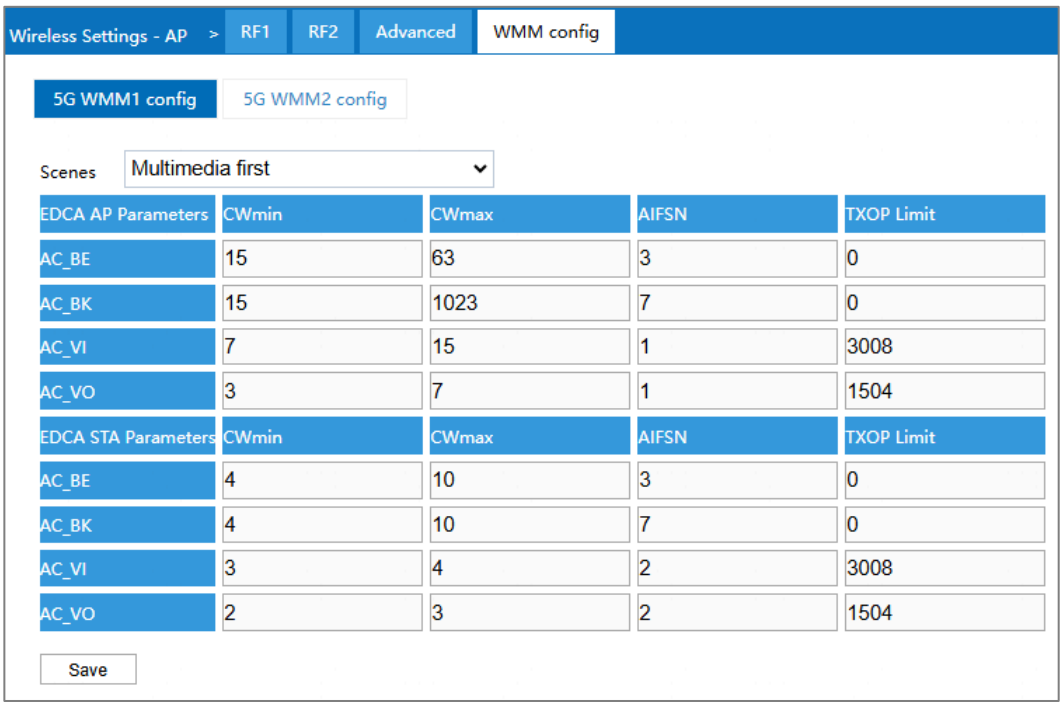
Copyright © 3onedata Co., Ltd.

Operation Path

Please open in order: "Network Settings> Wireless Settings-AP > WMM Configuration".

Interface Description

The WMM configuration interface is as follows:



Main element configuration description of WMM configuration interface:

Interface Element	Description
WMM Configuration Tab	• 2.4G WMM Configuration • 5G WMM Configuration Note: Display the current frequency band configuration of RF 1 and RF 2.
Scene	WMM scene settings, options: • No priority; • Multimedia First; • User-defined. Note: • The default scenario is no priority. At this time, data stream and video voice stream have the same priority, and no one has the priority. • After selecting WMM function, the device can process the data packet with priority level, improving the data transmission performance of WMM and ensuring the service quality of voice, video and other services with high real-time requirements. • To select user-defined functions, users need to set their own parameters.

Copyright © 3onedata Co., Ltd.

Interface Element	Description
EDCA AP Parameters	WMM priority queue, options are as follows: • AC_BE (best effort streaming); • AC_BK (background streaming); • AC_VI (video streaming); • AC_VO (voice streaming);
EDCA STA Parameters	EDCA (Enhanced Distributed Channel Access) parameters of terminal device (Workstation STA) supporting 802.11 standard.
CWmin	Minimum competition window, available values: 1, 3, 7, 15, 31, 63, 127, 255, 511, 1023, 2047, 4095, 8191, 16383, 32767
CWmax	Maximum competition window, available values: 1, 3, 7, 15, 31, 63, 127, 255, 511, 1023, 2047, 4095, 8191, 16383, 32767, and the value of maximum competition window must be larger than the value of the minimum competition window.
AIFSN	AIFSN, Arbitration Inter Frame Spacing Number WMM can configure different idle waiting time for different AC. The larger the value of AIFSN, the longer the idle waiting time of users will be. Value range is 1-255.
TXOP Limit	Transmission Opportunity Limit The maximum length of time the user can occupy the channel after a successful competition The larger this value is, the longer the user can occupy the channel at a time. If it is 0, only one message can be sent after occupying the channel at a time. The value of this parameter must be positive and modification is not recommended.

6.4 Wireless Settings-Client

Notes

The wireless setting page is different in different working modes:

- Routing, AP mode, factory default mode: only the "Wireless Settings -AP" page is displayed.
- Bridge Mode: The “Wireless Settings-AP” page and the “Wireless Settings-Client” page are displayed.
- Client mode, dual-link mode: only the “Wireless Settings-Client” page is displayed.

Copyright © 3onedata Co., Ltd.

6.4.1 RF Configuration

Notes

- Bridge mode and client mode only display the “RF Configuration” page of RF1.
- In the dual-link mode, the radio frequency 1 configuration, radio frequency 2 configuration and advanced configuration are displayed.
- The RF configuration page is similar, and the configuration parameters are different in different connection modes and authentication modes.

Function Description

On the "Wireless Settings-Client-RF“ page, user can configure the superior wireless network parameters of RF bridge.

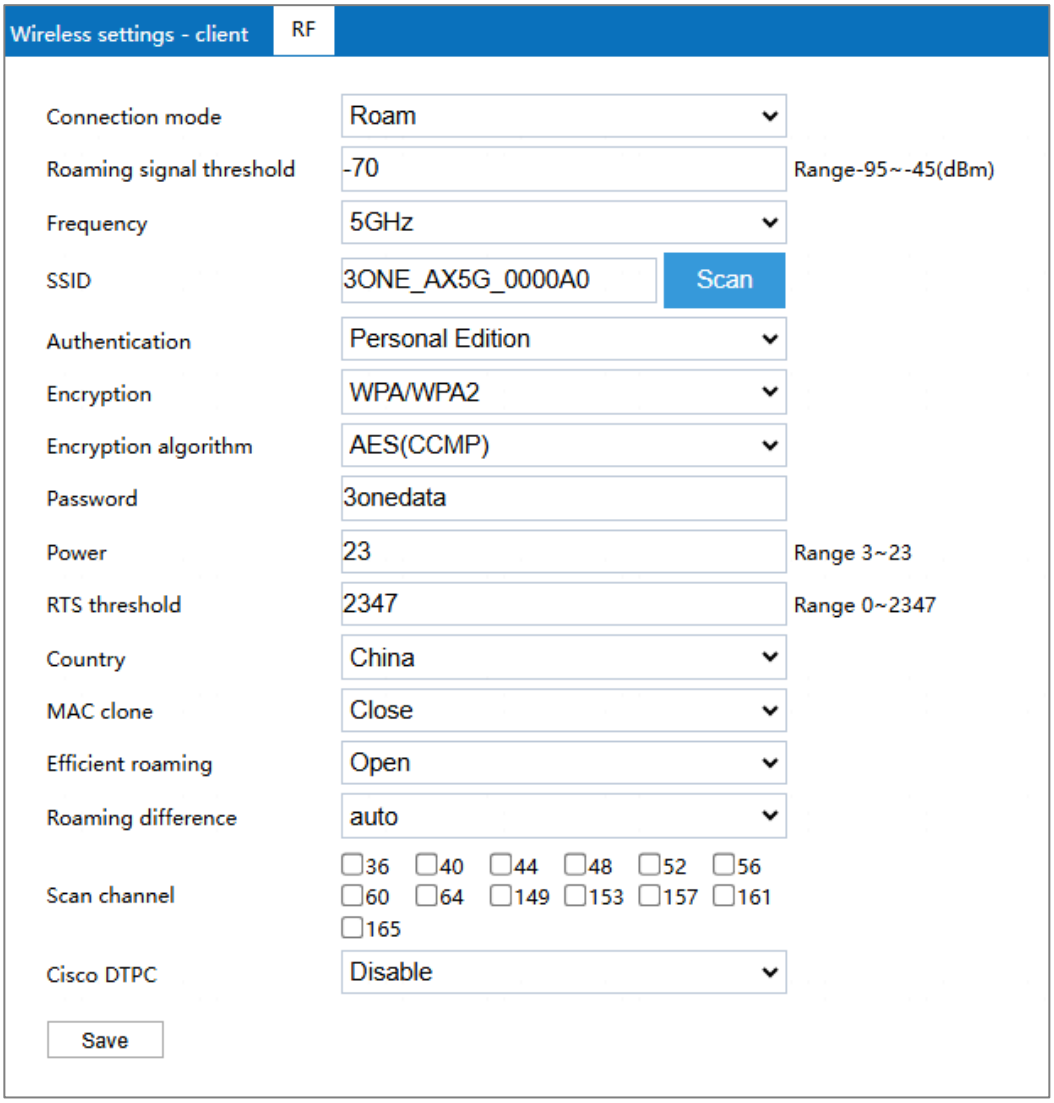
Operation Path

Please open in order: "Network settings > Wireless Settings-Client > RF".

Interface Description 1: Personal Authentication Method

The RF - Personal Edition authentication method interface is as follows:

Copyright © 3onedata Co., Ltd.



The main element configuration description of RF-Personal Edition authentication method interface:

Interface Element	Description
Connection mode	Connection mode of the device and opposite terminal wireless device, options as follows: • Point to point: it's used for connecting the appointed wireless device; • Roam: Switching among wireless devices with the same SSID. Note: In the bridge mode, it supports the switching between point-to-point and roaming modes.
Roaming signal threshold	Textbox of roaming signal threshold. • When the signal strength RSSI falls below this threshold, roaming will be triggered. • When the signal strength RSSI is higher than this

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	threshold, roaming will not be triggered. Note: This input box is displayed only when connection mode is selected as roaming.
Frequency	Scanning frequency band. Options are as follows: • 2.4GHz • 5GHz
SSID	SSID name of the opposite device wireless network. Note: User can add the wireless device for bridge via scan button.
Authentication	Authentication mode of the wireless network at the opposite end: • Personal edition: wireless network WPA/WPA2/WPA3 uses WPA/WPA2-PSK/ WPA3-SAE encryption method and pre-shared key. Personal edition is suitable for personal and home users; • Enterprise edition: wireless network WPA/WPA2/WPA3 uses WPA-802.1X/WPA2-802.1X/WPA3-802.1X encryption method. It is necessary to install Radius server to authenticate, and suitable for enterprise users with high security requirements. Note: When the working mode is WDS bridging, the authentication mode can only be personal version; When the working mode is universal bridging or NAT, the authentication mode can be selected from personal version and enterprise version.
Encryption	Encryption mode of opposite device wireless network, options as follows: • No encryption; • WPA2: WiFi Protected Access II suits for the individual or average family network. It adopts pre-shared key mode and supports TKIP (Temporal Key Integrity Protocol) and AES (Advanced Encryption Standard) encryption modes. • WPA/WPA2: mixed mode of WPA and WPA2, it uses WPA or WPA2 encryption algorithm. • WPA3: the third version of Wi-Fi protected access, with further security improvements over WPA2, longer encryption keys, and SAE authentication. • WPA2/WPA3: mixed mode of WPA2 and WPA3, it uses WPA2 or WPA3 encryption algorithm.
Encryption	Wireless network encryption algorithm of the opposite device,

Copyright © 3onedata Co., Ltd.

Interface Element	Description
algorithm	options as follows: • AES (CCMP): advanced encryption standard; • TKIP/AES: the key integrates 2113 protocol or advanced encryption standard temporarily. Note: When the encryption method is WPA2/WPA3 and WPA3, only AES(CCMP) encryption algorithm is supported.
Password	Password of opposite device wireless network.
Power	Transmission power of device wireless signal. Note: • Greater the transmitted power, better the transmittability, longer the transmission range, but stronger the interference; • Different device may have different transmitted power range.
RTS threshold	Data packet RTS (Request to Send) threshold, value range 0-2347, defaults to 2347. • RTS threshold = 0: it needs to detect whether there exists collision only if the data packet is sent out; AP will send RTS signal; • 0 < RTS threshold < 2347: when the length of data packet surpasses RTS threshold, the device wireless terminal will send RTS signal to avoid signal conflict; • RTS threshold = 2347: the device wireless terminal won't send RTS signal. Note: • As for the wireless nodes in different wireless detection range of AP range, collision will occur when the nodes send out signals; RTS function can avoid the collision. • The device will send RTS to destination station for negotiation when the length of data packet surpasses RTS threshold. After receiving RTS frame, the wireless station will send a CTS (Clear to Send) frame to the device, which represents the two can conduct wireless communication.
Country	Applied countries and regions of wireless network. Options are as follows: • China • USA Note: Different country opens different channels.
MAC clone	Enable or disable MAC address clone, options are as follows: • Disable • Open

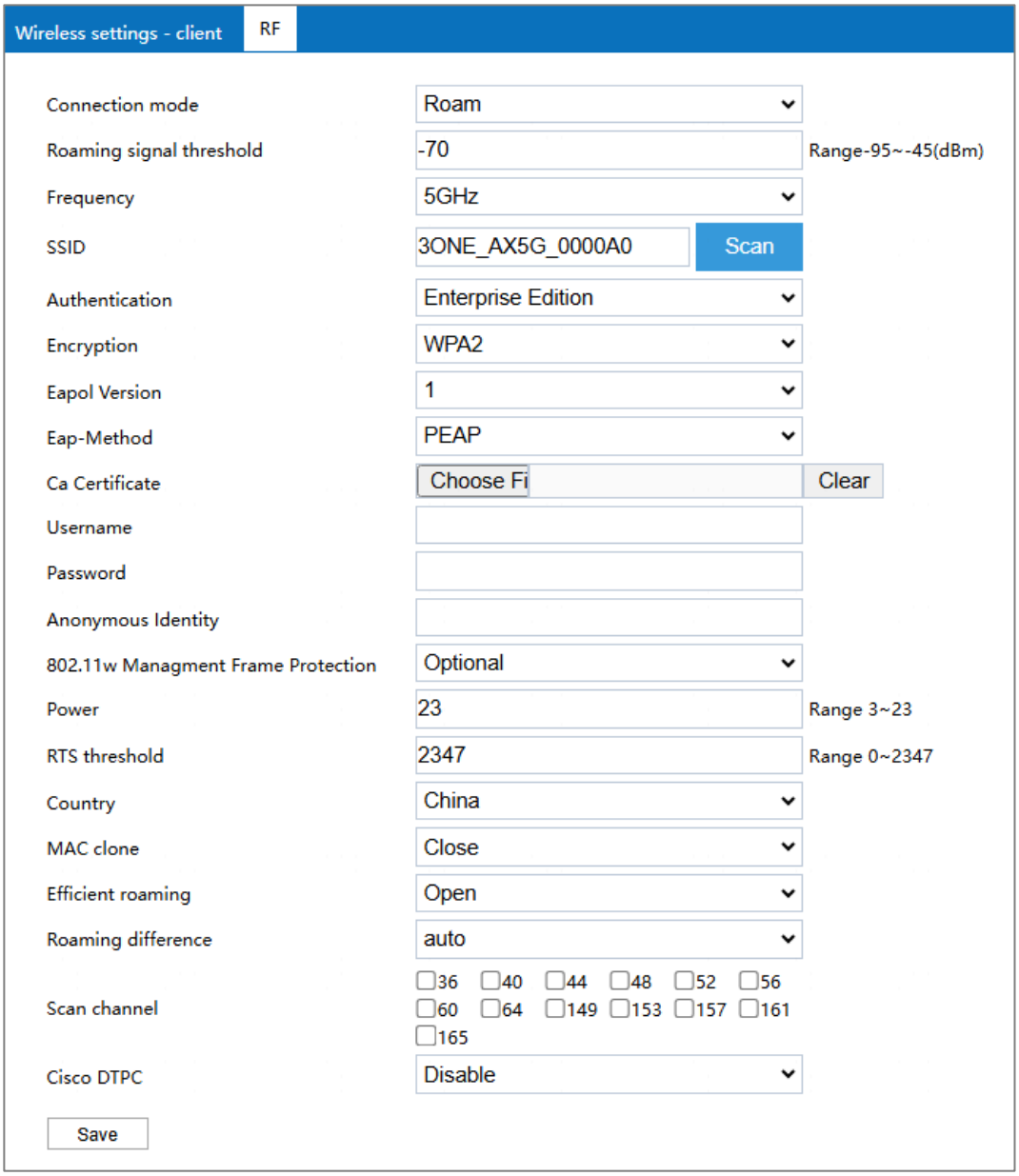
Copyright © 3onedata Co., Ltd.

Interface Element	Description
Efficient roaming	The switch of efficient roaming function Efficient roaming is a roaming acceleration technology independently developed by our company. Ordinary roaming requires all-channel scanning, while efficient roaming specifies any channels for scanning, and which has optimized the roaming strategy and greatly shortened the roaming time. Note: • Efficient roaming can only be enabled when the "Roaming" is selected as the "Connection Mode". • Only in client mode, efficient roaming is displayed.
Roaming difference	Roaming RSSI difference of efficient roaming function. The default is the dynamic value calculated automatically, or you can select a fixed value in the drop-down list (range: 5-20). • When the signal strength RSSI difference between the new AP and the current associated AP is higher than this threshold, roaming is triggered; • When the RSSI difference between the signal strength of the new AP and the current associated AP is lower than this threshold, roaming will not be triggered; Note: This drop-down box is displayed only when efficient roaming is enabled.
Scan channel	High-priority scan channels under efficient roaming function. No channel is checked by default, that is, there is no priority channel, and all channels are scanned in sequence. When some channels are checked, the designated channel is scanned first, and if no stable signal can be scanned in the designated channel, other channels will be scanned. Note: This item is displayed only when "efficient roaming" is enabled.
Cisco DTPC	Enable or disable Cisco DTPC, options are as follows: • Enable • Disable

Interface Description 2: Authentication Method of Enterprise Edition

The RF1-Enterprise Edition authentication method interface is as follows:

Copyright © 3onedata Co., Ltd.



The main element configuration description of RF1-Enterprise Edition authentication method interface:

Interface Element	Description
Connection mode	Connection mode of the device and opposite terminal wireless device, options as follows: • Point to point: it's used for connecting the appointed wireless device; • Roam: Switching among wireless devices with the same SSID. Note: In the bridge mode, it supports the switching between point-to-point and roaming modes.
Roaming signal	Textbox of roaming signal threshold.

Copyright © 3onedata Co., Ltd.

Interface Element	Description
threshold	• When the signal strength RSSI falls below this threshold, roaming will be triggered. • When the signal strength RSSI is higher than this threshold, roaming will not be triggered. Note: This input box is displayed only when connection mode is selected as roaming.
Frequency	Scanning frequency band. Options are as follows: • 2.4GHz • 5GHz
SSID	SSID name of the opposite device wireless network. Note: User can add the wireless device for bridge via scan button.
Authentication	Authentication mode of the wireless network at the opposite end: • Personal version: Wireless network WPA2 is WAP2-PSK pre-shared key mode, and WPA3 provides a more secure handshake protocol and algorithm for WPA3-SAE; Suitable for personal or family users. • Enterprise: Wireless networks WPA2 and WPA3 are WPA2/WPA3-802.1X access methods, and are authenticated by RADIUS server and extensible authentication protocol EAP. Note: When the working mode is WDS bridging, the authentication mode can only be personal version; When the working mode is universal bridging or NAT, the authentication mode can be selected from personal version and enterprise version.
Encryption	Encryption mode of opposite device wireless network, options as follows: • WPA 2: the 2nd edition of Wi-Fi protected access • WPA 3: the 3rd edition of Wi-Fi protected access, which further improves security compared with WPA2.
Eapol Version	The extensible authentication protocol EAPOL on local area network (LAN) is an encapsulation technology defined by 802.1X protocol, which is mainly used to transmit EAP protocol messages between the client and the device in LAN. EAPOL protocol version, with the following options: • 1: 802.1X-2001 • 2: 802.1X-2004

Copyright © 3onedata Co., Ltd.

Interface Element	Description
Eap-Method	The 802.1X system uses EAP to realize the interaction of authentication information between the client, the device and the authentication server, and supports a variety of authentication methods. The options are as follows: • PEAP: Protected Extensible Authentication Protocol. EAP-PEAP and EAP-TTLS need to load certificates on the server, but not on the client, so their deployment is relatively flexible and their security is lower than EAP-TLS. • TTLS: Tunneled Transport Layer Security, TTLS is an extension of TLS. The first stage is to establish a TLS tunnel between the user and the authentication server, and the second stage is to use other authentication methods to authenticate in the established tunnel. • TLS: Transport Layer Security. EAP-TLS requires certificates to be loaded on the client and server, which is the most secure.
Ca Certificate	If the file is in pem format, you can choose no certificate.
Private key	The file is in p12 format. Note: This item is displayed when EAP type is “TLS”.
Password of Private Key	User certificate password, which can be letters, numbers and other characters, with a maximum length of 64 bytes. Note: This item is displayed when EAP type is “TLS”.
Inner Authentication	EAP-TTLS authentication mode. The authentication mode of Stage 2 is as follows: • PAP: Password authentication protocol, unencrypted authentication. • CHAP: Challenge handshake authentication protocol, encrypted authentication. • MSCHAP: Microsoft version of challenge handshake authentication protocol, Microsoft encrypted authentication. • MSCHAP2: Microsoft version of challenge handshake authentication protocol version 2, Microsoft encrypted authentication version 2. Note: This item is displayed when EAP type is “TTLS”.

Copyright © 3onedata Co., Ltd.

Interface Element	Description
Username	Authentication username, which can be letters, numbers and other characters, with a maximum length of 64 bytes. The configured user name and password are consistent with those configured on the authentication server. Note: This item is displayed when EAP type is “PEAP” or “TTLS”.
Password	Authentication password, which can be letters, numbers and other characters, with a maximum length of 64 bytes. Note: This item is displayed when EAP type is “PEAP” or “TTLS”.
Anonymous Identity	Anonymous authentication username, which can be letters or numbers, with a maximum length of 64 bytes, can be skipped. Note: For some authentication methods, anonymous authentication user names need to be configured. Configuring the anonymous authentication username of 802.1X Client can effectively protect the authentication username from being revealed in the first stage of authentication.
802.11w Management Frame Protection	PMF(Protected Management Frame) is a specification based on IEEE 802.11w standard issued by WFA. Its purpose is to extend the security measures for data frames in WPA2 to unicast and multicast management action frames, so as to improve the credibility of the network. • Disabled • Optional: No matter whether the terminal supports PMF or not, it can access, and only the management frame of the terminal that supports PMF is encrypted and protected. • Mandatory: after this function is turned on, only terminals that support PMF are allowed to access. Note: This function is forced on during WPA3 authentication, and configuration is not supported. If the management frame of WLAN network is not encrypted, it may cause security problems. In order to further protect the security of WLAN network, the Wi-Fi Alliance stipulates that WPA3 must protect the management frame. If the terminal does not support PMF function, it is not allowed to access the terminal.
Power	Transmission power of device wireless signal. Note: • Greater the transmitted power, better the transmittability, longer the transmission range, but stronger the interference; • Different device may have different transmitted power range.
RTS threshold	Data packet RTS (Request to Send) threshold, value range 0-

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	2347, defaults to 2347. • RTS threshold = 0: it needs to detect whether there exists collision only if the data packet is sent out; AP will send RTS signal; • 0 < RTS threshold < 2347: when the length of data packet surpasses RTS threshold, the device wireless terminal will send RTS signal to avoid signal conflict; • RTS threshold = 2347: the device wireless terminal won't send RTS signal. Note: • As for the wireless nodes in different wireless detection range of AP range, collision will occur when the nodes send out signals; RTS function can avoid the collision. • The device will send RTS to destination station for negotiation when the length of data packet surpasses RTS threshold. After receiving RTS frame, the wireless station will send a CTS (Clear to Send) frame to the device, which represents the two can conduct wireless communication.
Country	Applied countries and regions of wireless network. Options are as follows: • China • USA Note: Different country opens different channels.
MAC clone	Enable or disable MAC address clone, options are as follows: • Disable • Open
Efficient roaming	The switch of efficient roaming function Efficient roaming is a roaming acceleration technology independently developed by our company. Ordinary roaming requires all-channel scanning, while efficient roaming specifies any channels for scanning, and which has optimized the roaming strategy and greatly shortened the roaming time. Note: • Efficient roaming can only be enabled when the “Roaming” is selected as the “Connection Mode”. • Only in client mode, efficient roaming is displayed.
Roaming difference	Roaming RSSI difference of efficient roaming function. The default is the dynamic value calculated automatically, or you can select a fixed value in the drop-down list (range: 5-20).

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	• When the signal strength RSSI difference between the new AP and the current associated AP is higher than this threshold, roaming is triggered; • When the RSSI difference between the signal strength of the new AP and the current associated AP is lower than this threshold, roaming will not be triggered; Note: This drop-down box is displayed only when efficient roaming is enabled.
Scan channel	High-priority scan channels under efficient roaming function. No channel is checked by default, that is, there is no priority channel, and all channels are scanned in sequence. When some channels are checked, the designated channel is scanned first, and if no stable signal can be scanned in the designated channel, other channels will be scanned. Note: This item is displayed only when “efficient roaming” is enabled.
Cisco DTPC	Enable or disable Cisco DTPC, options are as follows: • Enable • Disable

6.5 VLAN Settings

VLAN is Virtual Local Area Network. VLAN is the data switching technology that logically (note: not physically) divides the LAN device into each network segment (or smaller LAN) to achieve the virtual working group (unit).

VLAN advantages mainly include:

- Port isolation. Ports in different VLAN, even in the same switch, can't intercommunicate. Such a physical switch can be used as multiple logical switches.
- Network security. Different VLAN can't directly communicate with each other, which has eradicated the insecurity of broadcast information.
- Flexible management. Changing the network user belongs to, don’t need to change ports or connection; only needs to change the software configuration.

That is, ports within the same VLAN can intercommunicate; otherwise, ports can't communicate with each other. A VLAN is identified with VLAN ID, and ports with the same VLAN ID belong to a same VLAN.

Copyright © 3onedata Co., Ltd.

Notes

Only AP mode, bridge mode (WDS), bridge mode (universal bridge), client mode (WDS) and client mode (universal bridge) support VLAN configuration; Switching the work mode will clear all VLAN configurations.

Function Description

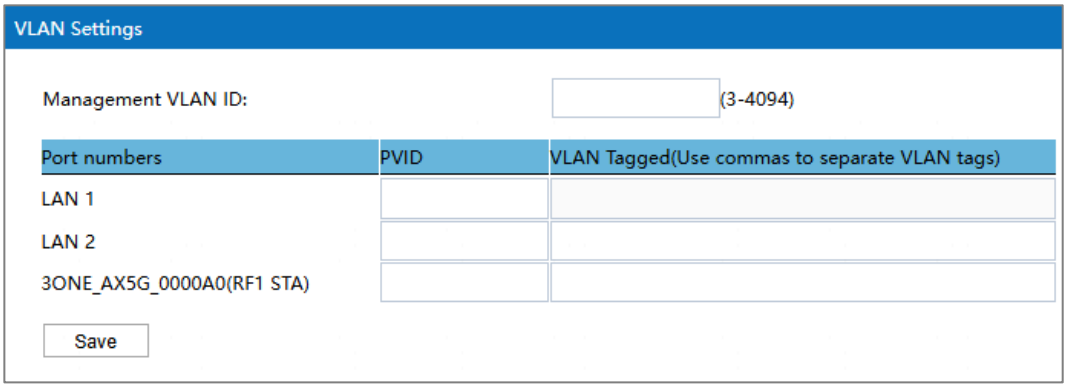
On the page of "VLAN Settings", user can configure the relevant parameters of VLAN.

Operation Path

Please open in order: “Network Settings > VLAN Settings”.

Interface Description

VLAN settings interface is as follows:



The main element configuration description of VLAN settings interface:

Interface Element	Description
Management VLAN ID	The management Vlan ID needs to be included in the value of VLAN Tagged. • When all ports are configured with VLAN, the management VLAN option must be configured, and the Web page can only be accessed through the IP of the port where the management VLAN is located. • When there are ports on the page with unconfigured vlans, the Web page must be accessed through the IP of unconfigured VLAN port at this time.
Port number	Device port number or SSID of wireless network
PVID	VLAN ID of the port. Its value range is 3-4094. Note: The port VLAN configures the two ports in a unified way and cannot be configured separately.
VLAN Tagged (Use	When the data frame is sent out from the port, the VLAN ID

Copyright © 3onedata Co., Ltd.

Interface Element	Description
commas to separate VLAN tags)	tag contained in this field is preserved.

6.6 Delay Control

Function Description

On the "Time Delay Control" page of network settings, you can set the time delay of sending data and support three time delay modes.

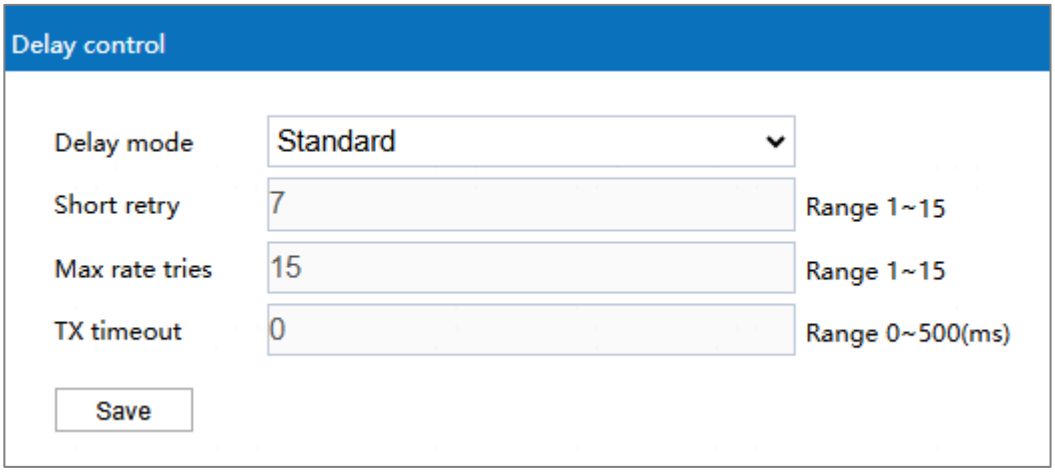
- Standard mode, which is not editable.
- Limit mode, which is not editable.
- User-defined mode, which is editable.

Operation Path

Please open in order: “Network > Delay Control”.

Interface Description

Time delay control interface is as follows:



The main element configuration description of time delay control interface:

Interface Element	Description
Delay mode	Time delay mode support: • Standard, RTS maximum retry times, alternate rate retransmission times and software retransmission time are 6, 6 and 0, respectively. • Limit, RTS maximum retry times, alternate rate retransmission times and the software retransmission time are 3, 4 and 50 respectively.

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	• User-defined.
Short retry	RTS (Request To Send) indicates the request to send, indicating the maximum number of retransmissions of the sent data.
Max rate tries	Number of retransmissions when sending data is lost.
TX timeout	The total time that a data packet is sent and retransmitted, after which it will not be retransmitted.

6.7 QoS Management

Notes

This page is displayed when the device works in routing mode, AP mode and bridge mode.

Function Description

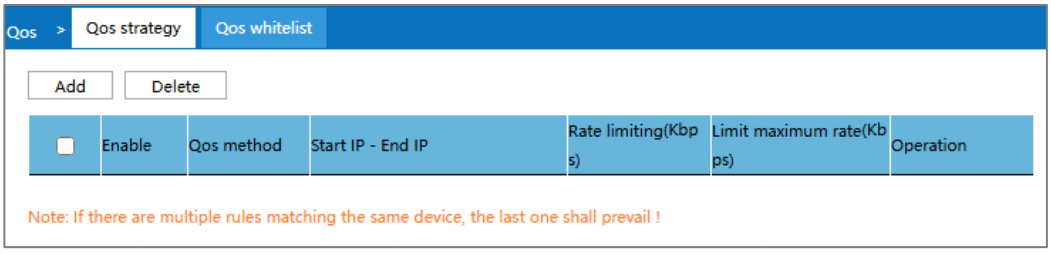
On the “QoS” page, you can limit the average rate and maximum rate of data transmission for IP addresses within the policy range.

Operation Path

Click: "Network > QoS Config".

Interface Description

The QoS management interface is as follows:



The main element configuration description of QoS strategy interface:

Interface Element	Description
Enable	Enable QoS strategy or not
QoS method	The method of enabling QoS strategy, available values: • IP-based speed limit

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	• MAC-based speed limit.
Start IP-End IP	The range of the speed limit from the start IP address to the end IP address
Rate limiting (Kbps)	The average value of limited rate.
Limit maximum rate (Kbps)	The maximum value of limited rate.
Operation	Click "Edit" button to modify this QoS strategy
Add	Click "Add" button to add QoS strategy Note: • A maximum of 3 policies is supported. • If there are multiple repeated rules for the same device, the last rule shall prevail.
Delete	Check the QoS strategy to be deleted, and click the "Delete" button to delete QoS strategy

6.7.1 QoS Whitelist

Function Description

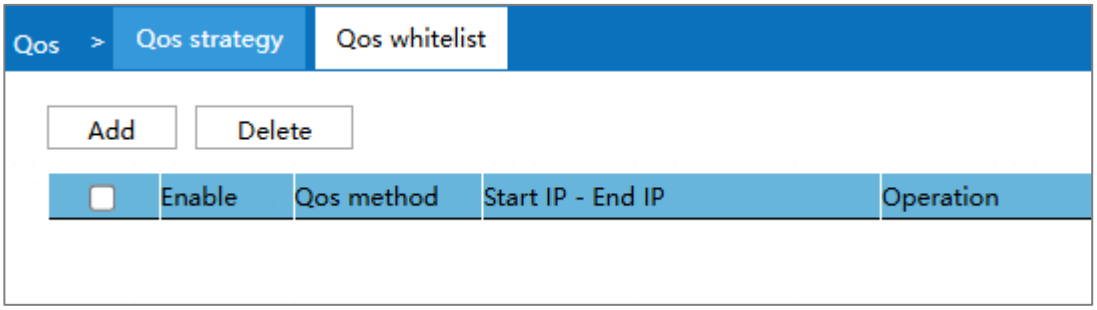
On the "QoS White List" page, you can set the white list of IP or MAC address. The data transmission rate in the list is not limited by the QoS policy.

Operation Path

Click: "Network Settings > QoS Whitelist".

Interface Description

QoS Whitelist interface is as follows:



The main element configuration description of QoS white list interface:

Interface Element	Description
Enable	Enable QoS whitelist or not
QoS method	The method of enabling QoS strategy, available values:

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	• IP white list; • MAC whitelist.
Start IP-End IP	The range of starting and ending IP addresses whose rate is not affected by QoS strategy.
Operation	Click "Edit" button to modify this QoS whitelist
Add	Click "Add" button to add QoS whitelist. Note: If there are multiple repeated rules for the same device, the last rule shall prevail.
Delete	Check the QoS whitelist entry to be deleted, and click "Delete" button to delete QoS whitelist

6.8 Wireless Probe

Notes

This page is displayed when the device works in routing mode, AP mode and bridge mode.

Function Description

On the "Wireless probe" page of network, user can send detected information of wireless terminal device to appointed server.

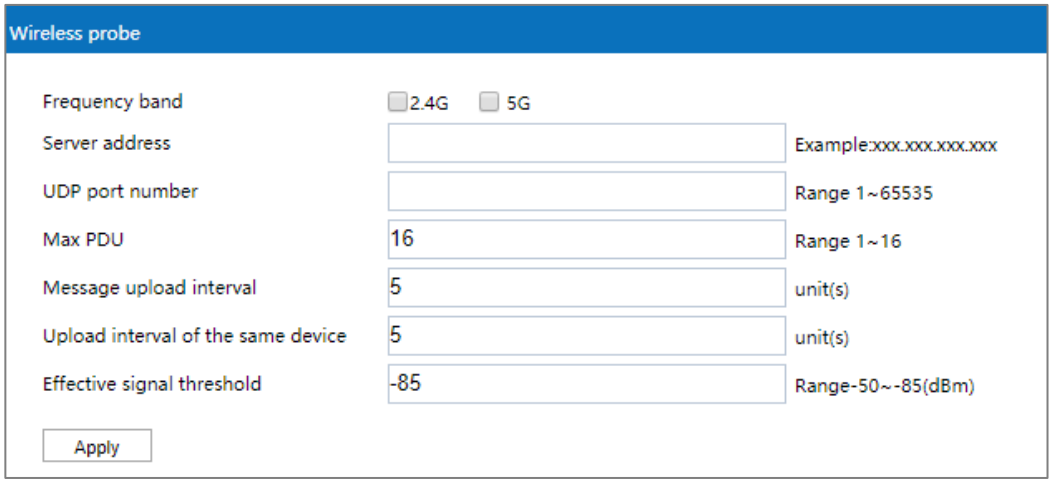
Operation Path

Please open in order: "Network > Wireless probe".

Interface Description

Wireless probe interface is as follows:

Copyright © 3onedata Co., Ltd.



The main element configuration description of wireless probe interface:

Interface Element	Description
Frequency band	Frequency band used by wireless probe: • 2.4GHz • 5GHz
Server address	The address of the server that receives the wireless device information detected by the wireless probe.
UDP port number	The port number of the server that receives the wireless device information detected by the wireless probe.
Max PDU	Maximum device number that data transmission unit contains, valid value range 1-16.
Message upload interval	The time interval between wireless probes uploading data messages to the server. The unit is in seconds A data message can contain data information of multiple devices.
Upload interval of the same device	Time interval of the same device data upload, unit is second.
Effective signal threshold	Effective wireless signals threshold, unit dBm, threshold is less than 0. Note: If the signal strength of wireless client is less than threshold, it will be regarded as invalid signal.

Copyright © 3onedata Co., Ltd.

6.9 AC Management

Function Description

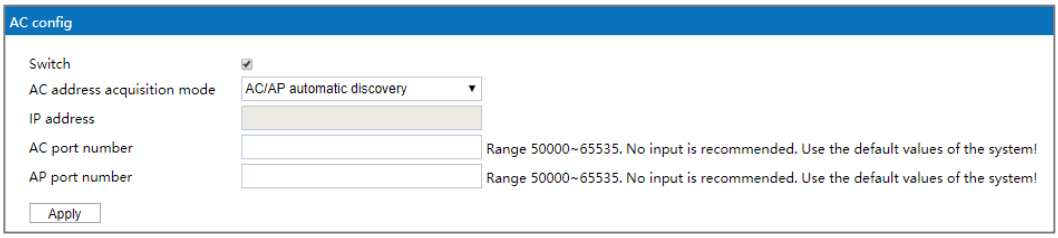
In the "AC Config" page, user can enable AC management, and set AC address, AC port number and AP port number.

Operation Path

Click “Network > AC Config ”.

Interface Description

The AC management interface is as follows:



The main element configuration description of AC management interface:

Interface Element	Description
Switch	Enable AC check box, check it to enable the AC management function.
AC address acquisition mode	AC address acquisition mode, options: • AC/AP automatic discovery • DHCP automatic acquisition • Manual configuration
IP address	AC IP address information. This parameter needs to be set when the AC address acquisition mode is set manually.
AC port number	AC port number, value range: 50000-65535. Note: • The AP port number is not modified by default, only when the port number conflicts. • If the AC port number is empty, it indicates that the system default is used.
AP port number	AP port number, value range: 50000-65535. Note: • The AP port number is not modified by default, only when the port number conflicts. • If the AP port number is empty, it indicates that the system default is used.

Copyright © 3onedata Co., Ltd.

6.10 SNMP Config

Function Description

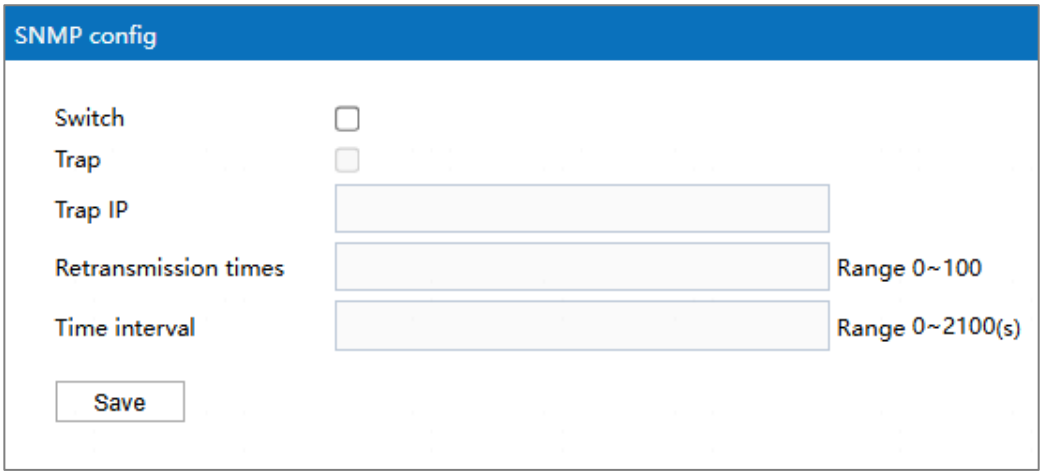
On the "SNMP Config" page, SNMP management can be enabled, and Trap can be enabled.

Operation Path

Click: "Network > SNMP Config".

Interface Description

The SNMP management interface is as follows:



The main element configuration description of SNMP management interface:

Interface Element	Description
Switch	The check box of the switch, check it to enable SNMP management.
Trap	Trap check box, check it to enable Trap information, and the device actively sends the abnormal situation of the device to the management server. Note: Trap anomaly mainly include wireless client online and offline, hardware and software restarting, etc.
Trap IP	The IP address of the server receiving Trap information.
Retransmission times	Time of resending Trap information.
Time interval	Time interval of device sending Trap information, the unit is second.
Allow multicast transparent	Allow multicast passthrough check box. When checked, multicast data is allowed to passthrough in intranet. After

Copyright © 3onedata Co., Ltd.

Interface Element	Description
transmission	SNMP management is enabled, multicast passthrough is not allowed by default.

6.11 Roaming Agent

Notes

This page is displayed when the device is operating in dual-link mode.

Function Description

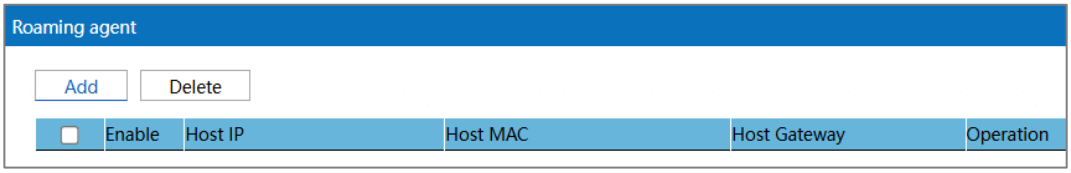
On the roaming agent page, users can configure the network address information of roaming agent host. In the dual-link (seamless roaming) mode, when the two wireless networks connected to the devices are cross-layer3 switches, if the APR table and routing table of the layer 3 switch are not updated in time, it will lead to the disconnection after roaming. At this time, when the wireless link is switched, the device can send free ARP packets in time acting as an agency of the host/terminal device connected to the wired network, and actively inform the layer 3 switch device to update ARP and routing table via roaming agency function.

Operation Path

Open in order: "Network > Roaming Agent".

Interface Description

Roaming agency interface is as follows:



The main element configuration description of roaming agency interface:

Interface Element	Description
Enable	Enable status of roaming agency.
Host IP	IP address of roaming agency device.
Host MAC	MAC address of roaming agency device.
Host Gateway	Gateway address of roaming agency device. • If the gateway address is specified, the device will send free ARP packets by unicast;

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	• If the gateway address is not filled in, the device will send free ARP packets by broadcast.
Operation	Click the "Edit" button to modify the roaming agency network address information.

6.12 Port Mirroring

Notes

Only 2E device supports this function.

Function Description

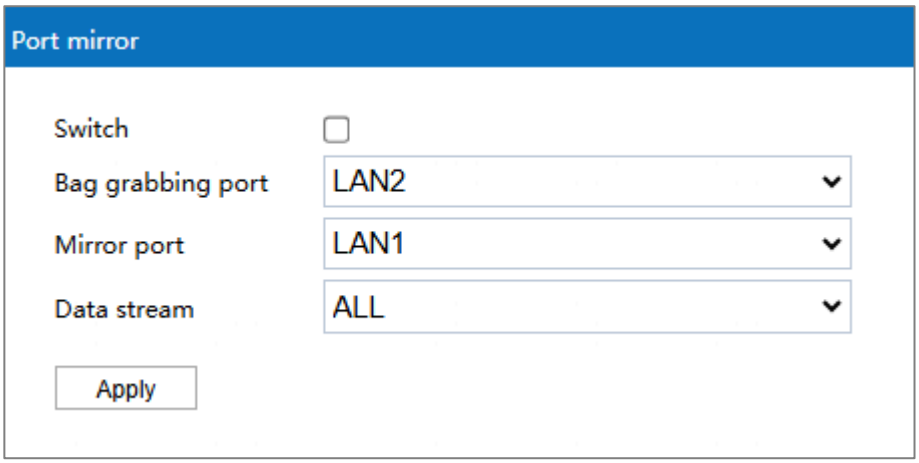
Copy the sending/receiving data from the packet capture port to the designated mirror port, and analyze and monitor it.

Operation Path

Open in order: "Network > Port Mirror".

Interface Description

Port mirror interface is as follows:



The main element configuration description of port mirror interface:

Interface Element	Description
Switch	Enable/ Disable port mirroring.
Bag grabbing port	Monitored ports, from which the device will collect input or

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	output messages.
Mirror port	Monitoring port, used to copy and analyze packets from the monitored port.
Data stream	Data direction options are as follows: • Tx: Export data, mirror the packets sent by the monitored port to the monitoring port; • Rx: Import data, mirror the packets received by the monitored port to the monitoring port; • ALL: All data, mirror the messages sent and received by the monitored port to the monitoring port.

Copyright © 3onedata Co., Ltd.

7 Serial Port Management

The device has integrated instant networking function for serial device, the serial server can convert serial signal into Ethernet wired or wireless signal to achieve signal transmission of serial port on Ethernet.

7.1 Serial Parameters

Function Description

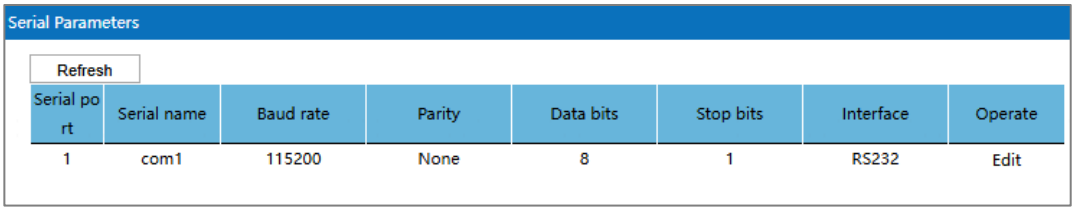
On the “Serial Parameters” page, users can configure serial server mode and specify basic parameter information such as baud rate, data bit, stop bit and check bit for the corresponding serial port number.

Operation Path

Open “Serial > Serial Parameters” in sequence.

Interface Description

Serial Parameters interface is as follows:



The main element configuration description of COM Settings interface:

Interface Element	Description
Serial port	The corresponding serial port number of device’s serial port.
Serial name	Display the serial port name of the device.
Baud rate	Choose baud rate of corresponding serial port. Unit: bps. Options:

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	300/600/1200/2400/4800/9600/19200/38400/57600/115200
Parity	Select parity bits of corresponding serial number. Options: • None • Odd • Even
Data bits	Display the data bits of the device's serial port. Unit: bit. • 8
Stop bits	Choose stop bit of corresponding serial port. Options: • 1 • 2
Interface	Display the interface mode of the device's serial port: • RS232 • RS485

7.2 Serial Mode Port1

Function Description

On the "Serial Mode Port1" page, users can configure the work mode and related parameters of the serial port.

The working modes supported by the device are:

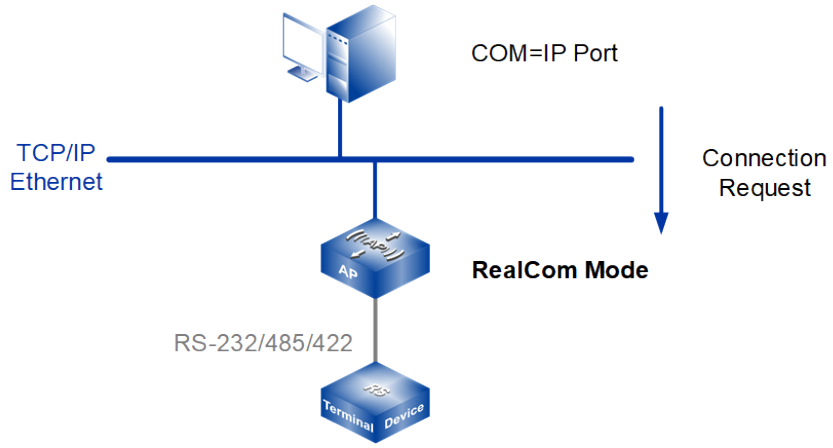
- RealCom Mode
- TCP Server Mode
- TCP Client Mode
- UDP Server Mode
- UDP Client Mode
- UDP Rang Mode
- Disable Mode

Operation Path

Open in order “Serial > Serial Mode Port1”.

Copyright © 3onedata Co., Ltd.

7.2.1 RealCom Mode



Note:

The device picture mentioned in above figure is only an example, and the actual appearance of the device or serial port type is subject to the device obtained.

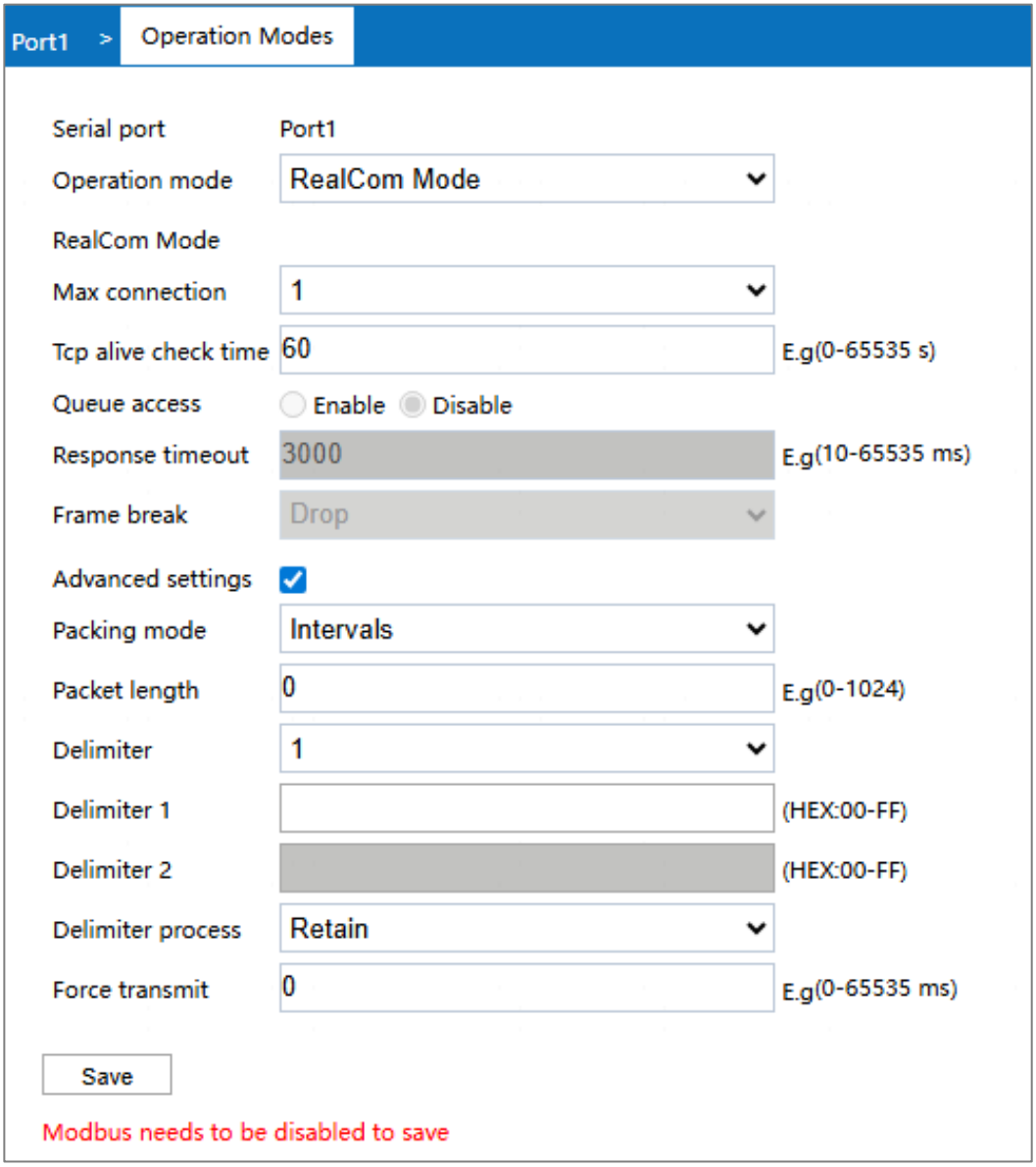
In RealCom mode, the device and Windows / Linux operating system with the RealCom drive work cooperatively. RealCom COM / TTY driver establishes a transparent network transmission connection between the host and the serial device in the operating system. Map the serial port of the device to the local COM/TTY device of the host according to the user configured device IP address and serial port number and other parameters. The original serial device software or communication module without modification can be used directly without modification.

The RealCom driver gets the data be sent to the local COM / TTY device of the host, then sends it over Ethernet in the form of TCP / IP packet. At the other end of transparent transmission, the device receives the TCP/IP data packet, and after unpacking, sends the original data to the serial port device through the corresponding serial port, and vice versa.

Interface Description

The serial port setup interface in RealCom Mode:

Copyright © 3onedata Co., Ltd.



The main element configuration description of serial port setup interface in RealCom Mode:

Interface Element	Description
Serial port	Serial port number corresponding to the device
Operation mode	The working modes of serial port of the device, RealCom Mode. Note: The configuration parameters displayed under different working modes are different.
Max connection	The number of hosts connected to a serial port simultaneously. • Each host communicates with the serial port in the order of “first-in, first-out”. • The system supports up to 4 connections.

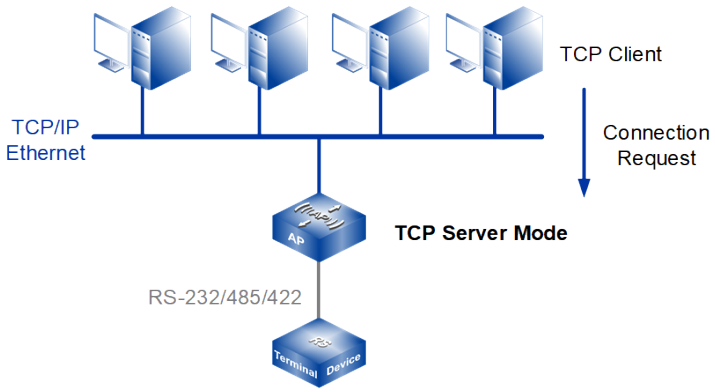
Copyright © 3onedata Co., Ltd.

Interface Element	Description
TCP alive check time	If no TCP activity occurs within the allotted time, the system would send contact-probing message to check the validity of TCP connection. If the reply packet of opposite side hasn't been received after sending probe packet for 3 times, system will regard the opposite side as down and forwardly close the communication connection. If set it to "0", the function will be disabled. Effective time range 0~65535s.
Queue access	Enable the command mode switch, options: • Enable; • Disable.
Response timeout	The response time for TCP connection is 3000ms by default, with a valid time range of 10-65535 ms.
Frame break	Whether to request serial data, default is' discard '.
Advanced settings	Enable advanced settings to configure packaging mode, packaging length, and delimiters.
Packing mode	The serial data is packaged into Ethernet data frame. The options are as follows: • Mandatory time: the system packages serial port data received within a specified time into Ethernet packets and transmit them. • Interval: after sending the last Ethernet packet for some time, the system packages the received serial port data into Ethernet packets and sends them out;
Packet length	For the frame length of the serial data to Ethernet data, the data frame is forwarded within the set time range when it is greater than or equal to the set frame length, and the value ranges from 0 to 1024. It means no limit on data transmission length when it' set to 0. Note: There are some slight deviations between the actual package length value and the set value.
Delimiter	Select the number of delimited characters, the options are as follows: • 0: disable the delimited character function; • 1: enable Delimiter 1; • 2: enable Delimiter 2. Note: If the packaging length or the forced transfer time is 0 and the number of delimited character is greater than 0, the system would detect and process the delimiter after receiving serial data. Every time it receives

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	matched delimiter (or combination of characters), the system would send out all cached serial data via network.
Delimiter 1	Delimiter 1, represent in hexadecimal, the value range is 0x00-0xFF.
Delimiter 2	Delimiter 2, represent in hexadecimal, the value range is 0x00-0xFF.
Delimiter process	Select the character processing method. Options: • Retain: the system would send out the received delimiter and other data via network. • Delete: the matched delimiter (or combination of delimiter) would be deleted. The system only transmits data except delimiter.
Force transmit	The time parameters in the packaging mode of forced time or interval time. The value range is 0-65535ms. Note: Setting the transmission time to 0 means no limit on data transmission interval time or not to enable forced time.

7.2.2 TCP Server Mode



Note:

The device picture mentioned in above figure is only an example, and the actual appearance of the device or serial port type is subject to the device obtained.

In TCP server mode, the device is assigned an IP port number and passively waits for the host to connect. When the host initiates a connection request and establishes a connection with the device, the host can realize bidirectional transparent data transmission through network connection and serial port. The TCP server mode

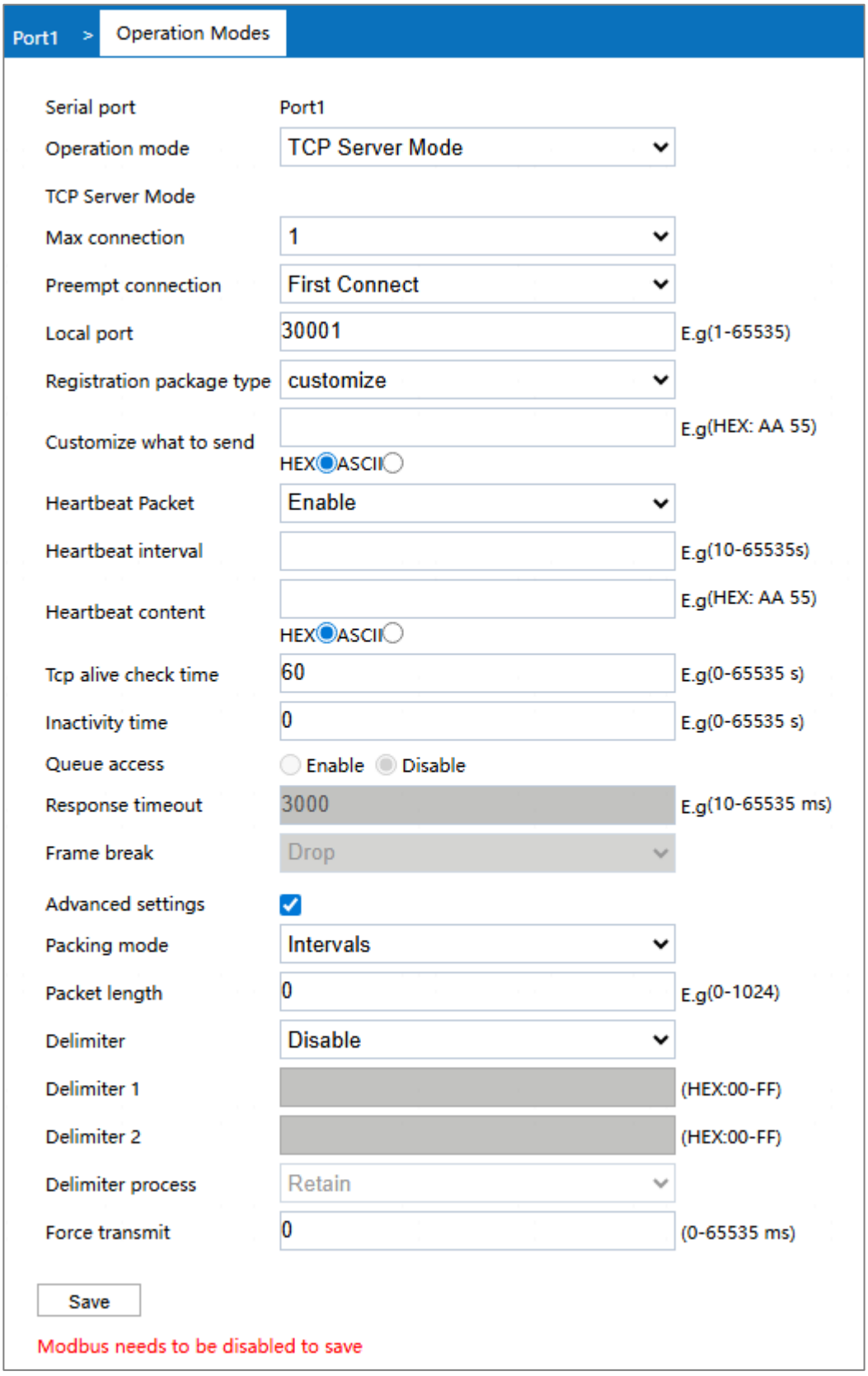
Copyright © 3onedata Co., Ltd.

supports up to four session connections simultaneously, allowing multiple hosts to simultaneously read or send Ethernet data to a serial device.

Interface Description

The serial port setup interface in TCP Server Mode:

3onedata proprietary and confidential
Copyright © 3onedata Co., Ltd.



The main element configuration description of serial port setup interface in TCP Server Mode:

Copyright © 3onedata Co., Ltd.

Interface Element	Description
Serial port	Serial port number corresponding to the device
Operation mode	The working mode of serial port of the device, TCP Server Mode. Note: The configuration parameters displayed under different working modes are different.
Max connection	The number of hosts connected to a serial port simultaneously. • Each host communicates with the serial port in the order of “first-in, first-out”. • The system supports up to 4 connections.
Preempt Connection	Preempt Connection Options are as follows: • OFF; • First Connection; • Longest Absence of Communication
Local port	The local port allocated for TCP connection by the system, which could offer service or connection for the outside world, used for connecting and communicating with server.
Serial Port Buffer	Provide serial port cache settings, the options are as follows: • Enable; • Disable.
Registration package type	The information sent after the device is connected to the peer client. Options: • Disable: After the connection is successful, no information is sent to the peer client. • IP address: After the connection is successful, send the IP address of the device to the peer client. • Device name: After the connection successful, send the device name of the device to the peer client. • Custom: Send custom message to the opposite client after successful connection.
Heartbeat Packet	Provide Heartbeat packet settings, the options are as follows: • Enable; • Disable.
Heartbeat Interval	The time interval for sending network heartbeat packet, the value range is 10-65535s.
Heartbeat content	The heartbeat packet content type, with options as follows: • ASCII; Character; • HEX: Hexadecimal.
TCP alive check time	If no TCP activity occurs within the allotted time, the system would send contact-probing message to check the validity of

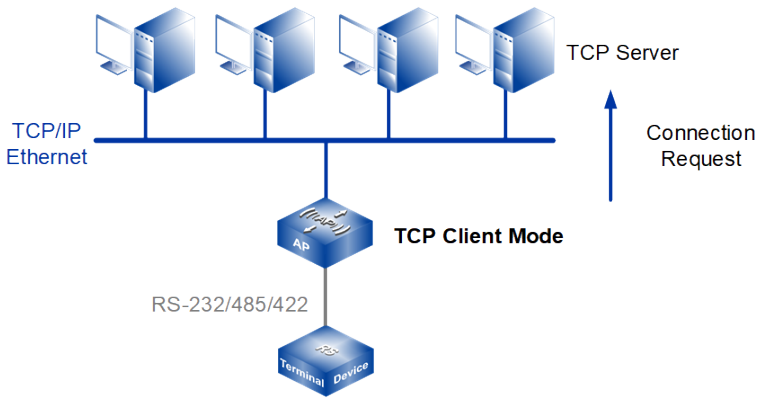
Copyright © 3onedata Co., Ltd.

Interface Element	Description
	TCP connection. If the reply packet of opposite side hasn't been received after sending probe packet for 3 times, system will regard the opposite side as down and forwardly close the communication connection. If set it to "0", the function will be disabled. Effective time range 0~65535s.
Inactivity time	Set the idle time-out of current serial data communication link. • If the idle time-out during communication is larger than 0, the system would close the TCP connection without any data transmission activity occurring in the specified time automatically; • If the idle time-out is equal to 0, it means the free TCP connection would not be closed automatically.
Queue access	Enable the command mode switch, options: • Enable; • Disable.
Response timeout	The response time for TCP connection is 3000ms by default, with a valid time range of 10-65535 ms.
Frame break	Whether to request serial data, default is' discard '.
Advanced settings	Enable advanced settings to configure packaging mode, packaging length, and delimiters.
Packing mode	The serial data is packaged into Ethernet data frame. The options are as follows: • Mandatory time: the system packages serial port data received within a specified time into Ethernet packets and transmit them. • Interval: after sending the last Ethernet packet for some time, the system packages the received serial port data into Ethernet packets and sends them out;
Packet length	For the frame length of the serial data to Ethernet data, the data frame is forwarded within the set time range when it is greater than or equal to the set frame length, and the value ranges from 0 to 1024. It means no limit on data transmission length when it' set to 0. Note: There are some slight deviations between the actual package length value and the set value.
Delimiter	Select the number of delimited characters, the options are as follows: • 0: disable the delimited character function;

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	• 1: enable Delimiter 1; • 2: enable Delimiter 2. Note: If the packaging length or the forced transfer time is 0 and the number of delimited character is greater than 0, the system would detect and process the delimiter after receiving serial data. Every time it receives matched delimiter (or combination of characters), the system would send out all cached serial data via network.
Delimiter 1	Delimiter 1, represent in hexadecimal, the value range is 0x00-0xFF.
Delimiter 2	Delimiter 2, represent in hexadecimal, the value range is 0x00-0xFF.
Delimiter process	Select the character processing method. Options: • Retain: the system would send out the received delimiter and other data via network. • Delete: the matched delimiter (or combination of delimiter) would be deleted. The system only transmits data except delimiter.
Force transmit	The time parameters in the packaging mode of forced time or interval time. The value range is 0-65535ms. Note: Setting the transmission time to 0 means no limit on data transmission interval time or not to enable forced time.

7.2.3 TCP Client Mode



Note:

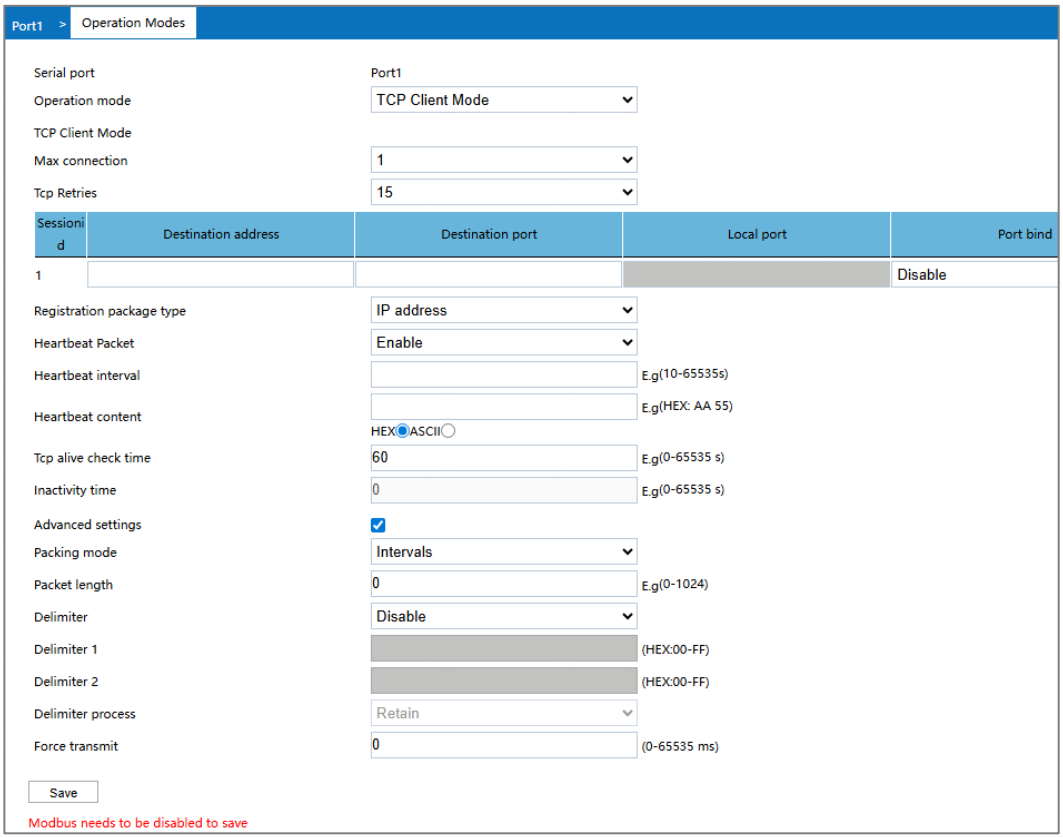
The device picture mentioned in above figure is only an example, and the actual appearance of the device or serial port type is subject to the device obtained.

Copyright © 3onedata Co., Ltd.

In TCP client mode, the device can actively establish a network connection with the host specified by the user when the serial port data arrives. After the data transmission is completed, the device will automatically close the network connection according to TCP keep-alive time/idle timeout and other parameters. Similarly, TCP client mode can support up to four session connections at the same time, so that multiple hosts can simultaneously read or send Ethernet data to a serial device.

Interface Description

The serial port setup interface in TCP Client Mode:



The main element configuration description of serial port setup interface in TCP Client Mode:

Interface Element	Description
Serial port	Serial port number corresponding to the device
Operation mode	The working mode of serial port of the device, TCP Client Mode. Note: The configuration parameters displayed under different working modes are different.
Max connection	The number of hosts connected to a serial port simultaneously. • Each host communicates with the serial port in the order of “first-in, first-out”.

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	• The system supports up to 4 connections.
Tcp Retries	TCP Retransmission times indicates that the device retransmits data based on the specified retransmission times. The value ranges from 0 to 100.
Sessionid	The number of TCP sessions corresponds to the maximum number of connections.
Destination address	Enter the IP address of the server that would be connected to serial port.
Destination port	Enter the TCP port number of the server that would be connected to serial port.
Local port	The local port allocated for TCP connection by the system, which could offer service or connection for the outside world, used for connecting and communicating with server.
Port bind	The port is set to 'disabled' by default, and the local port number can only be modified when it is set to 'enabled'.
Serial Port Buffer	Provide serial port cache settings, the options are as follows: • Enable; • Disable.
Registration package type	The information sent after the device is connected to the peer client. Options: • Disable: After the connection is successful, no information is sent to the peer client. • IP address: After the connection is successful, send the IP address of the device to the peer client. • Device name: After the connection successful, send the device name of the device to the peer client. • Custom: Send custom message to the opposite client after successful connection.
Heartbeat Packet	Provide Heartbeat packet settings, the options are as follows: • Enable; • Disable.
Heartbeat interval	The time interval for sending network heartbeat packet, the value range is 10-65535s.
Heartbeat content	The heartbeat packet content type, with options as follows: • ASCII; Character; • HEX: Hexadecimal.
Tcp alive check time	If no TCP activity occurs within the allotted time, the system would send contact-probing message to check the validity of

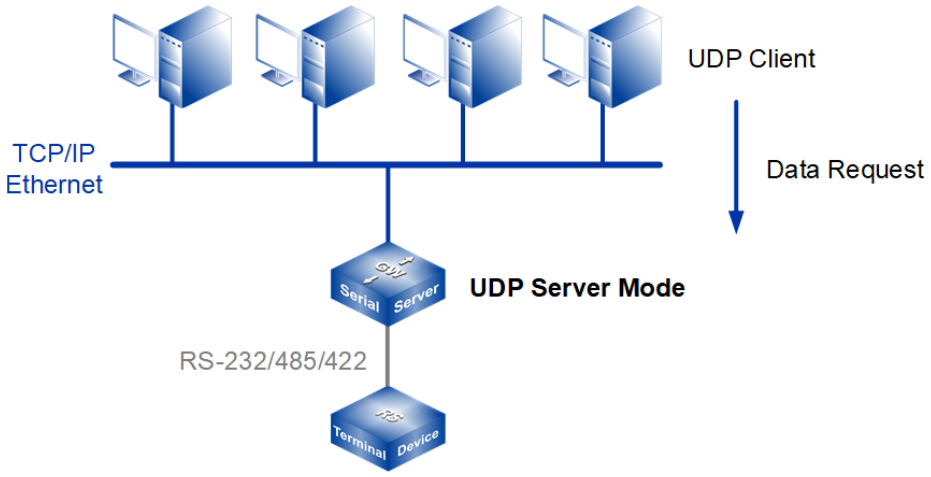
Copyright © 3onedata Co., Ltd.

Interface Element	Description
	TCP connection. If the reply packet of opposite side hasn't been received after sending probe packet for 3 times, system will regard the opposite side as down and forwardly close the communication connection. If set it to "0", the function will be disabled. Effective time range 0~65535s.
Inactivity time	Set the idle time-out of current serial data communication link. • If the idle time-out during communication is larger than 0, the system would close the TCP connection without any data transmission activity occurring in the specified time automatically; • If the idle time-out is equal to 0, it means the free TCP connection would not be closed automatically.
Advanced Settings	Enable advanced settings to configure packaging mode, packaging length, and delimiters.
Packing mode	The serial data is packaged into Ethernet data frame. The options are as follows: • Mandatory time: the system packages serial port data received within a specified time into Ethernet packets and transmit them. • Interval: after sending the last Ethernet packet for some time, the system packages the received serial port data into Ethernet packets and sends them out;
Packet length	For the frame length of the serial data to Ethernet data, the data frame is forwarded within the set time range when it is greater than or equal to the set frame length, and the value ranges from 0 to 1024. It means no limit on data transmission length when it' set to 0. Note: There are some slight deviations between the actual package length value and the set value.
Delimiter	Select the number of delimited characters, the options are as follows: • 0: disable the delimited character function; • 1: enable Delimiter 1; • 2: enable Delimiter 2. Note: If the packaging length or the forced transfer time is 0 and the number of delimited character is greater than 0, the system would detect and process the delimiter after receiving serial data. Every time it receives matched delimiter (or combination of characters), the system would send out all cached serial data via network.

Copyright © 3onedata Co., Ltd.

Interface Element	Description
Delimiter 1	Delimiter 1, represent in hexadecimal, the value range is 0x00-0xFF.
Delimiter 2	Delimiter 2, represent in hexadecimal, the value range is 0x00-0xFF.
Delimiter process	Select the character processing method. Options: • Retain: the system would send out the received delimiter and other data via network. • Delete: the matched delimiter (or combination of delimiter) would be deleted. The system only transmits data except delimiter.
Force transmit	The time parameters in the packaging mode of forced time or interval time. The value range is 0-65535ms. Note: Setting the transmission time to 0 means no limit on data transmission interval time or not to enable forced time.

7.2.4 UDP Server Mode



Note:

The device picture mentioned in above figure is only an example, and the actual appearance of the device or serial port type is subject to the device obtained.

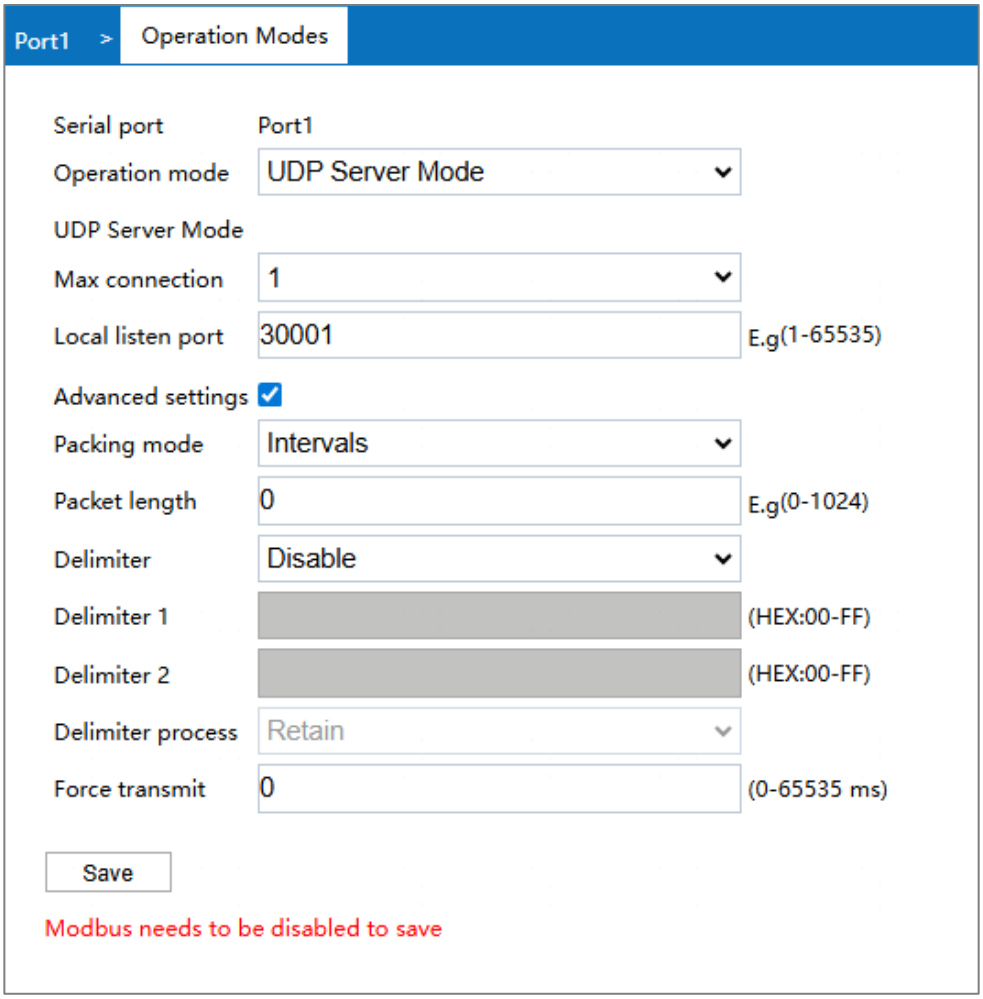
In UDP Server mode, the device, as a server, is assigned a UDP port number, passively waits for the host session, and transmits serial data with the host through UDP protocol. Devices in UDP mode can transmit data from serial devices to one or

Copyright © 3onedata Co., Ltd.

more hosts, and serial devices can also receive data from one or more hosts. Compared with TCP mode, UDP protocol is faster and more efficient.

Interface Description

Screenshot of the serial port settings interface in UDP Server Mode:



The main elements configuration description of serial port settings interface under UDP Server Mode:

Interface Element	Description
Serial port	Serial port number corresponding to the device
Operation mode	The working mode of serial port of the device, UDP Server Mode. Note: The configuration parameters displayed under different working modes are different.
Max connection	The number of host that one serial port has session with. • Each host communicates with serial port in the order of first-in first-out; • The system supports up to 4 sessions.

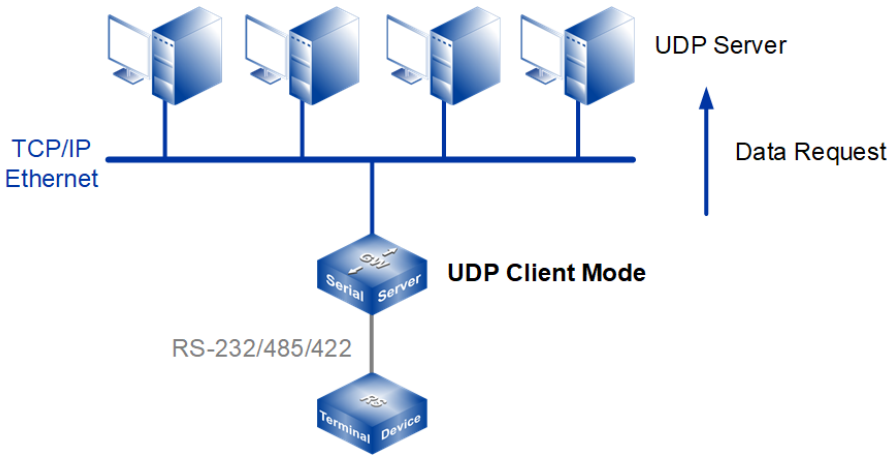
Copyright © 3onedata Co., Ltd.

Interface Element	Description
Local listen port	The data port on which the network receives UDP data. The user must assign a unique data port to each serial port for the system to receive UDP data normally.
Advanced settings	Enable advanced settings to configure packaging mode, packaging length, and delimiters.
Packing mode	The serial data is packaged into Ethernet data frame. The options are as follows: • Mandatory time: the system packages serial port data received within a specified time into Ethernet packets and transmit them. • Interval: after sending the last Ethernet packet for some time, the system packages the received serial port data into Ethernet packets and sends them out;
Packet length	For the frame length of the serial data to Ethernet data, the data frame is forwarded within the set time range when it is greater than or equal to the set frame length, and the value ranges from 0 to 1024. It means no limit on data transmission length when it' set to 0. Note: There are some slight deviations between the actual package length value and the set value.
Delimiter	Select the number of delimited characters, the options are as follows: • 0: disable the delimited character function; • 1: enable Delimiter 1; • 2: enable Delimiter 2. Note: If the packaging length or the forced transfer time is 0 and the number of delimited character is greater than 0, the system would detect and process the delimiter after receiving serial data. Every time it receives matched delimiter (or combination of characters), the system would send out all cached serial data via network.
Delimiter 1	Delimiter 1, represent in hexadecimal, the value range is 0x00-0xFF.
Delimiter 2	Delimiter 2, represent in hexadecimal, the value range is 0x00-0xFF.
Delimiter process	Select the character processing method. Options: • Retain: the system would send out the received delimiter and other data via network. • Delete: the matched delimiter (or combination of

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	delimiter) would be deleted. The system only transmits data except delimiter.
Force transmit	The time parameters in the packaging mode of forced time or interval time. The value range is 0-65535ms. Note: Setting the transmission time to 0 means no limit on data transmission interval time or not to enable forced time.

7.2.5 UDP Client Mode



Note:

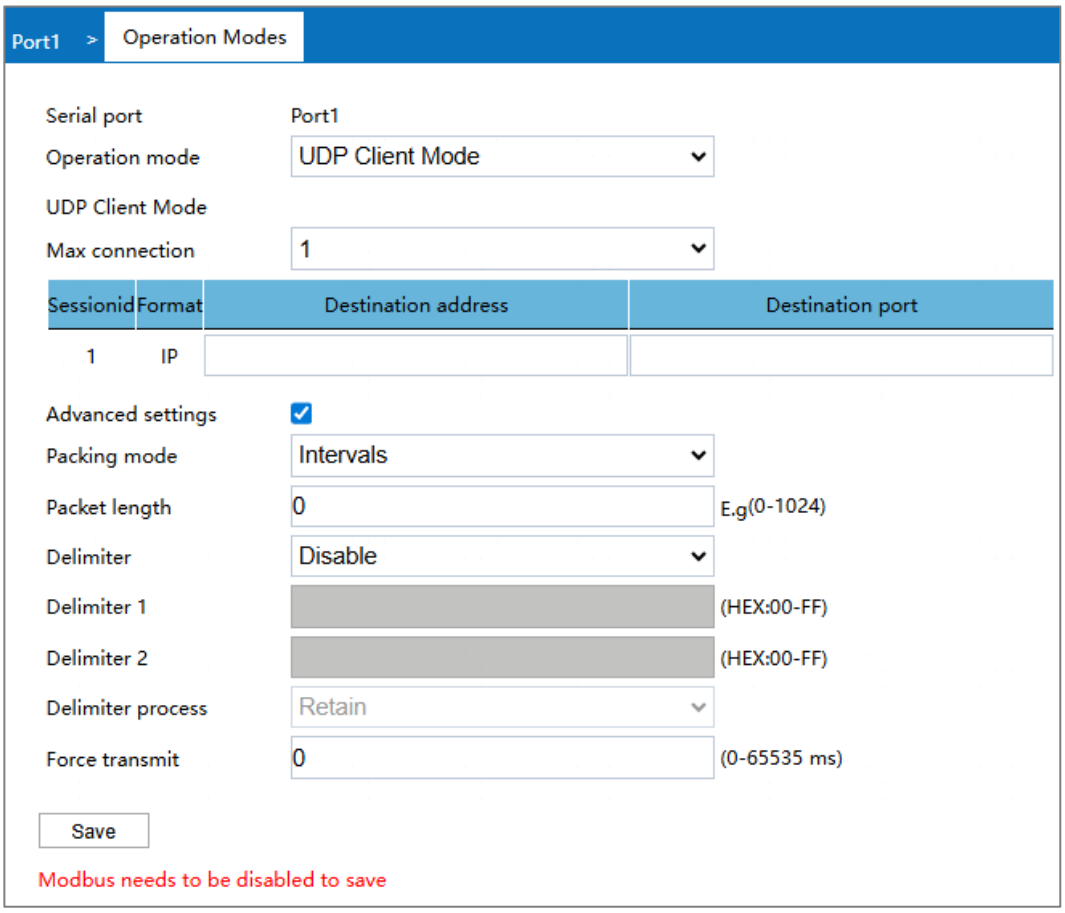
The device picture mentioned in above figure is only an example, and the actual appearance of the device or serial port type is subject to the device obtained.

Under CAN Client Mode, the device can be a client, and it can actively transmit serial data with the host user appointed under the UDP protocol. Devices in UDP mode can transmit data from serial devices to one or more hosts, and serial devices can also receive data from one or more hosts. Compared with TCP mode, UDP protocol is faster and more efficient.

Interface Description

Screenshot of the serial settings interface in UDP Client Mode:

Copyright © 3onedata Co., Ltd.



The main elements configuration description of serial settings interface under UDP Client Mode:

Interface Element	Description
Serial port	Serial port number corresponding to the device
Operation mode	The working mode of serial port of the device, UDP Client Mode. Note: The configuration parameters displayed under different working modes are different.
Max connection	The number of hosts connected to a serial port simultaneously. • Each host communicates with the serial port in the order of “first-in, first-out”. • The system supports up to 4 connections.
Sessionid	The number of UDP sessions corresponds to the maximum number of connections.
Format	Destination address format.
Destination address	Enter the IP address of the opposite host that serial port needs to be connected to.

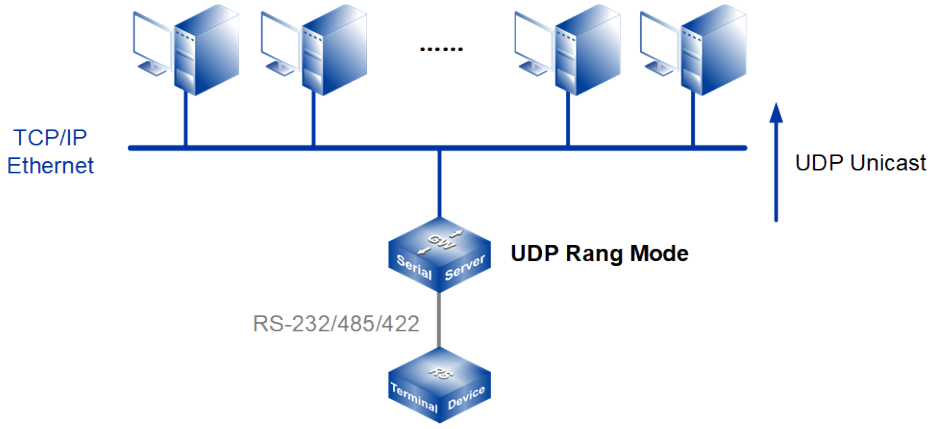
Copyright © 3onedata Co., Ltd.

Interface Element	Description
Destination port	Enter the port number of the opposite host that serial port needs to be connected to.
Advanced settings	Enable advanced settings to configure packaging mode, packaging length, and delimiters.
Packing mode	The serial data is packaged into Ethernet data frame. The options are as follows: • Mandatory time: the system packages serial port data received within a specified time into Ethernet packets and transmit them. • Interval: after sending the last Ethernet packet for some time, the system packages the received serial port data into Ethernet packets and sends them out;
Packet length	For the frame length of the serial data to Ethernet data, the data frame is forwarded within the set time range when it is greater than or equal to the set frame length, and the value ranges from 0 to 1024. It means no limit on data transmission length when it' set to 0. Note: There are some slight deviations between the actual package length value and the set value.
Delimiter	Select the number of delimited characters, the options are as follows: • 0: disable the delimited character function; • 1: enable Delimiter 1; • 2: enable Delimiter 2. Note: If the packaging length or the forced transfer time is 0 and the number of delimited character is greater than 0, the system would detect and process the delimiter after receiving serial data. Every time it receives matched delimiter (or combination of characters), the system would send out all cached serial data via network.
Delimiter 1	Delimiter 1, represent in hexadecimal, the value range is 0x00-0xFF.
Delimiter 2	Delimiter 2, represent in hexadecimal, the value range is 0x00-0xFF.
Delimiter process	Select the character processing method. Options: • Retain: the system would send out the received delimiter and other data via network. • Delete: the matched delimiter (or combination of delimiter) would be deleted. The system only transmits data except delimiter.

Copyright © 3onedata Co., Ltd.

Interface Element	Description
Force transmit	The time parameters in the packaging mode of forced time or interval time. The value range is 0-65535ms. Note: Setting the transmission time to 0 means no limit on data transmission interval time or not to enable forced time.

7.2.6 UDP Rang Mode



Note:

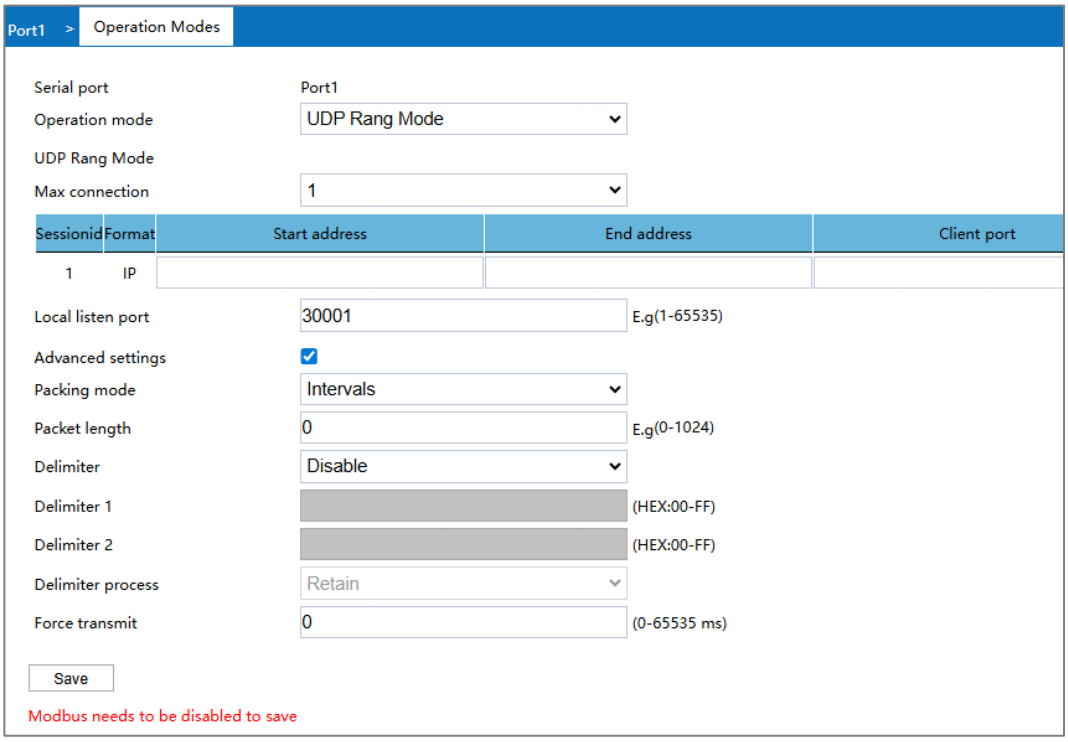
The device picture mentioned in above figure is only an example, and the actual appearance of the device or serial port type is subject to the device obtained.

When routers, switches and other devices do not support multicast, they can work in UDP segment mode to realize multicast function. In this mode, the device transmits serial data with multiple hosts in the same network segment designated by the user through UDP protocol, which can realize point-to-many data communication. UDP port mode serial device can also receive data from one or more hosts.

Interface Description

UDP Rang Mode interface is as follows:

Copyright © 3onedata Co., Ltd.



UDP Rang Mode interface main element configuration instructions:

Interface Element	Description
Serial port	Displays the serial number of the device currently configured.
Operation mode	The working mode of Serial port of the device, UDP Rang Mode. Note: The configuration parameters displayed under different working modes are different.
Max connection	The number of host that one serial port has session with. • Each host communicates with serial port in the order of first-in first-out; • The system supports up to 4 sessions.
Sessionid	The number of UDP sessions corresponds to the maximum number of connections.
Format	Destination address format.
Start address	Enter the start IP address of the UDP rang destination address.
End address	Enter the end IP address of the UDP rang destination address.
Client port	Enter the port number of the opposite host that the device needs to have session with.
Local listen port	The network receives the listening port of UDP data. The user must assign a unique listening port to each serial port so that the system can normally receive UDP data.
Advanced settings	Enable advanced settings to configure packaging mode,

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	packaging length, and delimiters.
Packing mode	Serial port data packaging Ethernet data time, the options are as follows: • Interval: after sending the last Ethernet packet for some time, the system packages the received serial port data into Ethernet packets and sends them out; • Forced time: the system packages serial port data received within a specified time into Ethernet packets and transmit them.
Packet length	For the frame length of the serial data to Ethernet data, the data frame is forwarded within the set time range when it is greater than or equal to the set frame length, and the value ranges from 0 to 1024. It means no limit on data transmission length when it' set to 0. Note: There are some slight deviations between the actual package length value and the set value.
Delimiter	Select the number of delimited characters, the options are as follows: • Disable: disable delimiter function; • 1: Enable Delimiter 1; • 2: Enable Delimiter 2. Note: If the packaging length or the forced transfer time is 0 and the number of delimited character is greater than 0, the system would detect and process the delimiter after receiving serial data. Every time it receives matched delimiter (or combination of characters), the system would send out all cached serial data via network.
Delimiter 1	The Delimiter 1 is expressed in hexadecimal, value range is 00-FF.
Delimiter 2	The Delimiter 2 is expressed in hexadecimal, value range is 00-FF.
Delimiter process	Select the delimiter processing method. Options: • Retain: the system would send out the received delimiter and other data via network. • Delimiter+1: the system transfers data after receiving a delimiter and an extra byte. • Delimiter+2: the system transfers data after receiving a delimiter and 2 extra byte. • Delete: The matching delimiter character (or combination of characters) will be deleted, and the system will only

Copyright © 3onedata Co., Ltd.

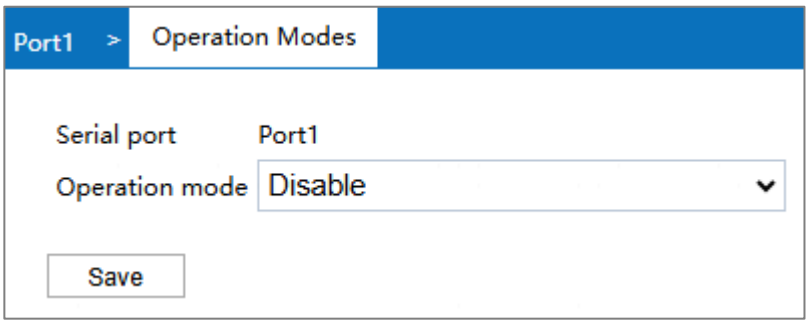
Interface Element	Description
	transmit data other than the delimiter.
Force transmit	The time parameters in the packaging mode of forced time or interval time. The value range is 0-65535ms. Note: Setting the transmission time to 0 means no limit on data transmission interval time or not to enable forced time.

7.2.7 Disable Mode

In Disable Mode, the serial port will be closed and cannot be used normally.

Interface Description

The interface of Disable Mode is as follows:



Main element configuration instructions in Disable Mode interface

Interface Element	Description
Serial No.	Displays the serial number of the device currently configured.
Operation mode	The working mode of serial port of the device, Disable Mode: Note: The configuration parameters displayed under different working modes are different.

7.3 Modbus Setting

Function Description

In the “Mode Settings” page, users can configure the operation Mode of Modbus RTU/ASCII device connecting to the serial port, and IP address of Modbus TCP device

Copyright © 3onedata Co., Ltd.

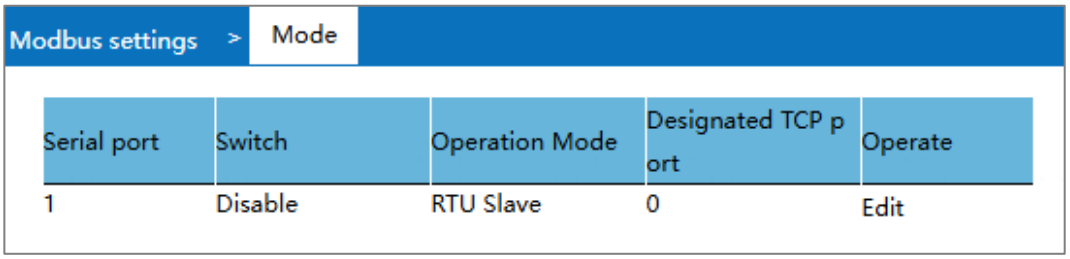
connecting to the LAN, to achieve data conversion between Modbus RTU/ASCII and Modbus TCP.

Operation Path

Open in order: "Network > Modbus Settings > Mode".

Interface Description

Operation Mode interface is as follows:



The main element configuration description of work mode interface:

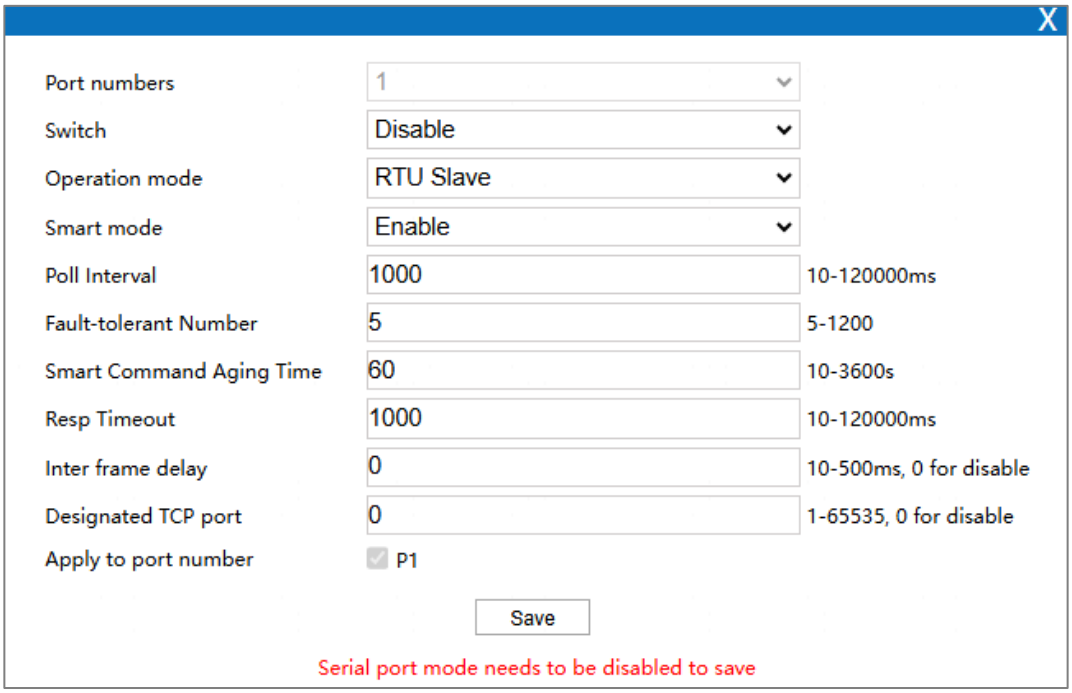
Interface Element	Description
Serial port	Display the serial port number of the device.
Operation mode	The operation mode of current serial port are as follows: • RTU Master • RTU Slave • ASCII Master • ASCII Slave
Designated TCP Port	Display the specific TCP port number, packets from specific TCP port will be routed to the serial port.
Destination IP address	Display the specific IP address, packets from specific IP address will be routed to the serial port.
Operation	Click Edit to modify the parameters of the current serial port mode.

Click Edit in the serial port entry to modify the parameters of the current serial port mode.

Interface Description: Edit

Edit interface is as follows:

Copyright © 3onedata Co., Ltd.



Configuration description of main elements of the Edit interface:

Interface Element	Description
Port numbers	Display port number of current serial port.
Switch	• Disable • Enable;
Operation mode	The network mode drop-down list, select the device role connecting to the serial port, options are as follows: • RTU Master: the serial port connects to the Modbus RTU master device. • RTU Slave: the serial port connects to the Modbus RTU slave device. • ASCII Master: the serial port connects to the Modbus ASCII master device. • ASCII Slave: the serial port connects to the Modbus ASCII slave device. Note: • In slave mode, the device supports connecting up to 256 Modbus TCP Master devices at the same time. • In master mode, the device supports connecting up to 128 Modbus TCP slave devices at the same time.
Smart mode	The drop-down list of smart mode can control the smart mode status, options as follows: • Disable • Enable When the smart mode is enabled, the device will study and memorize the received Modbus commands,

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	then sent the commands to corresponded slave device, and save responses data for the master device to read.
Poll Interval	In smart mode, the device learns the interval time of Modbus command transmission actively, value range is 10-120000, the unit is millisecond.
Fault-tolerant Number	The maximum number of consecutive errors received by the master station that can tolerate and doesn't report in intelligent command polling.
Smart Command Aging Time	In smart mode, the device learns the aging period of Modbus command actively, value range is 10-3600, the unit is second.
Resp Timeout	The data response timeout time of Modbus slave device, value range is 10-120000, unit: millisecond. The device will not wait for the reply and continue to perform next option if it doesn't receive responses in specific time.
Inter frame delay	The delay time of the device transmits received data frames from slave device to the upstream device, value range is 10-500, unit: millisecond. The configuration doesn't take effect when the value is 0.
Designated TCP port	In RTU/ASCII slave mode, Modbus demand designating destination TCP port number will be forwarded to current serial port by device route. Port value range is 1-65535.The configuration doesn't take effect when the value is 0.
Apply to port number	Check the serial port check box to apply the current settings to the specified serial port.

Copyright © 3onedata Co., Ltd.

8 Wireless Client

Notes

This page is displayed when the device works in routing mode, AP mode and bridge mode.

8.1 User List

Function Description

On the page of "User List", user can:

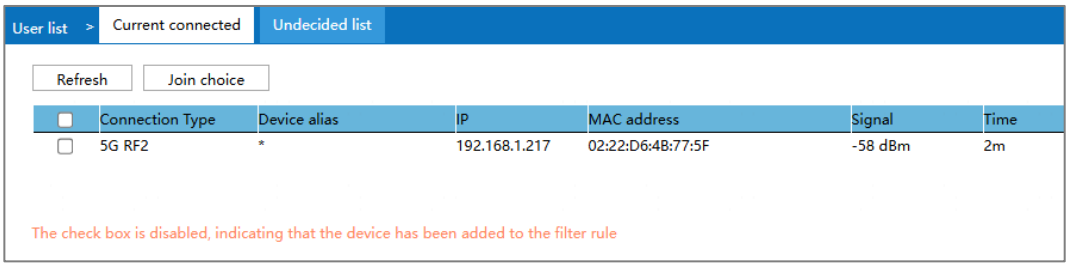
- View the wireless devices currently accessed.
- Set filtering rules for black-and-white list to filter the access of wireless devices.

Operation Path

Please open: "Wireless Client > User List".

Interface Description 1: Current Connected

The interface of the current connected device is as follows:



Configuration of the main elements of the current connected device interface:

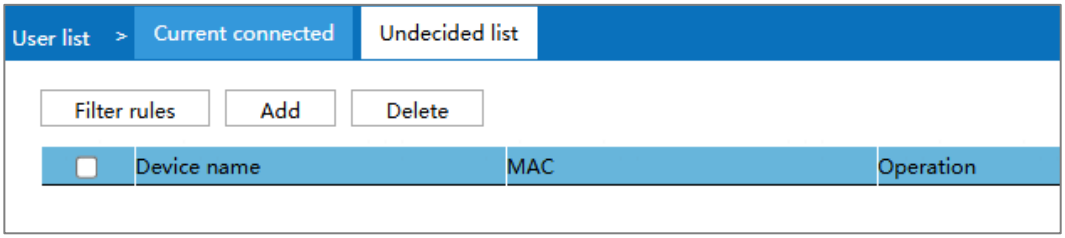
Interface Element	Description
Connection type	The frequency band accessed by the wireless user and the wireless interface RF1 or RF2.
Device alias	The device name of the accessed wireless user.

Copyright © 3onedata Co., Ltd.

Interface Element	Description
IP	The IP address of the accessed wireless user.
MAC address	The MAC address of the accessed wireless user.
Signal	The signal strength of the accessed wireless user. The unit is dBm, the larger the value, the stronger the signal.
Upload	Upload traffic of accessed wireless users.
Download	Download traffic of accessed wireless users.
Time	Online time of accessed wireless users.
Refresh	Refresh the current page display.
Add selected	Add the selected wireless users to the current list.

Interface Description 2: Undecided List

Undecided list interface is as follows:



The main element configuration description of Undecided List interface:

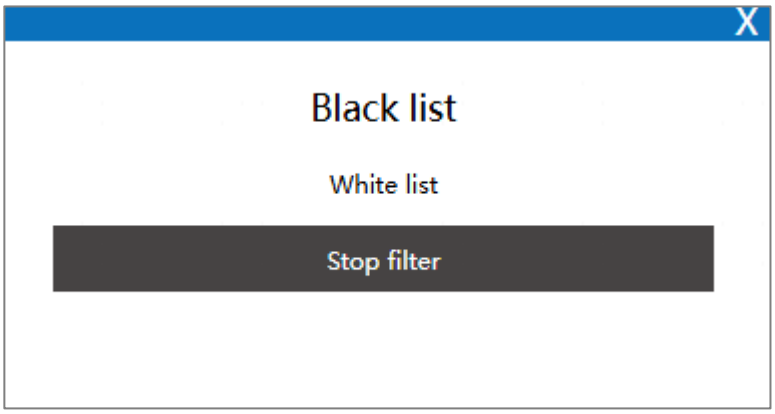
Interface Element	Description
Device name	Device name of wireless user.
MAC	The MAC address of the wireless user.
Operation	Edit the selected wireless user information.

Interface Description 3: Filter Rules

Click “Filter Rules” button to switch between pending list, blacklist and whitelist.

The filter rule interface is as follows:

Copyright © 3onedata Co., Ltd.



The main element configuration description of filter rules:

Interface Element	Description
Black List	Add the wireless users on current page to the blacklist. After adding, the users of this page are prohibited from accessing the device.
White List	Add the wireless users on current page to the whitelist. After adding, only the users of this page are allowed to access the device.
Stop filter	Disable filtering the wireless users of the current page.

Note
When switching lists through filtering rules, it is only effective for the currently selected list.

8.2 User Event

Function Description

On the “User Event” page, you can transmit online/offline event of wireless users to designated server.

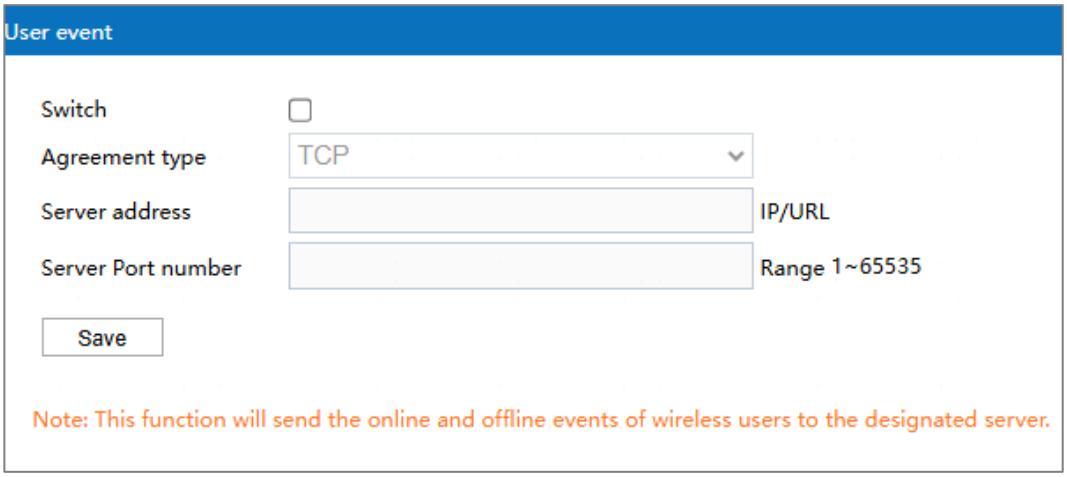
Operation Path

Please open: "Wireless Client > User Event”.

Interface Description

The user event interface is as follows:

Copyright © 3onedata Co., Ltd.



The main element configuration description of user event interface:

Interface Element	Description
Switch	Enable “User Events”.
Agreement type	Select the communication protocol that transmits user events. • TCP Protocol • UDP Protocol
Server address	The address of the server that receives the wireless user's online and offline events.
Server Port Number	The port number of the server that receives the wireless user's online and offline events.
Save	Click “Save” to save the configuration.

Copyright © 3onedata Co., Ltd.

9 Firewall

Notes

Firewall only displays and takes effect when the device is in routing mode or wireless NAT mode. This function is not available in other modes.

9.1 IP Filter

Function Description

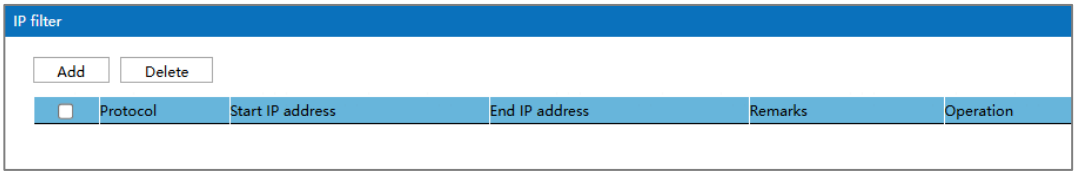
On the "IP filter" page of firewall, user can check or add IP filter to forbid the communication between the clients in LAN and WAN.

Operation Path

Please open in order: "Firewall > IP filter".

Interface Description

IP filter interface is as follows:



The main element configuration description of IP filter interface:

Interface Element	Description
☐	Check box of IP address filtering entries, click to check all IP filter entries.
Protocol	Protocols used by data packets.
Start IP address	Start IP address of LAN IP address range filtered by the device.

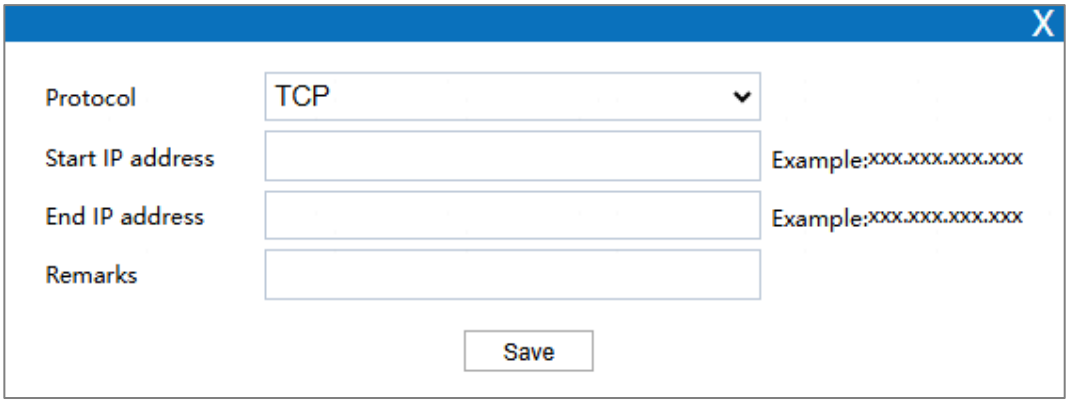
Copyright © 3onedata Co., Ltd.

Interface Element	Description
End IP address	End IP address of LAN IP address range filtered by the device.
Remark	Remarks of IP filter entries.
Operation	Edit: Modify the filtering entries information.

Interface Description: Add IP Filter Entry

Click "Add" to increase IP filter entry.

IP filter interface is as follows:



The main element configuration description of IP filter interface:

Interface Element	Description
Protocol	Drop-down list of data packet protocol, options as follows: • TCP/UDP; • TCP; • UDP.
Start IP address	Start IP address of LAN IP address range filtered by the device, such as: 192.168.1.123.
End IP address	End IP address of LAN IP address range filtered by the device, such as: 192.168.1.123.
Remarks	Remarks of IP filter list support 10 Chinese characters or 32 valid characters, optional.

Copyright © 3onedata Co., Ltd.

9.2 MAC Filter

Function Description

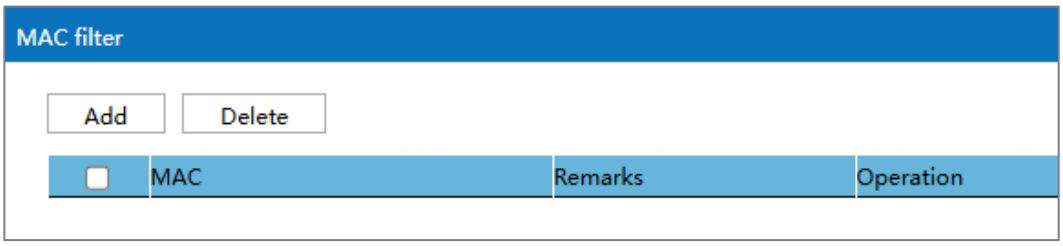
On the "MAC filter" page of firewall, user can check or add MAC filter to forbid the communication between the clients in LAN and WAN; it can effectively control the WAN access rights of user in LAN.

Operation Path

Open in order: "Firewall > MAC filter".

Interface Description

MAC filter interface is as follows:



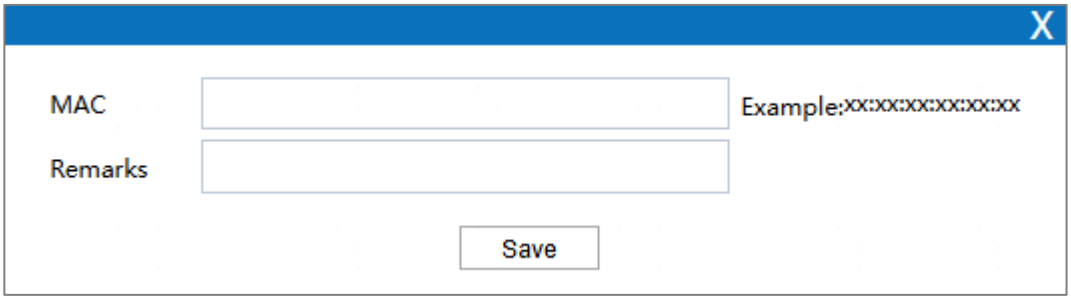
The main element configuration description of MAC filter interface:

Interface Element	Description
	Check box of MAC address filter entries, click to check all MAC filter entries.
MAC	MAC address of LAN client filtered by the device.
Remarks	Remarks of MAC filter entries.
Operation	Edit: Modify the filtering entries information.

Interface Description: Add MAC Filter Entry

Click "Add" to increase MAC filter entry.

MAC filter interface is as follows:



The main element configuration description of MAC filter interface:

Copyright © 3onedata Co., Ltd.

Interface Element	Description
MAC	MAC address of LAN client filtered by the device, such as: XX:XX:XX:XX:XX:XX.
Remarks	Remarks of MAC address filter entries, support 32 valid characters or 10 Chinese characters, optional.

9.3 URL Filter

URL (Uniform Resource Locator) is the brief expression of access method and location of resources gained from Internet; it's the address of standard Internet resources. Each Internet file has a unique URL, which refers to the network address.

Function Description

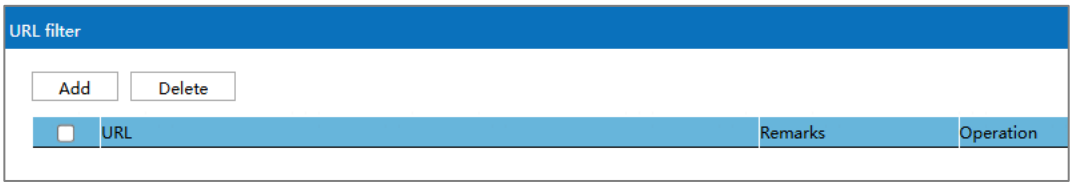
On the "URL filter" page of firewall, user can check or add URL filter to prohibit the client in LAN from accessing URL address in WAN and prevent user from accessing some of the websites.

Operation Path

Please open in order: "Firewall > URL filter".

Interface Description

URL filter interface is as follows:



The main element configuration description of URL filter interface:

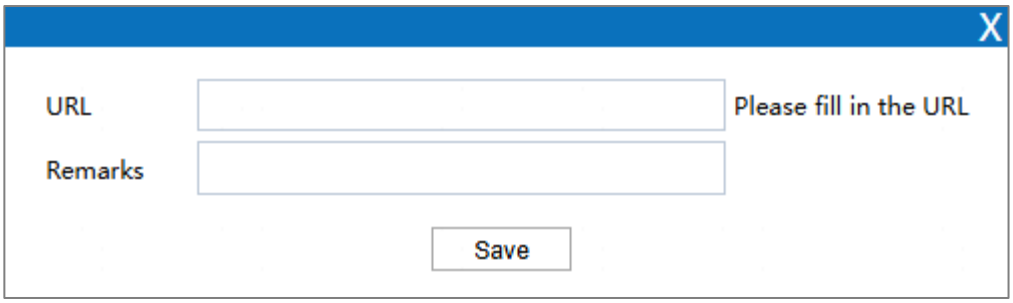
Interface Element	Description
	Check box of URL address filter entries, click to check all URL filter entries.
URL	URL address in LAN filtered by the device.
Remarks	Remarks for URL addresses filtering entries.
Operation	Edit: modify the filter list.

Interface Description: Add URL Filter List

Click "Add" to increase URL filter list.

Copyright © 3onedata Co., Ltd.

URL filter interface is as follows:



The main element configuration description of URL filter interface:

Interface Element	Description
URL	URL address in WAN filtered by the device, ending with ".com", ".cn" and so on. Such as: http://www.123.cn.
Remarks	Remarks of URL address filtering entry, optional.

9.4 DNAT Settings

Function Description

You can configure the translation function of DNAT destination IP address.

Operation Path

Please open in order: "Firewall > DNAT Settings".

Interface Description

DNAT interface is as below:



The main element configuration descriptions of DNAT interface:

Interface Element	Description
Enable	Enable/Disable DNAT configuration, options: • ON; • OFF.
DNAT name	The name of DNAT you set.
Data direction	Data Network Directions Include: • WAN->LAN; • LAN->WAN.

Copyright © 3onedata Co., Ltd.

Ingress source IP	IP address of the ingress source, for example: 192.168.1.1.
Ingress destination IP	Ingress destination IP address, such as: 192.168.1.2.
Ingress destination port	Ingress destination port, value range: 0~65535, if left blank, it means any port.
Egress destination IP	Egress destination IP address, such as: 10.10.1.1.
Egress destination port	Egress destination port, value range: 0~65535; if left blank, it means any port.
Protocol	The protocols used by DNAT are as follows: • TCP; • UDP; • ICMP.
Edit	Click “Edit” button to modify the information of DNAT.
Add	Click “Add” button to add the information of DNAT.
Delete	Check the entry, click “delete selected” button to delete DNAT information.

9.5 SNAT Settings

Function Description

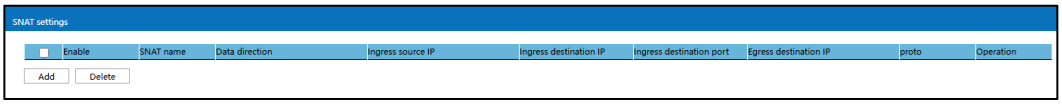
You can configure the translation function of SNAT source IP address.

Operation Path

Please open in order: "Firewall > SNAT Settings".

Interface Description

SNAT interface is as below:



The main element configuration descriptions of SNAT interface:

Interface Element	Description
Enable	Enable/Disable SNAT configuration, options: • ON; • OFF.

Copyright © 3onedata Co., Ltd.

Interface Element	Description
SNAT name	The name of SNAT you set.
Data direction	Data Network Directions Include: • WAN->LAN; • LAN->WAN.
Ingress source IP	IP address of the ingress source, for example: 192.168.1.1.
Ingress destination IP	Ingress destination IP address, such as: 192.168.1.2.
Ingress destination port	Ingress destination port, value range: 0~65535, if left blank, it means any port.
Egress destination IP	Egress destination IP address, such as: 10.10.1.1.
Egress destination port	Egress destination port, value range: 0~65535; if left blank, it means any port.
Protocol	The protocols used by SNAT are as follows: • TCP; • UDP; • ICMP.
Edit	Click “Edit” button to modify the information of SNAT.
Add	Click “Add” button to add the information of SNAT.
Delete	Check the entry, click “delete selected” button to delete SNAT information.

9.6 ARP Binding

ARP (Address Resolution Protocol) is a TCP/IP protocol that gains the physical address according to IP address.

Function Description

On the "ARP binding" page of firewall, user can check or add ARP binding entry. Binding the client IP address to corresponding MAC address to avoid ARP spoofing. When the client sends ARP request to the device, the device will check ARP binding list according to client IP address; if the MAC address in list is same to the one of client, the device will allow the ARP request; otherwise the request won't be allowed, that is the client can't access the device.

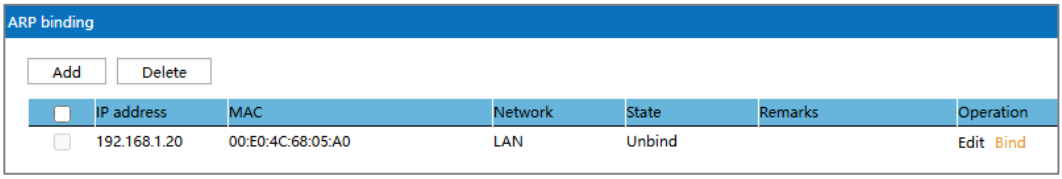
Operation Path

Please open in order: "Firewall > ARP binding".

Copyright © 3onedata Co., Ltd.

Interface Description

ARP binding interface is as follows:



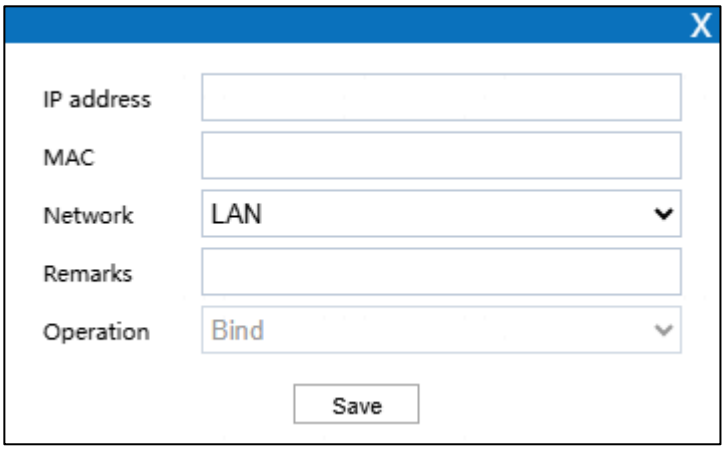
The main element configuration description of ARP binding interface:

Interface Element	Description
	ARP binding entry check box, click to check all ARP binding entries.
IP address	IP address of client.
MAC	MAC address of client.
Network	Network properties of client connection.
State	ARP binding status.
Remarks	Remarks of ARP binding entry.
Operation	Edit: modify ARP binding entry. Binding: bind the IP and MAC address of this entry.

Interface Description: Add ARP Binding Entry

Click "Add" to increase ARP binding entry.

ARP binding settings interface is as follows:



The main element configuration description of ARP binding settings interface:

Interface Element	Description
IP address	IP address of client, such as: 192.168.1.123.
MAC	MAC address of client, such as: 00:22:6F:00:00:01.

Copyright © 3onedata Co., Ltd.

Interface Element	Description
Network	Network properties of client connection, options as follows: • LAN; • WAN.
Remarks	Remarks of ARP binding entry, support 32 valid characters or 10 Chinese characters, optional.
Operation	ARP binding.

9.7 DMZ Settings

DMZ(Demilitarized Zone） is a buffer zone built between non-safety system and safety system for solving the problem that visitor from external network cannot visit internal network server.

Function Description

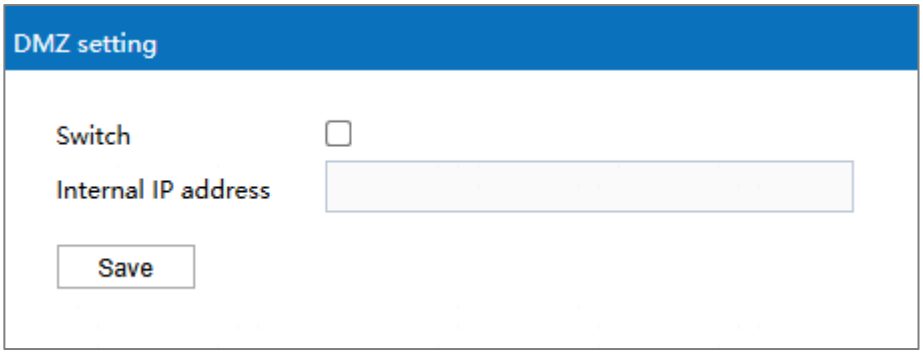
On the page of firewall “DMZ Settings”, user can enable or disable DMZ function. The client can visit the specified LAN client via WAN.

Operation Path

Please open in order: "Firewall > DMZ setting".

Interface Description

The DMZ setting interface is as follows:



The main element configuration description of DMZ setting interface:

Interface Element	Description
Switch	Enable DMZ.
Internal IP address	The IP address of LAN client, for example: 192.168.1.123.

Copyright © 3onedata Co., Ltd.

10 System Tools

10.1 Network Detection

Function Description

On the “Network Detection” page, users can detect the connection status of the specified IP address to estimate the connection status of network. Enable the network detection function, and the device will continuously detect the connectivity of the specified IP address in the network according to a specified interval time. When abnormal network communication is found and the number of detection retries is reached, the device will restart automatically.

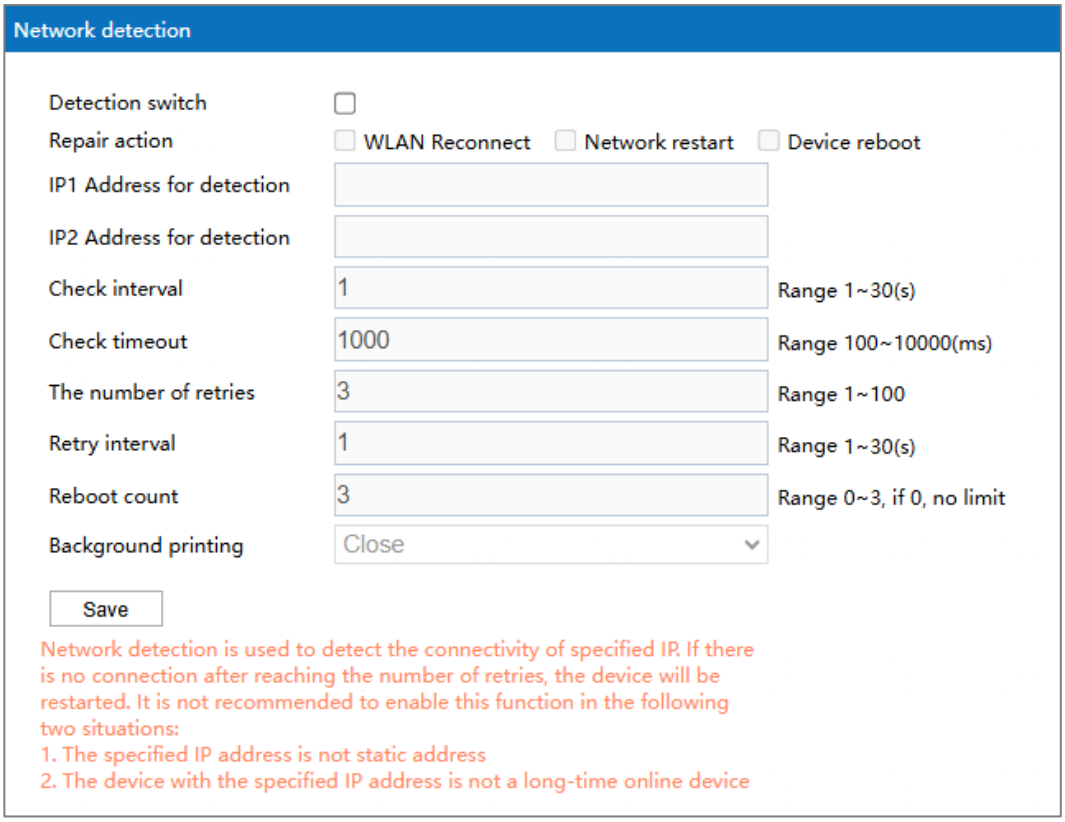
Operation Path

Open in order: "System Tools > Network Detection".

Interface Description

The network detection interface is as follows:

Copyright © 3onedata Co., Ltd.



The main element configuration description of network detection interface:

Interface Element	Description
Detection switch	Check the checkbox to enable the network detection function.
Repair action	The system provides the following operation to recover devices, which are operated in turn as follows. • Reconnect Wireless • Network restart • Reboot the device
IP1 Address for detection	The destination IP1 address of the network detection packet sent by the device. Note: Please do not use the automatically acquired network address or IP1 address of the device that is not online for a long time as the detection IP address.
IP2 Address for detection	The destination IP2 address of the network detection packet sent by the device. Note: Please do not use the automatically acquired network address or IP2 address of the device that is not online for a long time as the detection IP address.
Check interval	Time interval for detecting device IP addresses, ranging from 1 to 30 seconds
Check timeout	Detect the timeout period of the device's IP address, ranging

Copyright © 3onedata Co., Ltd.

Interface Element	Description
	from 100 to 10000ms
The number of retries	The device will send network detection package for 100 times at least when the detected IP address makes no response.
Retry interval	Detect device IP address retry interval, ranging from 1 to 30s
Reboot count	Set the number of device restarts within the range of 0-3, with no limit if the position is 0.
Background printing	Background printing drop-down list, options as follows: • Disable; • Enable: Enabling the background printing function, the result of network detection will be displayed in system log.

10.2 User Settings

Function Description

On the "User settings" page of system tools, user can modify the access password of the device.

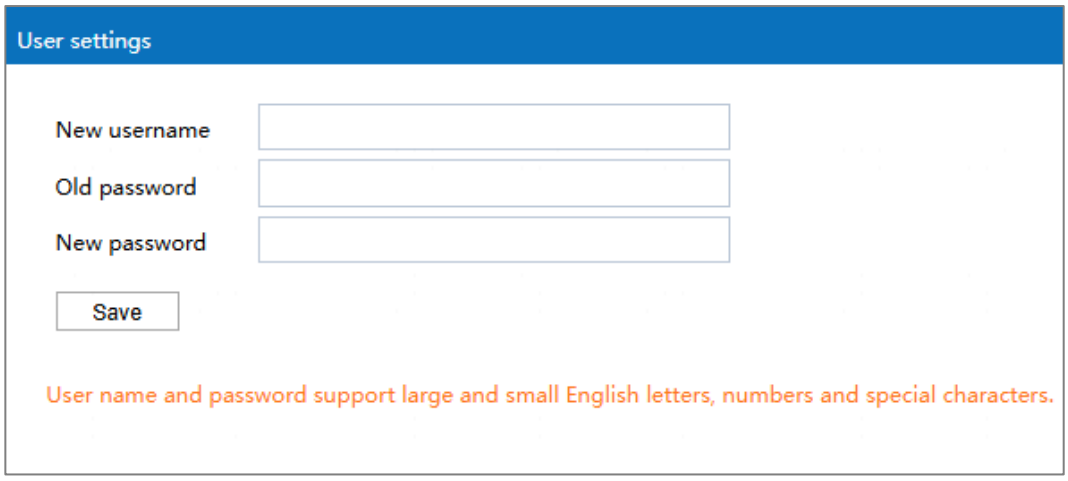
Note
Please log in again after modifying the user name and password.

Operation Path

Please open in order: "System Tools > User Settings".

Interface Description

User settings interface is as follows:



Copyright © 3onedata Co., Ltd.

The main element configuration description of user settings interface:

Interface Element	Description
New username	New username settings of the device. Note: Both the username and password consist of uppercase and lowercase letters, as well as numbers and underline;
Old password	Login password used by current device.
New password	New password settings of the device. Note: Both the username and password consist of uppercase and lowercase letters, as well as numbers and underline;

10.3 Device Alias

Function Description

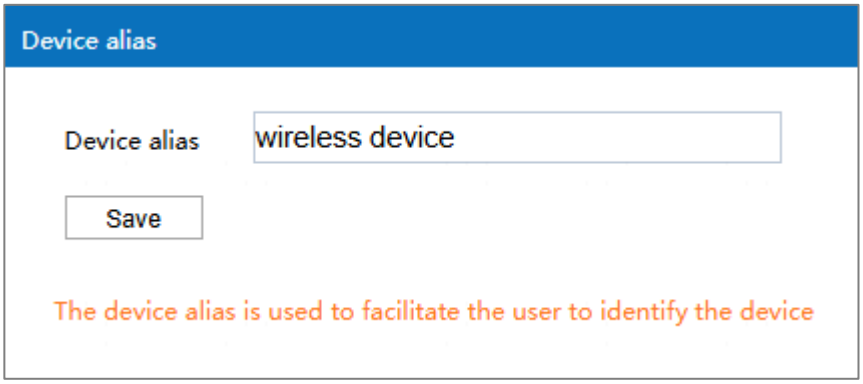
On the “Device Alias” page of system tool, user can set the device alias.

Operation Path

Please open in order: "System Tools > Device Alias".

Interface Description

The Device Alias interface is as follows:



Configuration of the main elements of the device alias interface:

Interface Element	Description
Device Alias	Set the name of the device. The device alias is used to facilitate user identification of the device.
Save	Click “Save” button to save device alias.

Copyright © 3onedata Co., Ltd.

10.4 Time Settings

Function Description

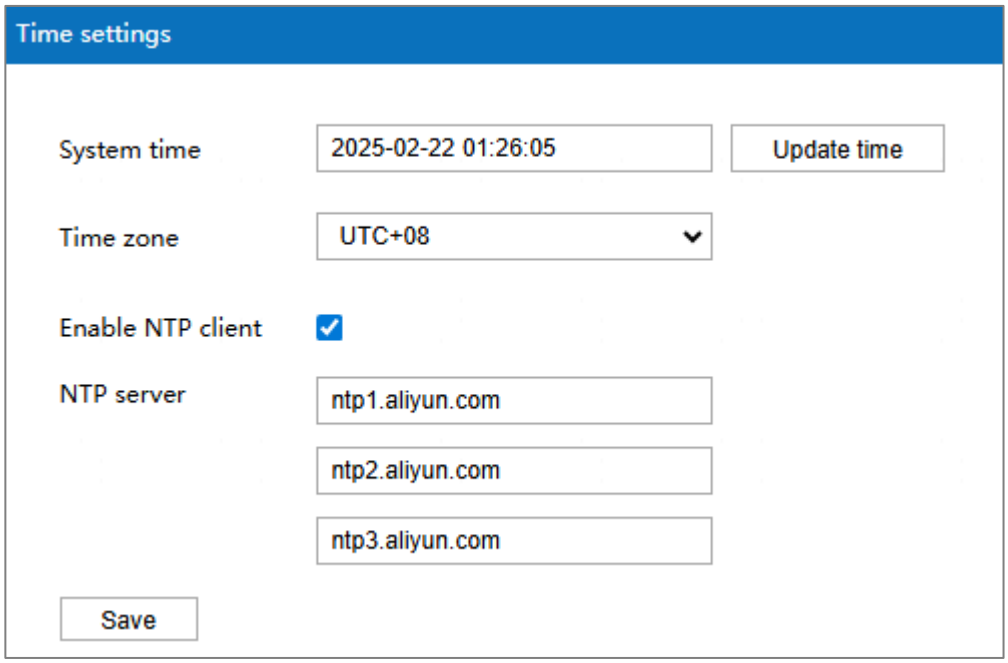
On the "Time Setting" page of the system tool, you can obtain the local time or NTP server time.

Operation Path

Open in order: "System Tools > Time Settings".

Interface Description

Time setting interface is as follows:



The main elements configuration description of time settings interface:

Interface Element	Description
System time	Program version used by current device.
Time zone	Select the current time zone.
Enable NTP client	When the NTP client is enabled, you can synchronize the time of the NTP server.
NTP server	NTP server address, 3 addresses can be provided.

Copyright © 3onedata Co., Ltd.

10.5 Timed Restart

Function Description

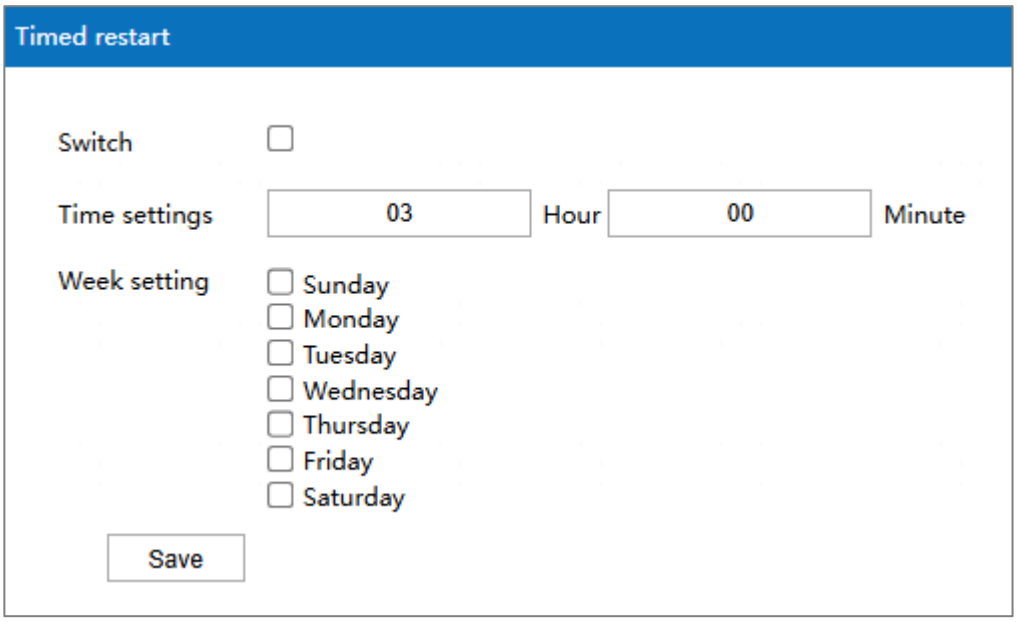
On the "Timed Restart" page of the system tool, you can set the periodic and timed restart of the device in weeks.

Operation Path

Open in order: "System Tools > Timed Restart".

Interface Description

The timed restart interface is as follows:



The main elements configuration description of timed restart interface:

Interface Element	Description
Switch	Program version used by current device.
Time settings	Set the time of timed restart.
Week setting	Check the restart date to set periodic timed restart in weeks.

10.6 Access Settings

Notes

It displays and takes effect when the device is in routing mode or wireless NAT mode.

Copyright © 3onedata Co., Ltd.

Function Description

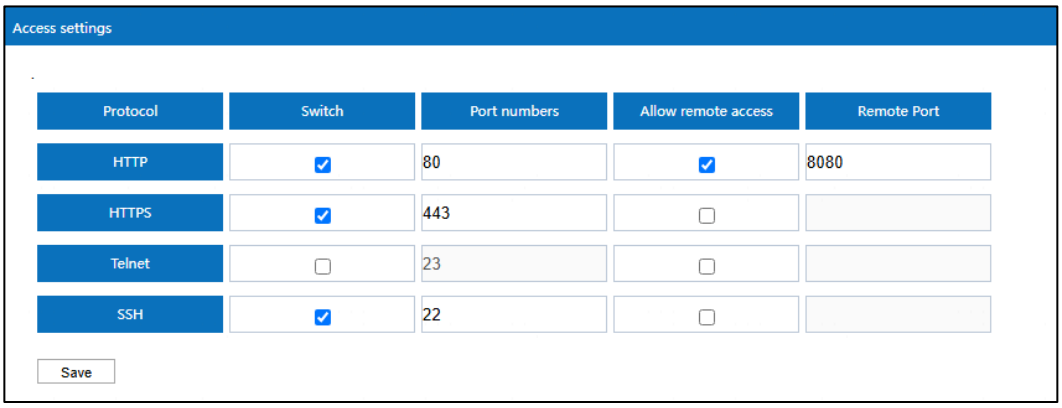
On the “Access Settings” page of the system tool, you can set the switch and port for remote access. The remote access function of Port 8080 (WWW service) is enabled by default. The WEB page of the device can be accessed through the WAN.

Operation Path

Open in order: "System Tools > Access Settings".

Interface Description (Routing Mode)

The routing mode access settings interface is as follows:



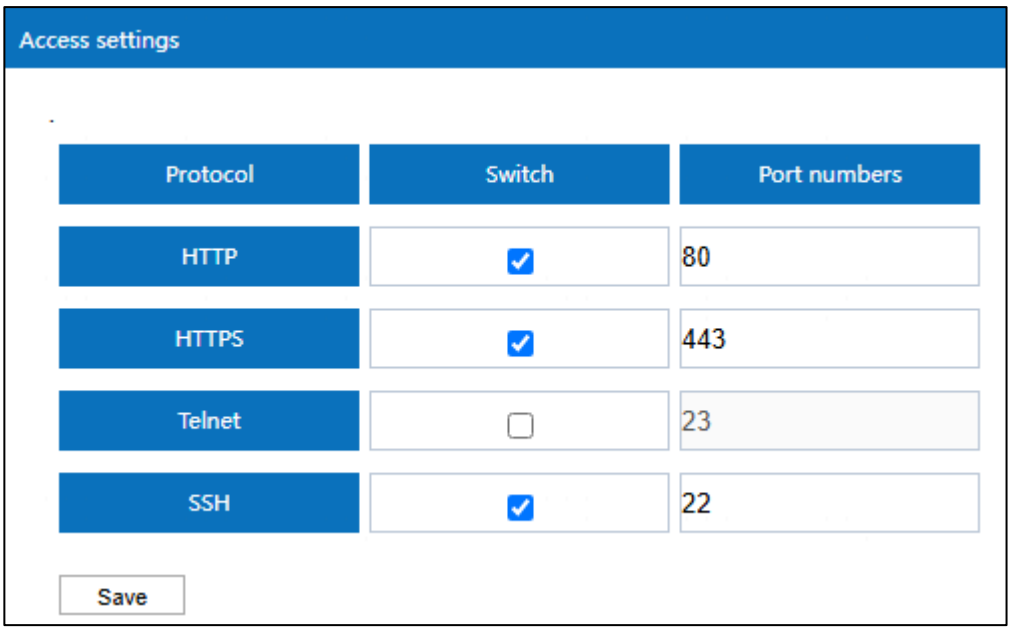
The main elements configuration description of routing mode access settings interface:

Interface Element	Description
Protocol	Support “HTTP”, “HTTPS”, “Telnet”, and “SHH”.
Switch	Enable or disable port number.
Port numbers	Local access port.
Allow remote access	Enable or disable remote access.
Remote port	Remote access port.
Save	Save the settings.

Interface Description (AP mode)

AP mode access settings interface is as follows:

Copyright © 3onedata Co., Ltd.



The main elements configuration description of AP mode access settings interface:

Interface Element	Description
Protocol	Support “HTTP”, “HTTPS”, “Telnet”, and “SHH”.
Switch	Enable or disable port number.
Port numbers	Local access port.
Save	Save the settings.

10.7 System Upgrading

Function Description

On the "System upgrade" page of system tools, user can update the device system program via firmware upgrade.

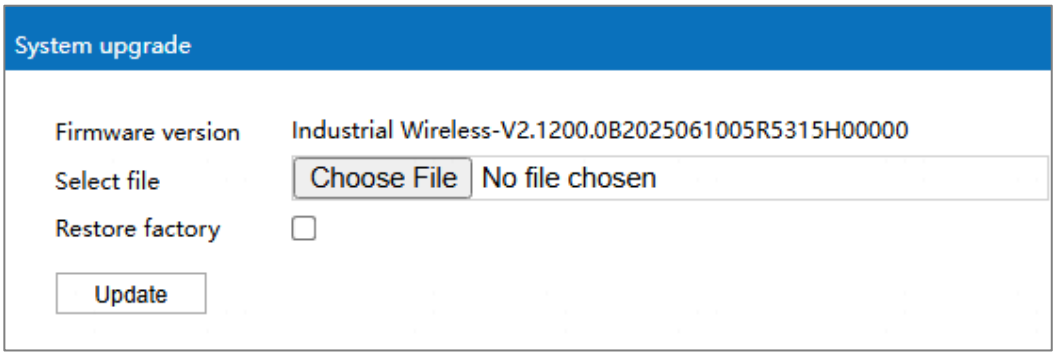
Operation Path

Please open in order: "System Tools > System upgrade".

Interface Description

System upgrade interface is as follows:

Copyright © 3onedata Co., Ltd.



The main element configuration description of system upgrade interface:

Interface Element	Description
Firmware version	Program version used by current device.
Select file	Click "Choose File" to select local upgrade file of the host. Note: Please select the program version that is compatible with the current hardware during upgrading.
Update	The button of "Update" to upgrade the device program. Notice: It takes a while during the upgrade process. Do not power off the device.
Restore factory	Restore factory settings check box, if checked, the system will be restored to factory configuration after successful upgrade; If unchecked, the configuration of the device will remain unchanged and the firmware version information will change after the system upgrade succeeds.

10.8 Config Update

Function Description

On the "Config update" page of system tools, user can conduct download, upload configuration for the device.

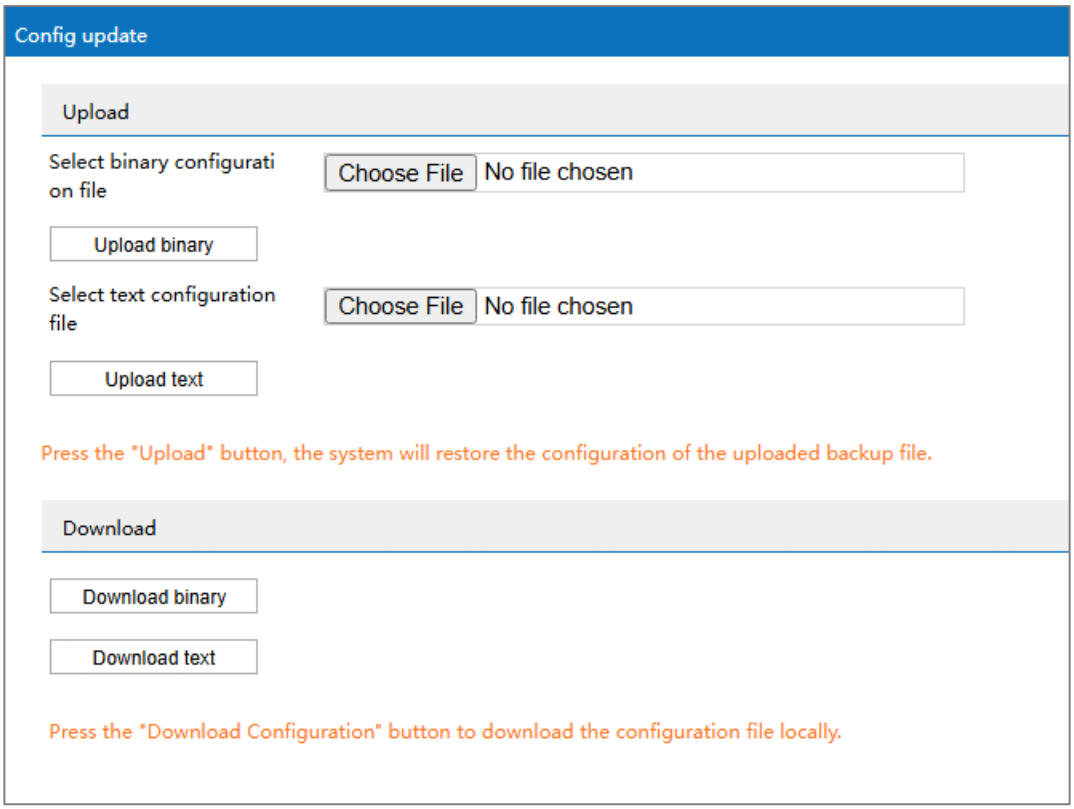
Operation Path

Please open in order: "System Tools > Config Update".

Interface Description

Configuration update interface is as follows:

Copyright © 3onedata Co., Ltd.



The main element configuration description of config update interface:

Interface Element	Description
Choose File	The "Choose File" button allows user to select the backup configuration file for the host.
Upload	Click the "Upload" button to upload the backup configuration file to the current device, so that the device can restore the configuration in the backup file.
Download	Click the "Download" button to download the configuration file of the current device locally and save it in the format of ".file".

10.9 System Management

Function Description

On the system tool "System Management" page, you can restart the device online and restore the factory settings.

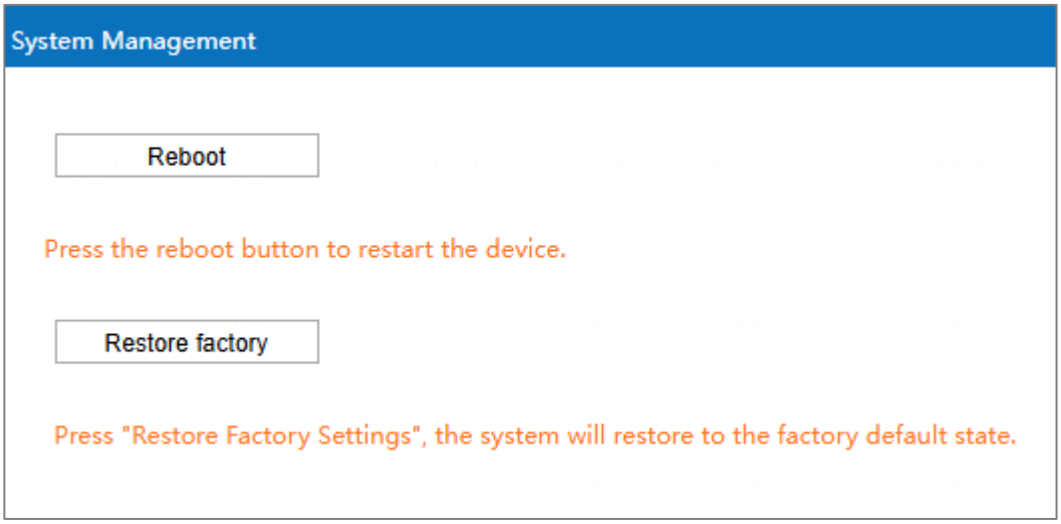
Operation Path

Open in order: "System Tools > System Management".

Copyright © 3onedata Co., Ltd.

Interface Description

The system management interface is as follows:



The main element configuration description of system management interface:

Interface Element	Description
Reboot	Click "Reboot" to restart the device.
Restore factory	Click the "Restore factory" button, the device will be restored to the default state of factory defaults.

10.10 Log Manage

Function Description

On the “Log Management” page of the system tool, you can synchronize the device system log information to the remote log server.

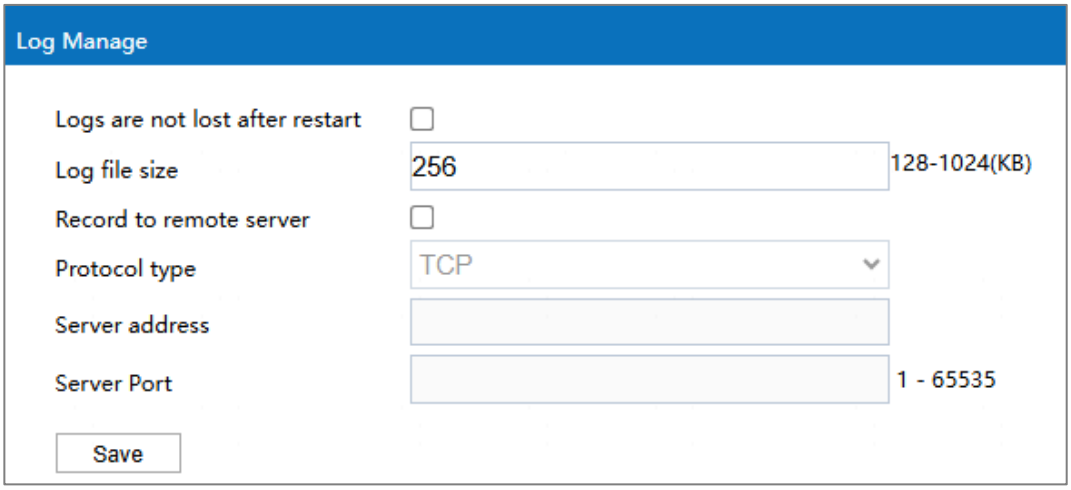
Operation Path

Open in order: "System Tools > Log Manage".

Interface Description

The log management interface is as follows:

Copyright © 3onedata Co., Ltd.



The main elements configuration description of log management interface:

Interface Element	Description
Logs are not lost after restart.	When checked, the log will not be lost after the device is restarted.
Log file size	The storage size of system log files is limited, and the value range is 128-1024KB.
Record to remote server	When checked, the system log information can be synchronized to the specified log server.
Protocol type	The protocol type used to record log information to the remote server is as follows: • TCP • UDP.
Server address	IP address of the syslog server.
Server Port	The port number of the syslog server,value range is 0-65535.

Copyright © 3onedata Co., Ltd.

11 Diagnostic Tools

11.1 Ping Test

Ping belongs to a communication protocol and is part of the TCP/IP protocol. User can adopt the ping command to check whether the network is connected, which can help us analyze and determine network faults.

Function Description

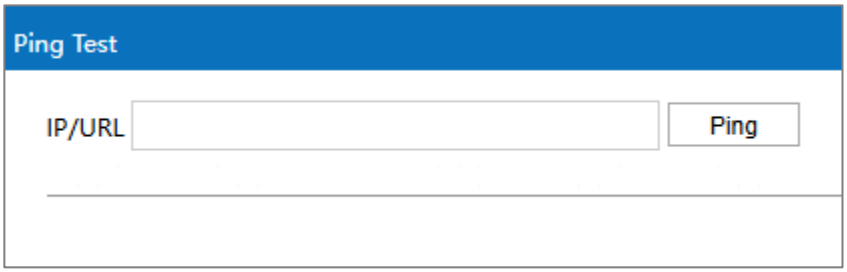
On the page of "Ping Test", user can detect whether the target host can be connected.

Operation Path

Open in order: "Diagnostic Tools > Ping Test".

Interface Description

The Ping test interface is as follows:



The main elements configuration description of Ping test interface:

Interface Element	Description
IP/URL	Target IP/URL address information to be detected.
Ping	Click the “Ping” button to start the test, and the test result is displayed below.

11.2 Route Tracking

Route Tracking is a route-tracking utility that determines the path taken by an IP datagram to access a destination. The Route Tracking command uses the IP Time to

Copyright © 3onedata Co., Ltd.

Live (TTL) field and ICMP error messages to determine the route from one host to other hosts on the network.

Function Description

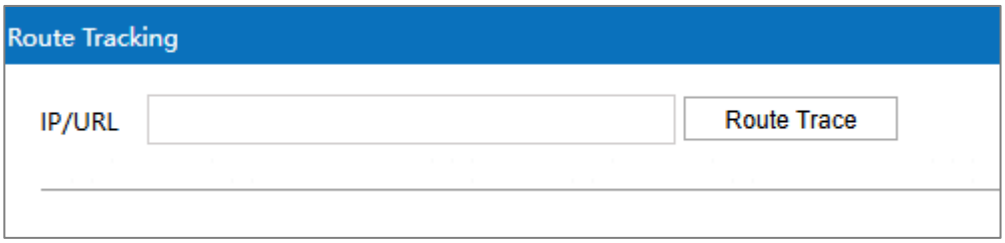
On the page of "Route Tracking", user can perform route tracking for the target host.

Operation Path

Open in order: "Diagnostic Tools > Route Tracking".

Interface Description

The route tracking interface is as follows:



The main elements configuration description of route tracking interface:

Interface Element	Description
IP/URL	Destination IP/URL address that requires route tracking.
Route Trace	Click the "Route Trace" button to start tracking, and the test results are displayed below.

Copyright © 3onedata Co., Ltd.

12 FAQ

1. **Why is the signal strength very good, but the throughput is very low?**

   Sometimes, during the throughput test, it is found that the signal strength of connection is very strong (> 30dbm), but the tested throughput is very low, and even disconnection occurs. A common misconception is that the stronger the signal, the better the quality. This is not true. Signal quality and signal strength are not positively correlated. The signal strength has a saturation RSSI. When the signal strength is above this threshold, the received signal is excessively saturated and the receiver is unable to demodulate, leading to a significant decrease of throughput and even disconnection. This problem can be solved by reducing the AP power or increasing the attenuation between the AP and the client.

2. **Why do some 5G client devices fail to scan the 5G SSID of AP?**

   5G has three frequency bands: high, medium and low. Different countries support different frequency bands. Some support two of them and some only support one of them. Therefore, when AP works in the frequency band that the client does not support, the client cannot scan the SSID of AP, and another client that supports this frequency band can scan it. Another possible reason is the problem mentioned in FAQ 1, that is, the signal is too strong, which will also lead to the failure to scan the SSID. This situation usually occurs when the feeder directly connects the AP to the client without adding an appropriate attenuator.

3. **Why is the near throughput of an outdoor AP worse than an indoor AP?**

   This is determined by the nature of the outdoor AP antenna. The antenna of outdoor AP is different from that of indoor AP. Its advantage lies in long-distance transmission. It is a normal phenomenon that the throughput of an outdoor AP is slightly worse than an indoor AP in the short distance transmission (within 50 meters).

3onedata proprietary and confidential
Copyright © 3onedata Co., Ltd.

4. **What is a universal bridging?**

   Universal bridging is a way to bridge an AP and a client by creating a proxy forwarding mechanism. Instead of putting the wired network port and the wireless network port in the same bridge, it modifies the policy routing table to make all the host devices connected establish forwarding relationship with the wireless network port, and let the wireless port agent forward data packets, ARP and DHCP packets. In other words, it realizes the soft bridging between wireless port and wired port.

5. **When should universal bridging and WDS be used?**

   General bridge and client mode use WDS to bridge with AP, but WDS does not have a standard protocol, different wireless chip manufacturers implement WDS in different ways, resulting in the WDS bridge of different manufacturers have serious compatibility problems, the phenomenon is unable to bridge or bridge can not communicate. Universal bridging has no compatibility issues, but due to its nature, is not suitable for networks involving routing learning (such as OSPF networks) and is only suitable for simple application scenarios. Therefore, WDS is preferred if WDS is compatible and universal bridging is preferred if WDS is not compatible. At present, the company's self-developed wireless products are all Qualcomm solutions. They have no compatibility problems. Therefore, if both the AP end and the client are our self-developed products, WDS can be used.

6. **Why does throughput not improve after 2.4G is changed from 20M to 40M?**

   In an environment with severe interference, if 2.4G is changed from 20M to 40M, the throughput may not improve, or even get worse. Because there are only 13 channels in 2.4G, each channel is 5M, and all the channels add up to 65M, while a signal of 40M occupies 40M. Therefore, if there are 2.4G signals of similar channels nearby, serious interference problems will inevitably occur due to channel overlap, leading to the throughput failure. Therefore, in the environment with severe interference, 20M is recommended for 2.4G.

7. **How do I access a device when an Intranet IP is acquired dynamically but not connected to a DHCP server?**

   When the self-developed product fails to obtain the address allocated by the DHCP server within 1 minute, a default IP address will be set automatically. The IP address is 192.168.1.254, and you can use this address to access the device. When the device obtains the address allocated by the DHCP server, the default

Copyright © 3onedata Co., Ltd.

IP would be automatically overwritten.

Copyright © 3onedata Co., Ltd.

13 Maintenance and Service

Since the date of product delivery, our company provides five-year product warranty. According to our company's product specification, during the warranty period, if the product exists any failure or functional operation fails, our company will repair or replace the product for users free of charge. However, the commitments above do not cover damage caused by improper usage, accident, natural disaster, incorrect operation or improper installation.

In order to ensure that consumers benefit from our company's wireless AP, consumers can get help and solutions in the following ways:

- Internet Service;
- Service Hotline;
- Product repair or replacement;

13.1 Internet Service

More useful information and tips are available via our company website.

Website: http://www.3onedata.com

13.2 Service Hotline

Users of our company's products could call technical support office for help. Our company has professional technical engineers to answer your questions and help you solve the product or usage problems ASAP. Free service hotline: +86-4008804496

Copyright © 3onedata Co., Ltd.

13.3 Product Repair or Replacement

As for the product repair, replacement or return, customers should firstly confirm with the company's technical staff, and then contact the salesmen to solve the problem. According to the company's handling procedure, customers should negotiate with our company's technical staff and salesmen to complete the product maintenance, replacement or return.

3onedata proprietary and confidential
Copyright © 3onedata Co., Ltd.

3onedata



3onedata Co., Ltd.

Headquarter Address:	3/B, Zone 1, Baiwangxin High Technology Industrial Park, Song Bai Road, Nanshan District, Shenzhen, 518108, China
Technology Support:	tech-support@3onedata.com
Service Hotline:	4008804496
Official Website:	http://www.3onedata.com