MAG2100 Analog Gateway User Manual V1.0

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Welcome

Thanks for choosing the MAG2100 Analog Gateway for VOIP!We hope you will make full use of this rich-feature analog gateway. Contact us if you need any technical support:+86-755-66630978

About this manual

This manual provides information about the introduction of the MAG2100 Analog Gateway and about how to configure or use it. Please read this document carefully before configuring features.

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Declaration of Conformity

Hereby,OpenVox Communication Co.,Ltd.declares that MAG2100 is in conformity with the essential requirements and other relevant provisions of CE and FCC.

Warranty

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content

1. Overview 4
1.1 What is MAG2100 Analog Gateway? 4
1.2 Sample Application 4
1.3 Product Appearance 5
1.4 Software features 8
1.5 Physical Information 9
1.6 Software 9
2. Status 11
2.1 System Information 11
2.2 Network Status 12
2.3 Interface Board Status 13
2.4 Port Status 14
2.5 CDR 14
2.6 Call Features Status 15
3. Network Settings 17
3.1 Local Network 17
3.2 Static Routing 20
3.3 Firewall 21
3.4 IP Alias 22
3.5 VPN Settings 23
4 Profiles 25
4.1 SIP Settings 25
4.2 Digitmap Settings 27
4.3 VoIP Setting 30
4.4 Analog Settings 31
5. FXS Port settings 33
5.1 Basic Setting 33
5.2 Call Setting 34
5.3 Advanced Setting 35
6. Advanced Configuration 36
6.1 Fax Parameters 36
6.2 Qos Settings 36
6.3 Analog Settings 37
6.4 VOIP Settings 39
6.5 Security Settings 42
6.6 VEX 42
7 Maintenance 44
7.1 Automatic Restart 44
7.2 Factory Reset 44
7.3 Auto Provision 44
7.4 Firmware Upgrade 46
7.5 Time Settings 46
7.6 User Management 47

7.7 Network Capture 48
7.8 Log Management 49
7.9 SNMP 50
7.10 Cloud Management 50
7.11 UPnP 51
7.12 Whitelist 51
7.13 Ping Test 51
7.14 Tracert Test 52
7.15 DNS test 52
7.16 Port Recording 53
7.17 Port Test 53
Terminology 53
Appendix 54

1. Overview

1.1 What is MAG2100 Analog Gateway?

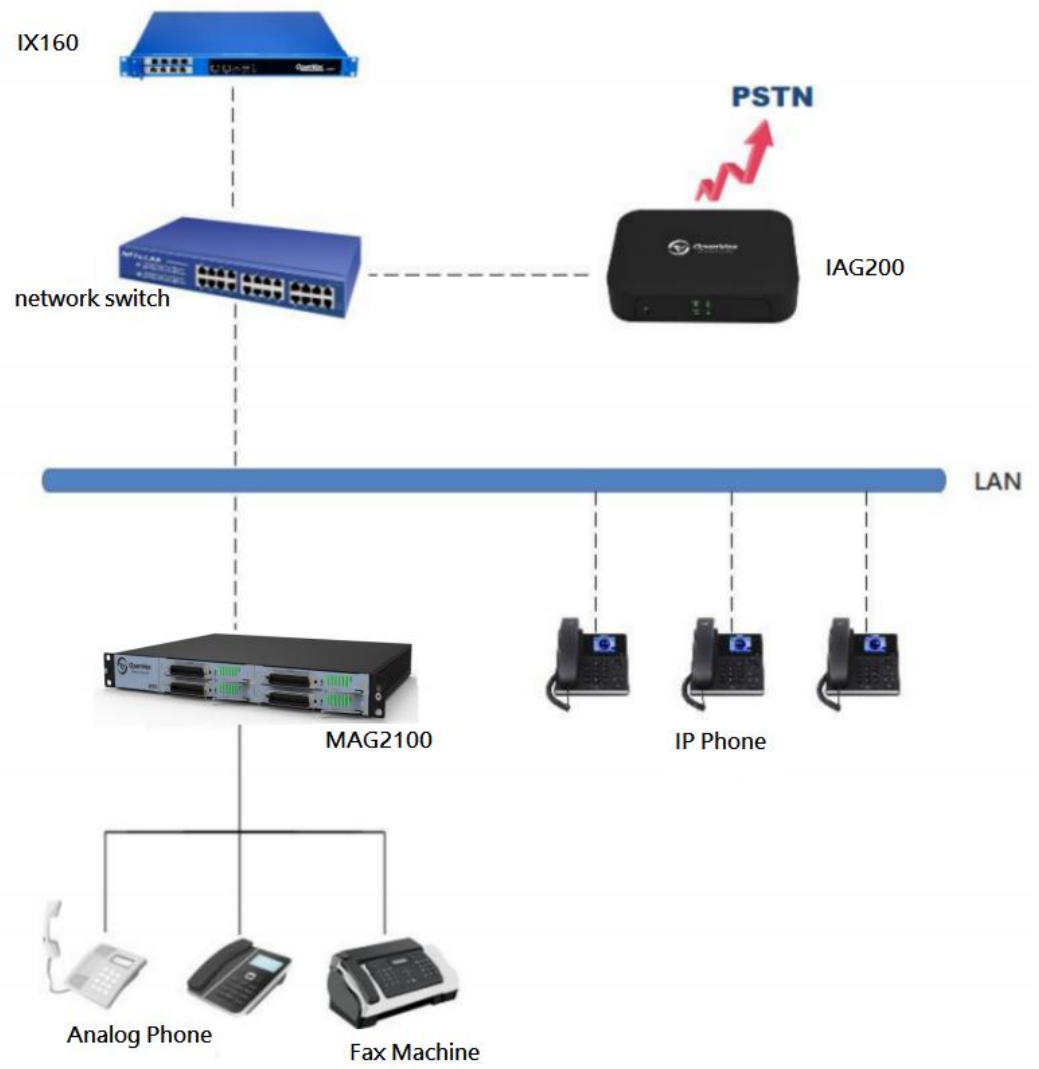
The MAG2100 Analog Gateway is the latest addition to the MAG series of analog gateways and has established itself as a leading VoIP analog gateway solution in the industry. Users can easily set up their own analog gateway system through a user-friendly web interface.

With support for 48/72/96 FXS ports, the MAG2100 Analog Gateway features a modular design that allows for flexible expansion or reduction of module boards as needed.

The MAG2100 Analog Gateway supports various codecs such as G.711A, G.711U, G.729, G.722, G.723, G.726, OPUS, ILBC, AMR and AMR-WB. In terms of software integration, the MAG series analog gateways utilize standard SIP protocol, making them compatible with popular IPPBXs and SIP servers. They are also compatible with most VoIP operating systems platforms including Asterisk, Issabel, 3CX, FreeSWITCH, BroadSoft, VOS, and more.

1.2 Sample Application

Figure 1-2-1 Topological Graph

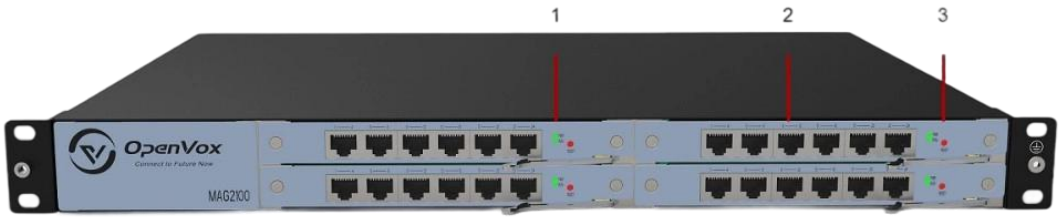


1.3 Product Appearance

The picture below is appearance of MAG2100 Analog Gateway.

Figure 1-3-1 Product Appearance

Figure 1-3-2 Front Panel



1: Module board power and operational status indicator lights

2: Analog port

3: Module board reset button

Figure 1-3-3 Back Panel

1: Device power and switch

2 : Device power and switch

3 : SFP

4 : Network

5 : Console

6 : Device power and operational status indicator lights

7 : Device reset button

The MAG2100 utilizes modular boards that are hot-swappable, allowing for flexible expansion or reduction of module boards based on specific needs. This enables support for 48/72/96 FXS ports and SIP account registrations.

Figure 1-3-4 Module board

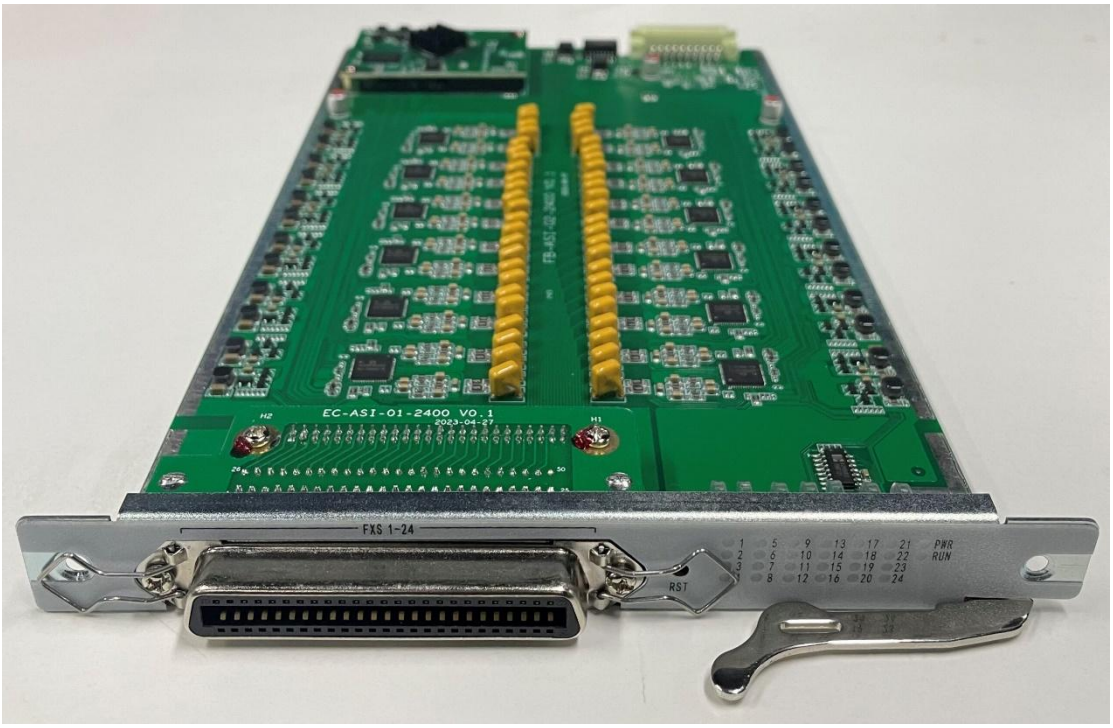
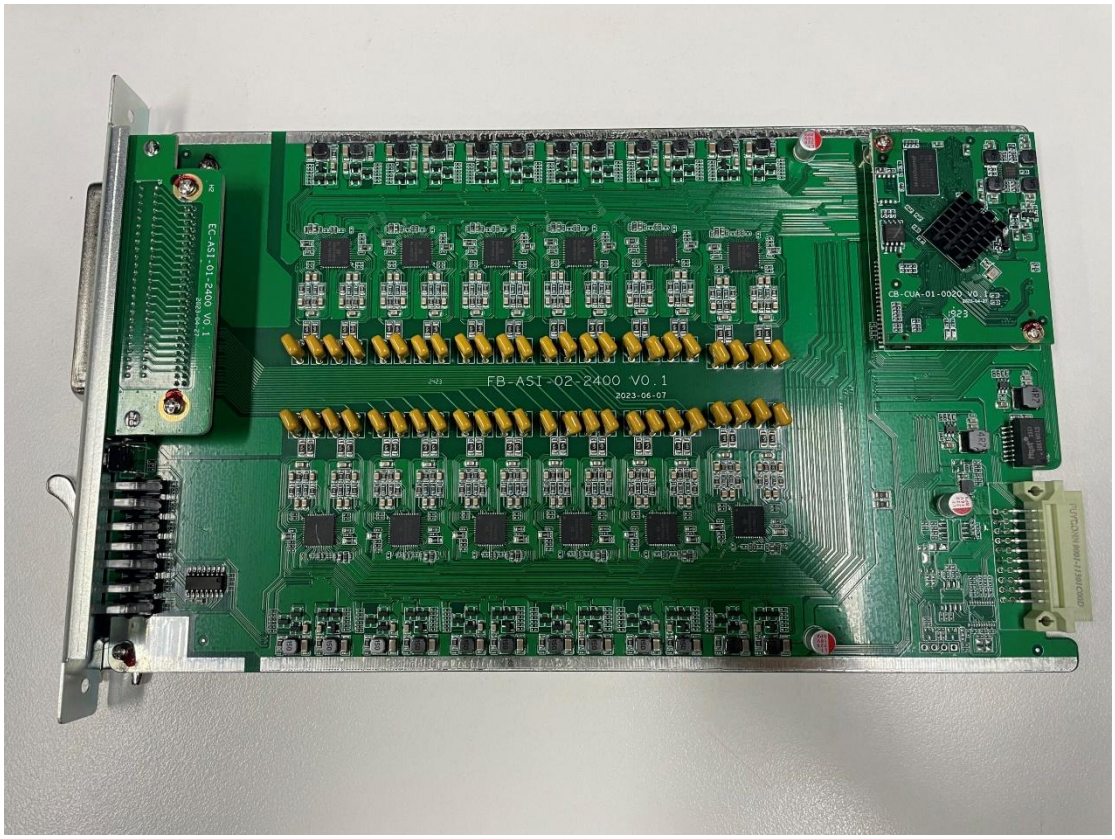


Figure 1-3-5 Module board



1.4 Software features

Option	Description
Analog Port	48/72/96 FXS Ports
SIP Account&Template	48/72/96 SIP account,4 Templates
Voice Compression	G.711 alaw,G.711 ulaw,G.722,G.729, G.723,OPUS, LIBC, AMR,AMR-WB
Fax	T.38 is a fax relay protocol that adheres to Class 3 fax with a maximum speed of 14.4 kbps and automatically switches to G.711 for transmitting faxes. T.38 fax relay utilizes fax data pumps such as V.17, V.21, V27ter, and V29 to facilitate fax transmission.
QoS	Diffserve, ToS, 802.1 P/Q VLAN tagging
Phone Features	Caller ID display or block, call waiting, blind transfer and attended transfer, call forwarding, do not disturb, callback, paging, message waiting indicator light and intermittent tone, automatic dialing, flexible dialing rules
DTMF	RFC4733,INBAND,INFO,AUTO,AUTO_INFO
SIP Signal	SIP (RFC 3261) over UDP/TCP/TLS

Security	SRTP/TLS/SIPS, HTTPS, 802.1x
Update and Auto Provision	TFTP, HTTP, HTTPS
Network Protocols	TCP/UDP, RTP/RTCP, HTTP/HTTPS, ARP, ICMP, DNS, DHCP, NTP, TFTP, PPPoE, STUN

1.5 Physical Information

Table 1-5-1 Description of Physical Information

Option	Description
Port Type	RJ45/RJ21
Weight	4.5kg
Size	440mm*44.5mm*335mm
Power Source	100 ~ 240V AC/-48 ~ -60V DC
Max Power	120W
Operating Temperature Range	0° C ~ 45° C
Storage Humidity Range	10% ~ 90% non-condensing
Storage Temperature Range	-20° C ~ 70° C
Certification	CE&FCC

1.6 Software

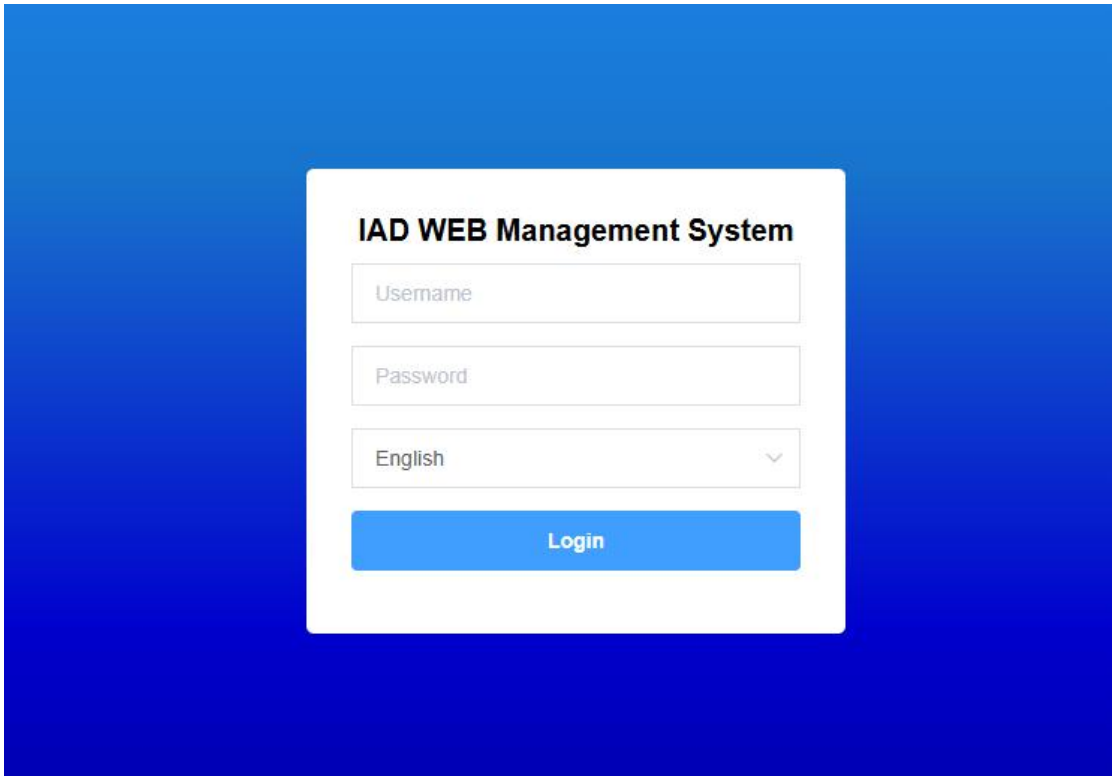
Default IP: 192.168.6.65

Username: admin

Password: admin

Connect the Ethernet cable to LAN1/LAN2 or SFP port, and enter the default IP address in the browser to access the gateway for configuration.

Figure 1-6-1 Login Interface

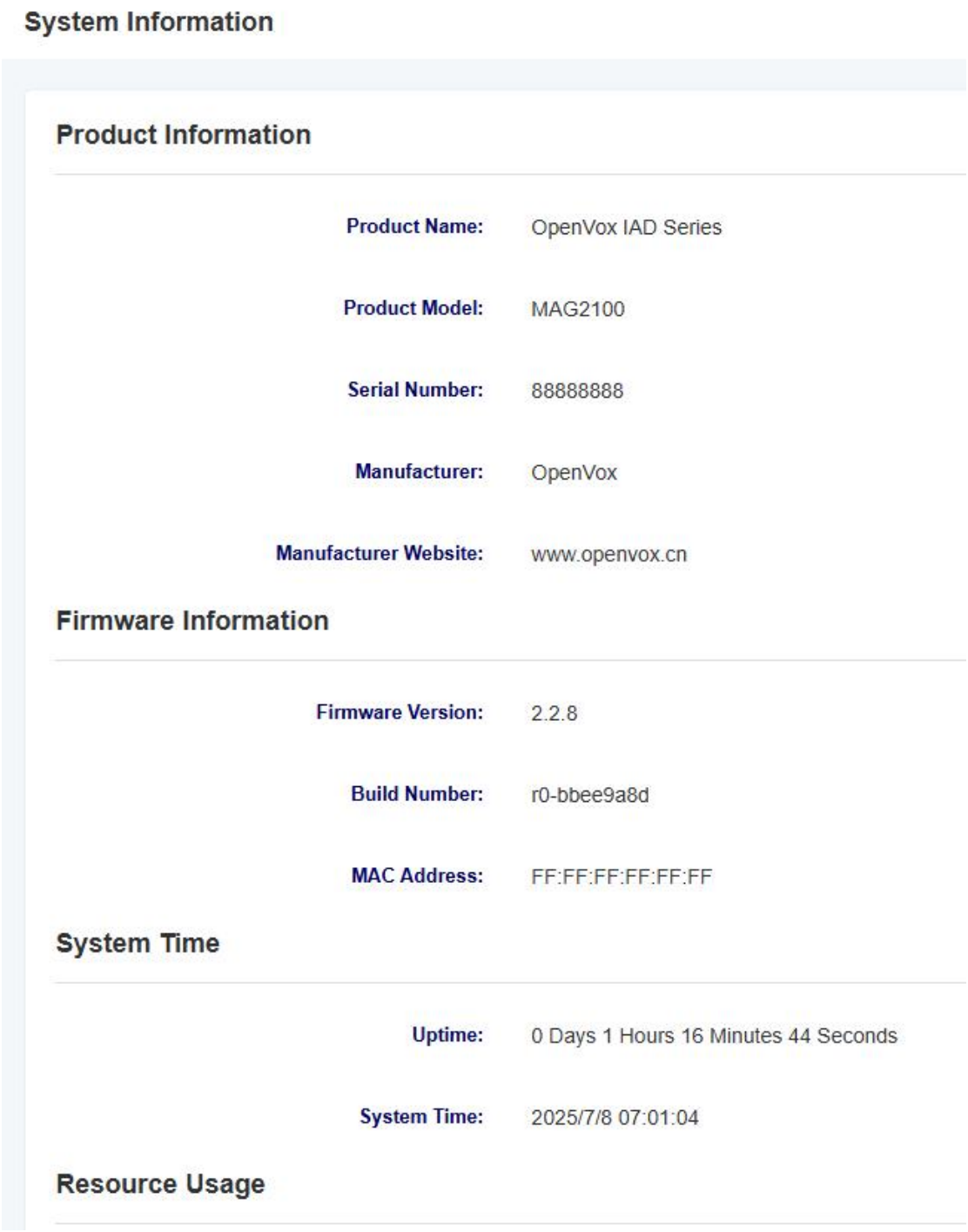

IAD WEB Management System
Username
Password
English
Login

2. Status

2.1 System Information

On the "System Status" page, you will find displayed product information, firmware information, system time, and resource usage.

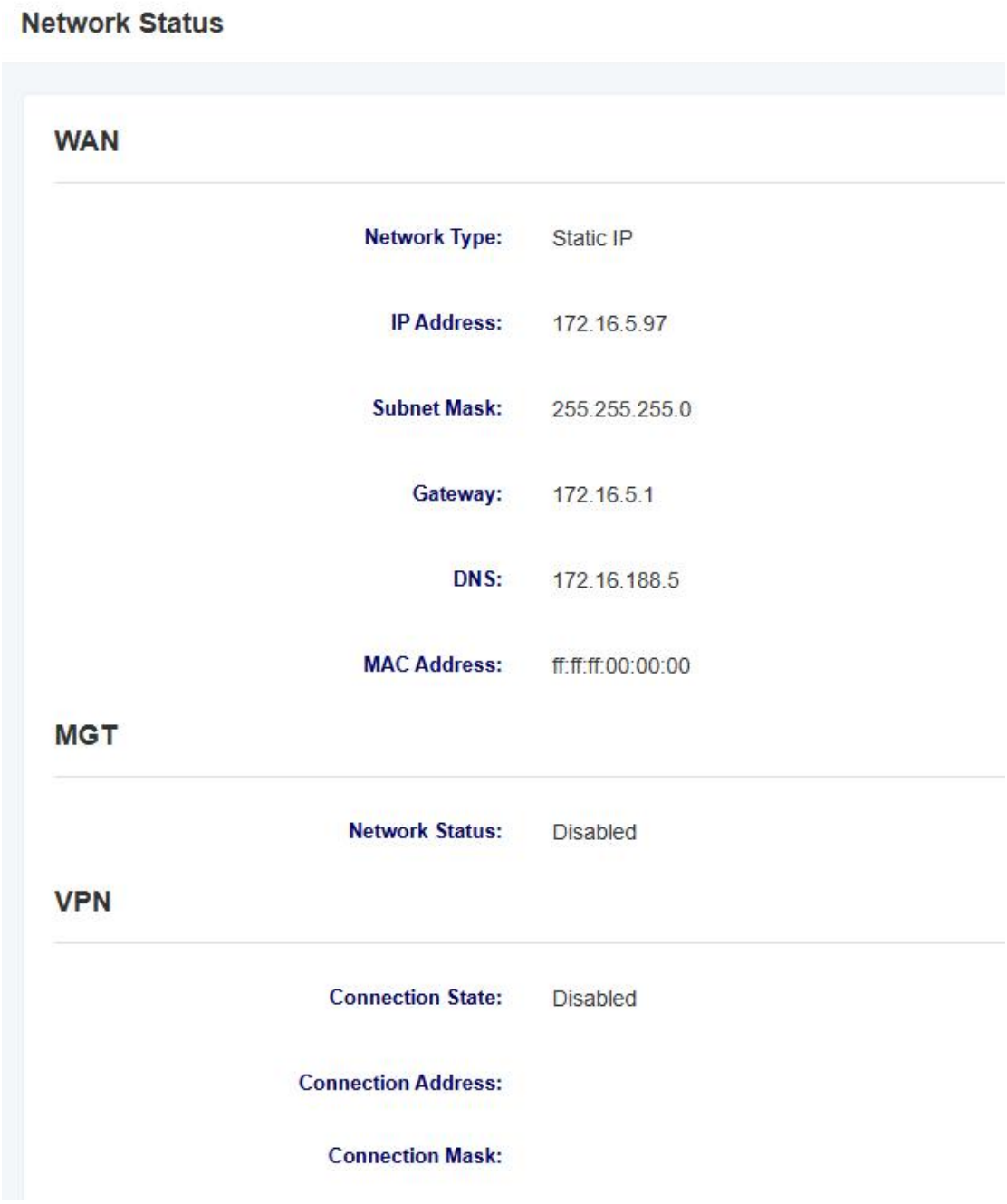
Figure 2-1-1 System Status



2.2 Network Status

On the "Network Status" page, you will find displayed the network status and VPN connection status.

Figure 2-2-1 Network Status



2.3 Interface Board Status

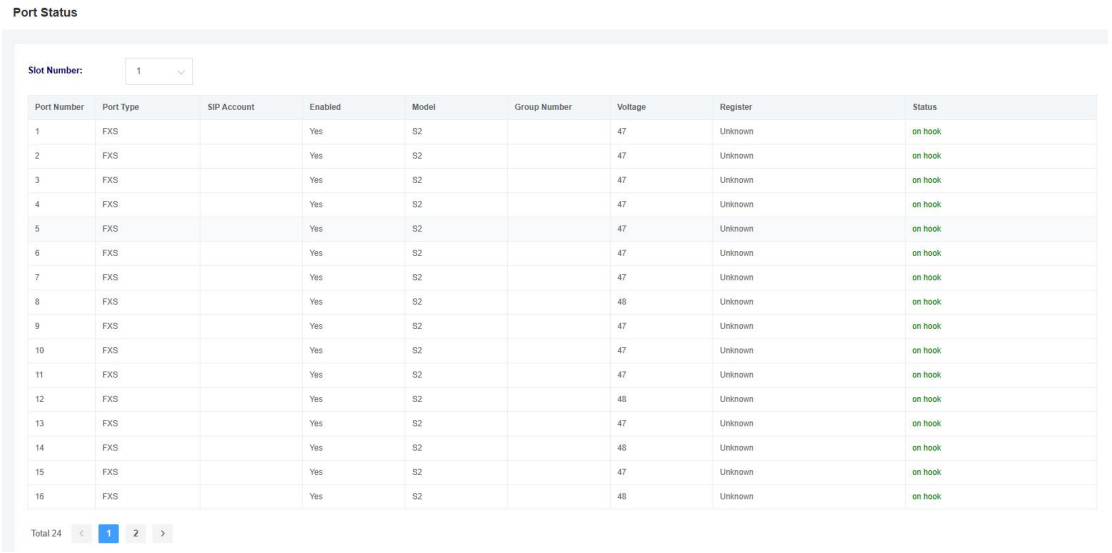
On the "Interface Board Status" page, you will find displayed the interface board model, version, type, running time, and status.

Figure 2-3-1 Interface Board Status

2.4 Port Status

On the "Port Status" page, you will find displayed the port type, enable status, registration status, and on-hook/off-hook status. By clicking the dropdown menu of the slot number, you can switch to different interface boards.

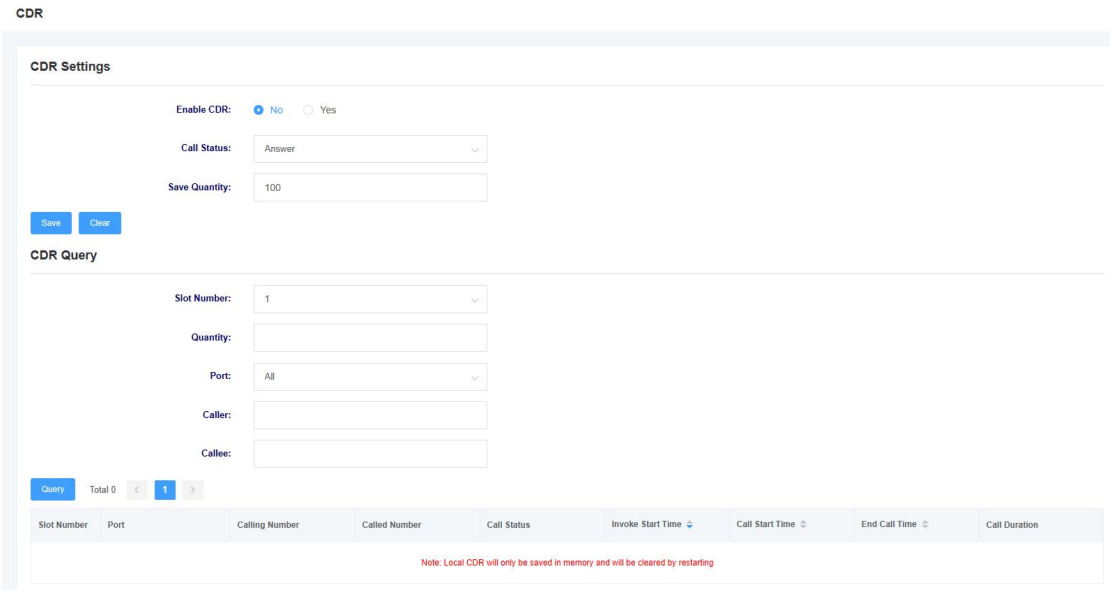
Figure 2-4-1 Port Status



2.5 CDR

On the CDR (Call Detail Record) page, users can configure CDR settings and perform CDR queries.

Figure 2-5-1 CDR



Notice:CDR is only stored in memory and will be cleared upon restart.

Table 2-5-1 CDR Description

Options	Description
Enabling CDR	This option determines whether CDR (Call Detail Record) is enabled or not.
Call Status	Select the call states to be saved in CDR.
Save Quantity	Configure the CDR retention settings.
Slot Number	Select the slot number for CDR queries.
Quantity	Select the number of CDR entries for query.
Ports	Select the port for CDR queries.
Caller	Filter CDR query items by the calling number.
Callee	Filter CDR query items by the called number.

2.6 Call Features Status

On the "Call Feature Status" page, you will find displayed the enabled status of "Do Not Disturb," "Unconditional Transfer," and "Busy Transfer." By clicking the drop down menu of the slot number, you can switch to different interface boards.

Figure 2-6-1 Call Features Status

Call Features Status

Slot Number: 1

Port	Do Not Disturb	Unconditional Transfer	Busy Transfer	Unresponsive Transfer
FXS 1	Disable			
FXS 2	Disable			
FXS 3	Disable			
FXS 4	Disable			
FXS 5	Disable			
FXS 6	Disable			
FXS 7	Disable			
FXS 8	Disable			
FXS 9	Disable			
FXS 10	Disable			
FXS 11	Disable			
FXS 12	Disable			
FXS 13	Disable			
FXS 14	Disable			
FXS 15	Disable			
FXS 16	Disable			
FXS 17	Disable			
FXS 18	Disable			
FXS 19	Disable			
FXS 20	Disable			

3. Network Settings

3.1 Local Network

Figure 3-1-1 Local Network Screen

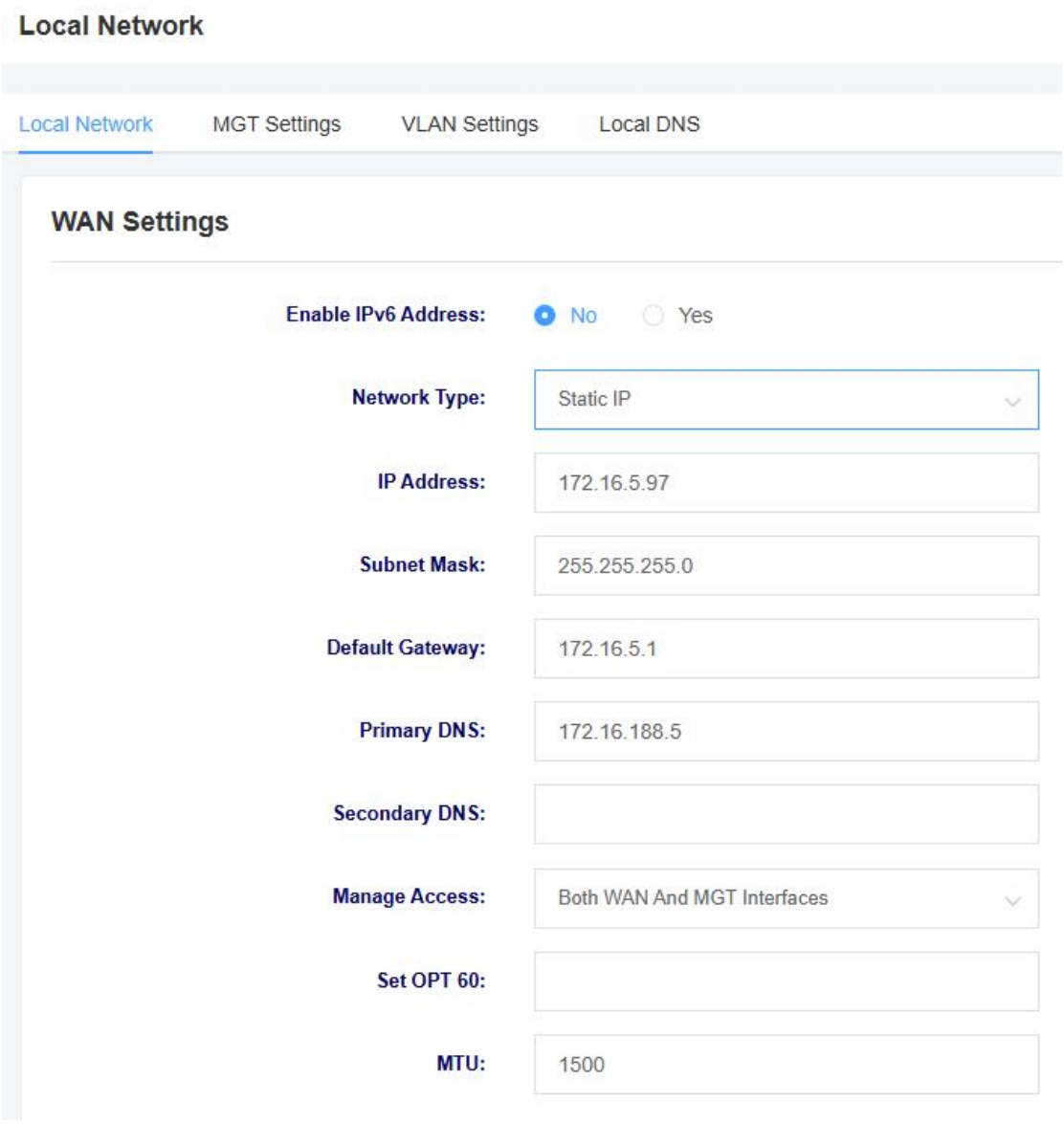


Table 3-1-1 Description of Local Network Interface Parameters

Options	Instructions
Network Type	Select network type: DHCP, Static IP, PPPoE.
IP Address	Setting the IP address of the device.

subnet Mask	Set the subnet mask of the device.
default Gateway	Setting the default gateway of the device.
Primary DNS	Setting the device's primary DNS.
Secondary DNS	Setting the alternate DNS for the device.
Management Access Options	Setting web login restrictions.
Setting OPT 60	Setting OPT 60.
MTU	Set MTU.

Figure 3-1-2 MGT Setting Screen

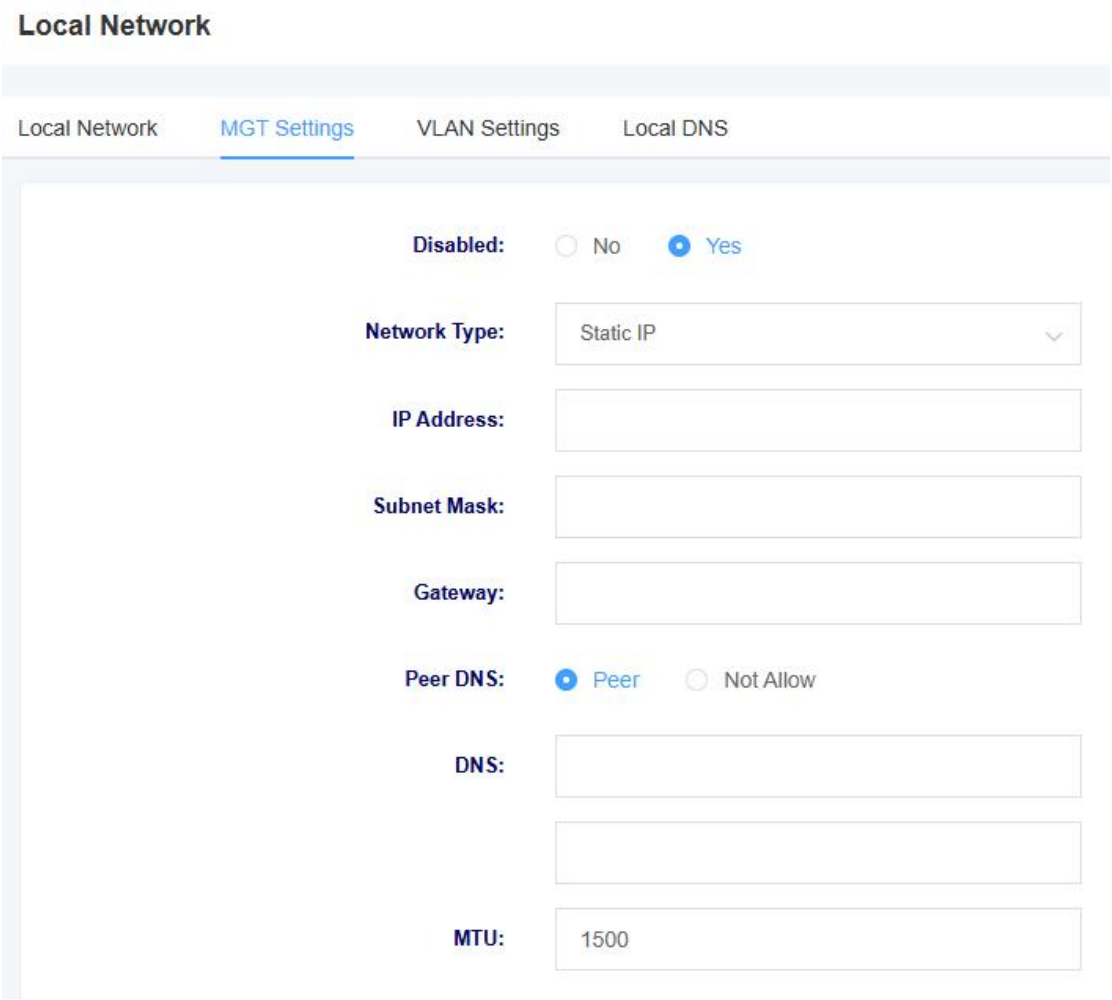


Table 3-1-2 Description of MGT Setting Interface Parameters

Options	Instructions

Network Type	Select network type: DHCP, Static IP, PPPoE.
IP Address	Setting the IP address of the device.
Subnet Mask	Set the subnet mask of the device.
Gateway	Setting the gateway of the device.
Peer DNS	Setting up a DNS Peering Connection.
DNS	Setting the device's DNS.
MTU	Set MTU.

Figure 3-1-3 VLAN Setting Screen

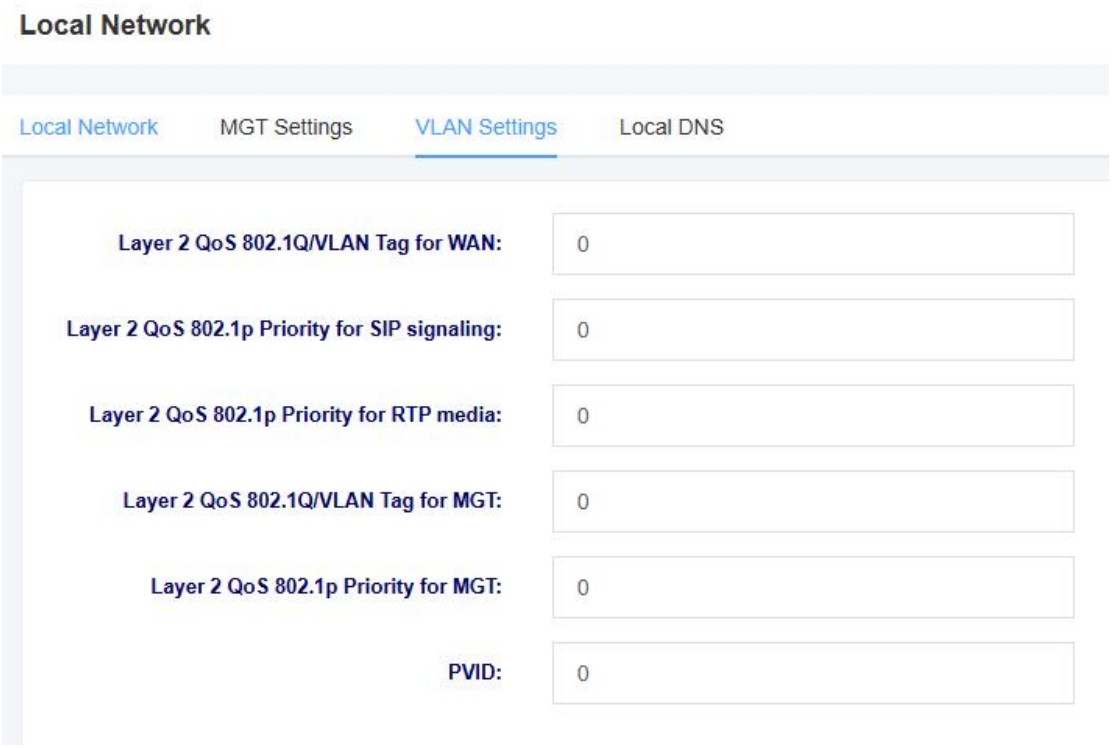


Table 3-1-3 Description of VLAN Setting Interface Parameters

Options	Instructions
Layer 2 QoS 802.1Q/VLAN Tag for WAN	Setting the WAN tag.
Layer 2 QoS 802.1p Priority for SIP signaling	Setting the SIP signaling priority.
Layer 2 QoS 802.1p Priority for RTP media	Settings the RTP media priority.
Layer 2 QoS 802.1Q/VLAN Tag for MGT	Setting the MGT Tag.
Layer 2 QoS 802.1p Priority for MGT	Setting the MGT priority.

Figure 3-1-4 Local DNS Screen

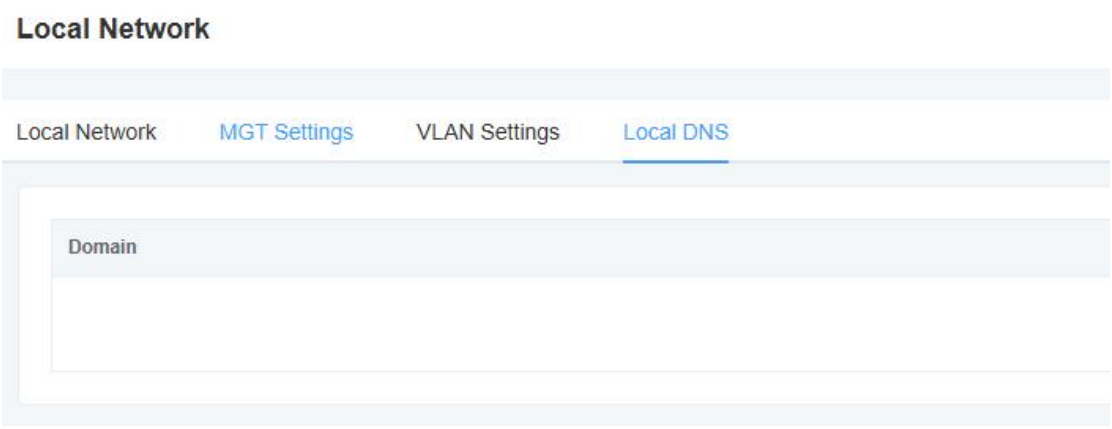


Figure 3-1-5 Add Local DNS Screen

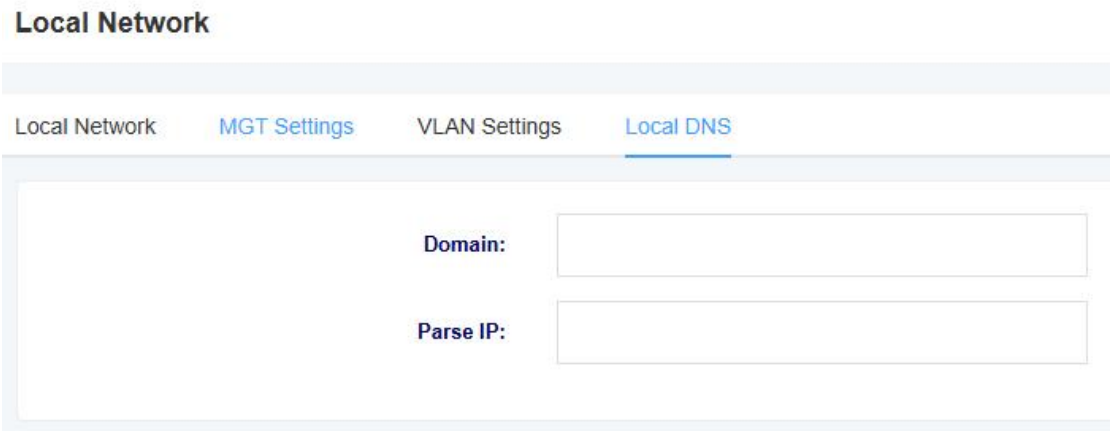


Table 3-1-4 Description of Local DNS Setting Interface Parameters

Options	Instructions
Domain	Settings the Domain.
Parse IP	Set the IP to be resolved.

3.2 Static Routing

The Static Route screen displays the network interface, destination IP address, subnet mask, gateway, number of leaps, and operation of the static route. You can add a static route here. Click the Add button to add a static route.

Figure 3-2-1 Static Routing

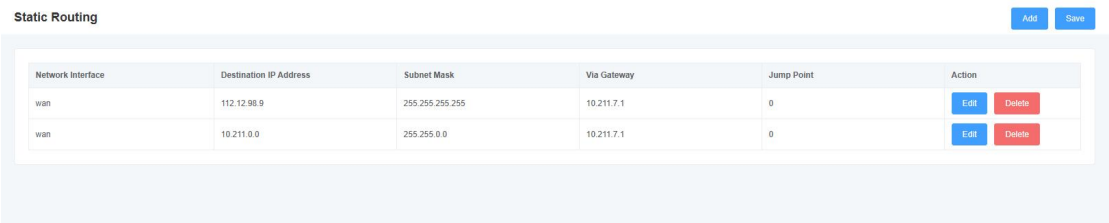
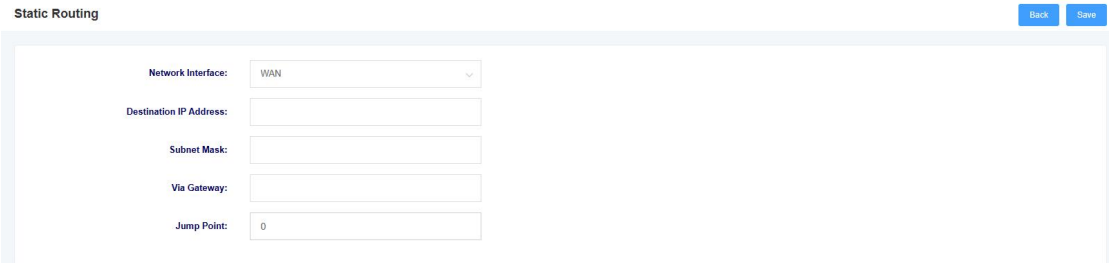


Figure 3-2-2 Add Static Routing Interface



3.3 Firewall

On the "Firewall" page, you will find displayed the names of firewall rules, protocols, source network domain, source IP, source port, destination network domain, destination IP, destination port, and rule action. You can add firewall rules here to ensure device security. Clicking the delete button allows you to remove firewall rules, while clicking the add button allows you to add firewall rules.

Figure 3-3-1 Firewall

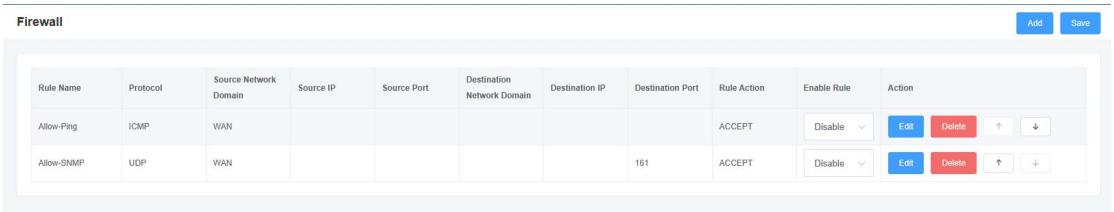


Figure 3-3-2 Firewall add rules

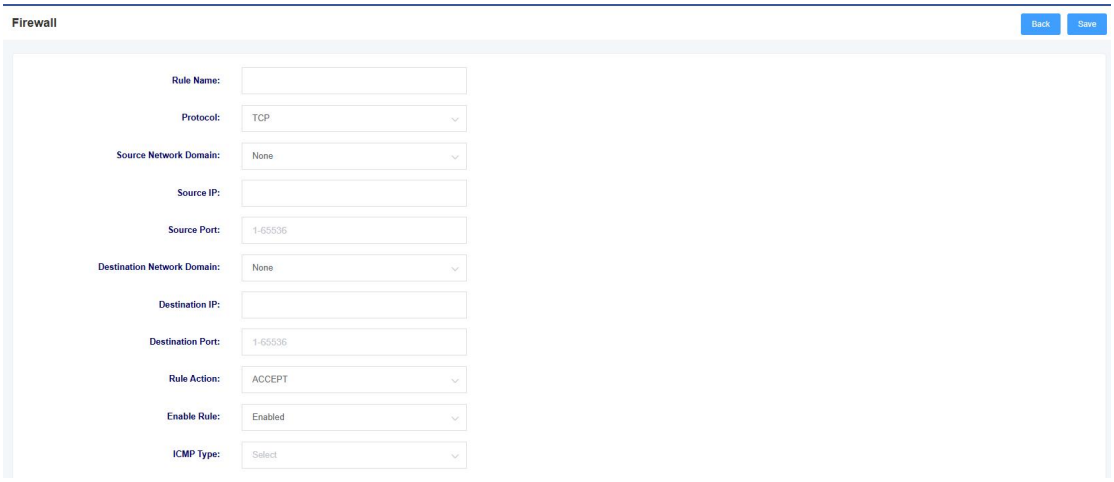


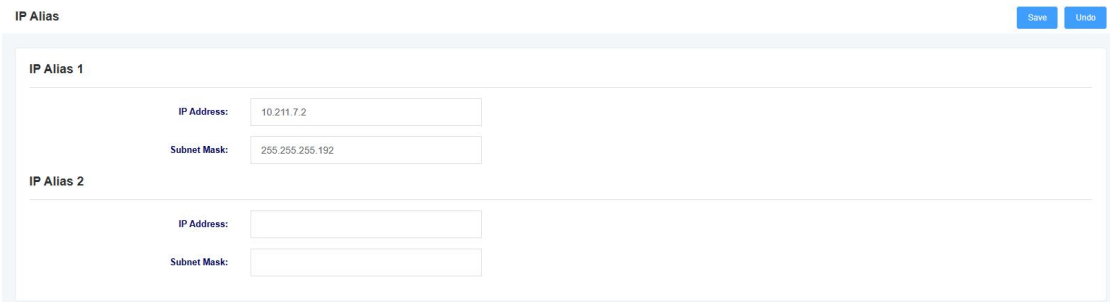
Table 3-3-1 Firewall Description

Options	Description
Name	Name of the firewall rule.
Options	Description
Protocol	Protocol restricted by the firewall rule.
Source Network Domain	Source network domain of the firewall rule.
Source IP	Source IP of the firewall rule.
Source Port	Source Port of the firewall rule,The range is 1-65535.
Destination Network Domain	Destination Network Domain of the firewall rule
Destination IP	Destination IP of the firewall rule.
Destination Port	Destination Port of the firewall rule, The range is 1-65535.
Rule Action	Define the rule action, options include ACCEPT, REJECT, DROP.
ICMP type	Select ICMP type.

3.4 IP Alias

The MAG2100 supports setting multiple IP addresses, which can be configured in the IP Alias interface.

Figure 3-4-1 IP Alias



3.5 VPN Settings

On this interface, you can enable VPN and perform configuration. The MAG2100 currently supports OpenVPN only.

Figure 3-5-1 VPN Settings

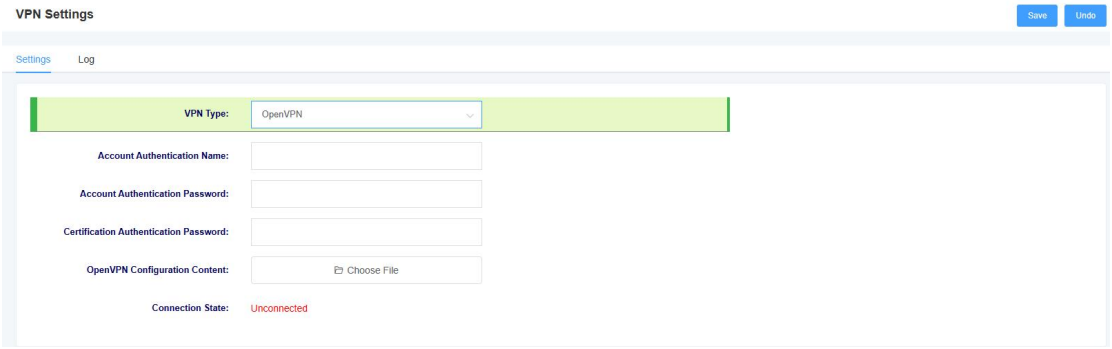
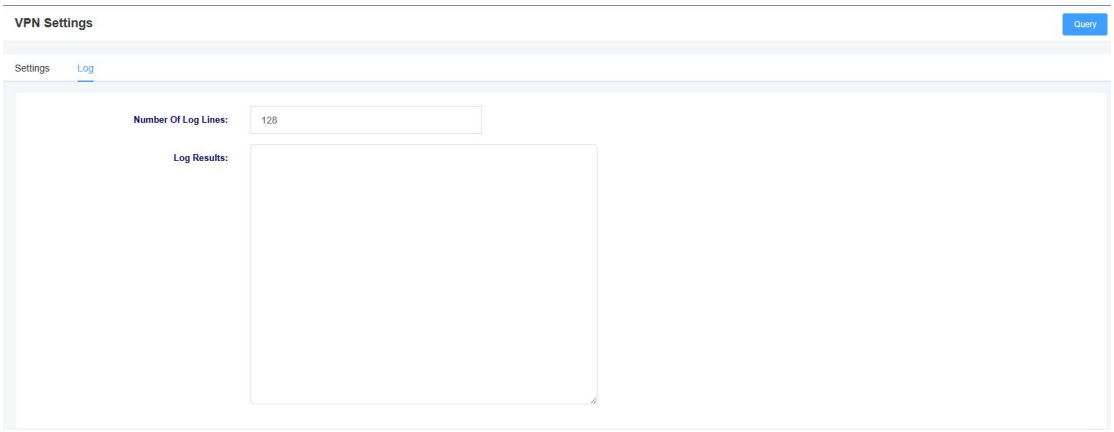


Table 3-5-1 Firewall Description

Options	Description
VPN Type	You can choose to disable VPN or use OpenVPN.
Account Authentication Name	The authentication name used by OpenVPN.
Account Authentication Password	The authentication password used by OpenVPN.
Certification Authentication Password	The Certification authentication password used by OpenVPN.
OpenVPN Configuration Content	Upload the OpenVPN configuration file.
Connection State	Display the VPN connection status.

In the "Log" page, you can select the number of lines to display in the log and then click the "Query" button. The log will be displayed in the "Log Results" box.

Figure 3-5-2 VPN Log



4 Profiles

The MAG2100 provides a convenient SIP registration method where users can apply pre-configured templates to FXS ports. There are four templates available for configuration.

4.1 SIP Settings

Figure 4-1-1 SIP Settings

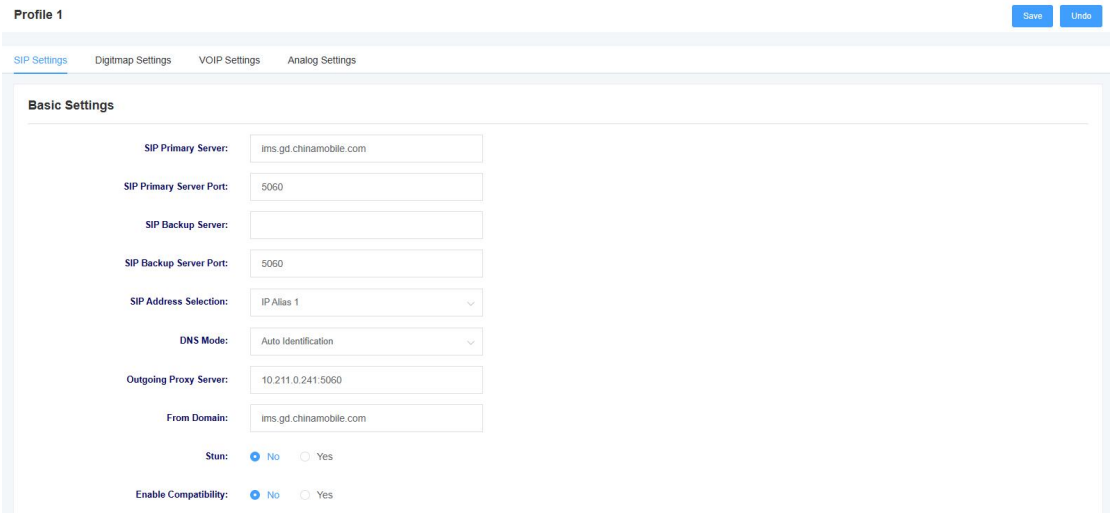


Table 4-1-1 SIP Setting Description

Options	Description
SIP Primary Server	Set the SIP primary server .
SIP Primary Server Port	Set the SIP primary server port.
SIP Backup Server	Set the SIP Backup Server.
SIP Backup Server Port	Set the SIP Backup Server port.
SIP Address Selection	Select which network interface the SIP service will register with.
DNS Mode	Set the DNS mode, which can be either automatic or using DNSSRV.
Outgoing Proxy Server	Set the outbound proxy server. The gateway will send signaling to this external proxy instead of directly sending it to the destination.
From Domain	Set the domain name used to authenticate the remote party.
Stun	Select whether to enable STUN (Session Traversal

	Utilities for NAT) service.
Enable Compatibility	Select whether to enable compatibility.

Figure 4-1-1 SIP Settings

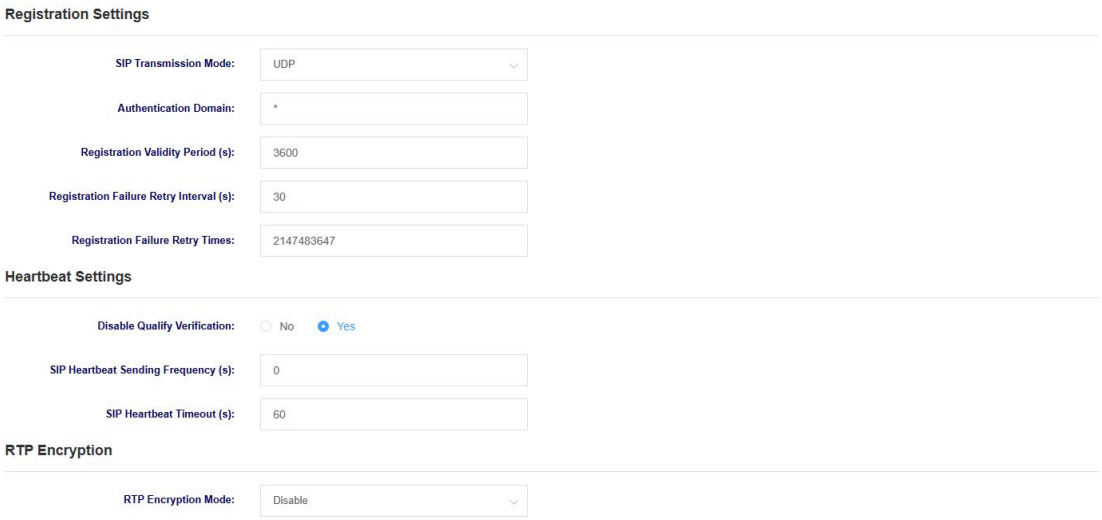


Table 4-1-2 SIP Setting Description

Options	Description
SIP Transmission Mode	Set the SIP transport mode, which can be UDP, TCP, or TLS.
Authentication Domain	Set the SIP registration authentication domain.
Registration Validity Period	Set the registration expiration period with a default value of 3600 seconds.
Registration Failure Retry Interval	Set the retry interval for registration failures with a default value of 30 seconds.
Registration Failure Retry Times	Set the number of retry attempts for registration failures with a default value of 10 attempts.
Disable Qualify Verification	Select whether to enable qualify verification.
SIP Heartbeat Sending Frequency	Set the SIP heartbeat packet sending frequency.
SIP Heartbeat Timeout	Set the SIP heartbeat packet timeout duration.
RTP Encryption Mode	Select whether to enable RTP encryption.

Figure 4-1-3 SIP Setting

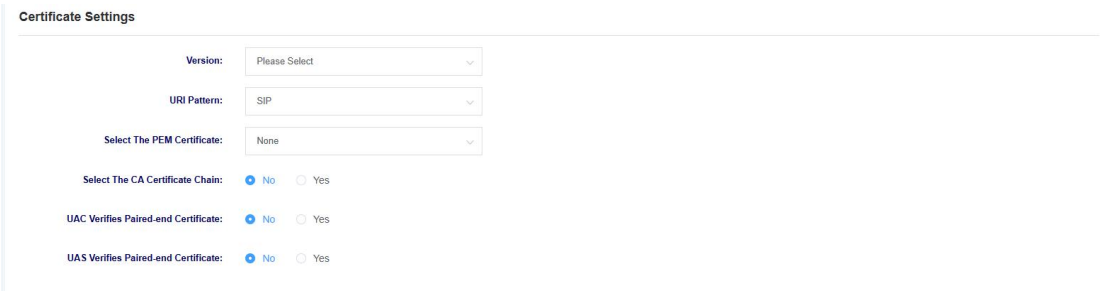


Table 4-1-3 SIP Setting Description

Options	Description
Version	Select the version of the certificate. The device supports different versions of TLS, SSL, and SS certificates.
URI Pattern	Select the URI mode, which supports SIP and SIPS.
Select The PEM Certificate	Select the device's PEM certificate.
Select The CA Certificate Chain	Select whether to enable the CA certificate chain.
UAC Verifies Paired-end Certificate	As the calling party, select UAC (User Agent Client) to use the telephone as the refresh initiator. Alternatively, select UAS (User Agent Server) with the callee or proxy server as the refresh initiator.
UAS Verifies Paired-end Certificate	As the called party, select UAC (User Agent Client) to use the callee or proxy server as the refresh initiator. Alternatively, select UAS (User Agent Server) to use the telephone as the refresh initiator.

4.2 Digitmap Settings

On this page, you can configure dialing rules and settings related to function keys.

Figure 4-2-1 Digitmap Settings

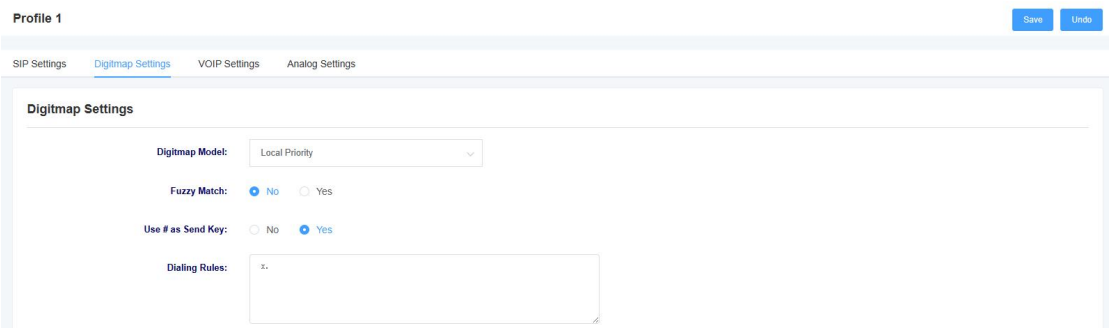


Table 4-2-1 Digitmap Settings Description

Options	Description
Digitmap Priority	Select whether to use local dial plan or remote dial plan. If you are using Openvox IPPBX, you can choose remote dial plan to prioritize the use of IPPBX's dialing rules.
Fuzzy Match	Select whether to enable fuzzy matching.
Use # As Send Key	When enabled, dialing followed by "#" will initiate the call.
Dialing Rules	1. If no numerical plan is configured, the numerical plan of the soft switch server will be used. 2. The valid characters that can be included are: 0-9, x, . 3. X represents any digit from 0 to 9. 4. '.' represents any number of the previous digit (the total number does not exceed 32 bits). 5. '.' can only appear once and only at the end. 6. Configuring an indefinite numerical plan can also achieve quick dialing by dialing the '#' key. 7. Multiple dialing rules can be configured, separated by commas.

Figure 4-2-2 Digitmap Settings

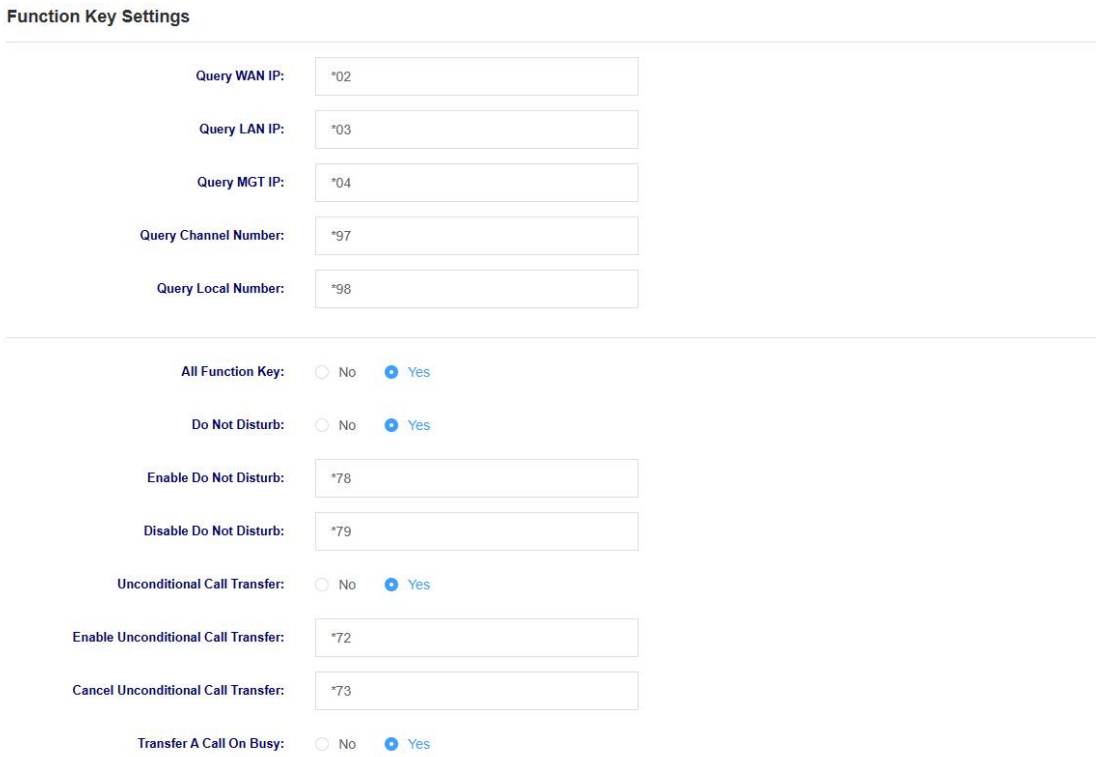


Table 4-2-2 SIP Setting Description

Options	Description
Query WAN IP Address	Configure a function key for querying the WAN IP address. After dialing the function key on the phone, it will play back the device's IP address.
Query LAN IP Address	Configure a function key for querying the LAN IP address. After dialing the function key on the phone, it will play back the device's IP address.
Query MGT IP Address	Configure a function key for querying the MGT IP address. After dialing the function key on the phone, it will play back the device's IP address.
Query Channel Number	Set up a function key for querying the channel number. After dialing the function key on the phone, it will announce the channel number.
Query Local Number	Configure a function key for querying the local phone number. After dialing the function key on the phone, it will play back the local phone number.
All Function Key	Select whether to enable or disable the function key.
Do Not Disturb	Select whether to enable or disable the Do Not Disturb (DND) feature.
Enable Do Not Disturb	Configure a function key to enable the Do Not Disturb (DND) feature. After dialing the function key on the phone, it will activate the Do Not Disturb mode for that extension.
Disable Do Not Disturb	Configure a function key to disable the Do Not Disturb (DND) feature. After dialing the function key on the phone, it will deactivate the Do Not Disturb mode for that extension.
Unconditional Call Transfer	Select whether to enable or disable the unconditional call forwarding feature.
Enable Unconditional Call Transfer	Configure a function key to enable the unconditional call forwarding feature. After dialing the function key on the phone, followed by the extension number for call forwarding, it will activate the unconditional call forwarding for that extension.
Cancel Unconditional Call Transfer	Configure a function key to disable the unconditional call forwarding feature. After dialing the function key on the phone, it will deactivate the unconditional call forwarding for that extension.
Transfer A Call On Busy	Select whether to enable or disable the busy call forwarding feature.
Enable Call Transfer On Busy	Configure a function key to enable the busy call forwarding feature. After dialing the function key on the phone, followed by the extension number for call forwarding, it will activate the busy call forwarding

	for that extension.
Cancel Call Transfer On Busy	Configure a function key to disable the busy call forwarding feature. After dialing the function key on the phone, it will deactivate the busy call forwarding for that extension.
Call Transfer On No Reply	Select whether to enable or disable the no answer call forwarding feature.
Enable Call Transfer On No Reply	Configure a function key to enable the no answer call forwarding feature. After dialing the function key on the phone, followed by the extension number for call forwarding, it will activate the no answer call forwarding for that extension.
Cancel The Call Transfer On No Reply	Configure a function key to disable the no answer call forwarding feature. After dialing the function key on the phone, it will deactivate the no answer call forwarding for that extension.

4.3 VoIP Setting

On this interface, users can configure VOIP-related parameters.

Figure 4-3-1 VoIP Settings

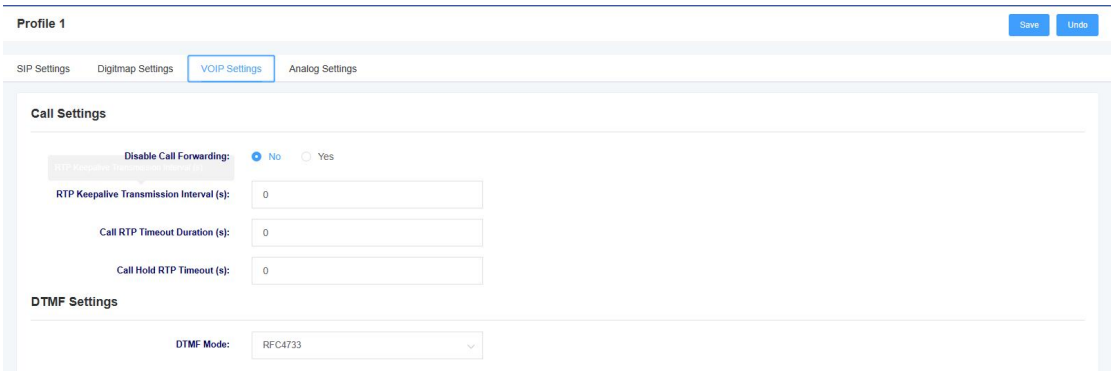


Table 4-3-1 VoIP Setting Description

Options	Description
Disable Call Forwarding	Select whether to disable call forwarding.
RTP Keepalive Transmission Interval	Specify the interval for sending RTP keep-alive packets.
Call RTP Timeout Duration	Set the timeout duration for RTP during a call.
Call Hold RTP Timeout	Set the timeout duration for RTP during call

	hold.
DTMF Mode	Configure the DTMF mode. The available options are RFC4733, inband, info, auto, and auto_info.

Figure 4-3-1 VoIP Settings

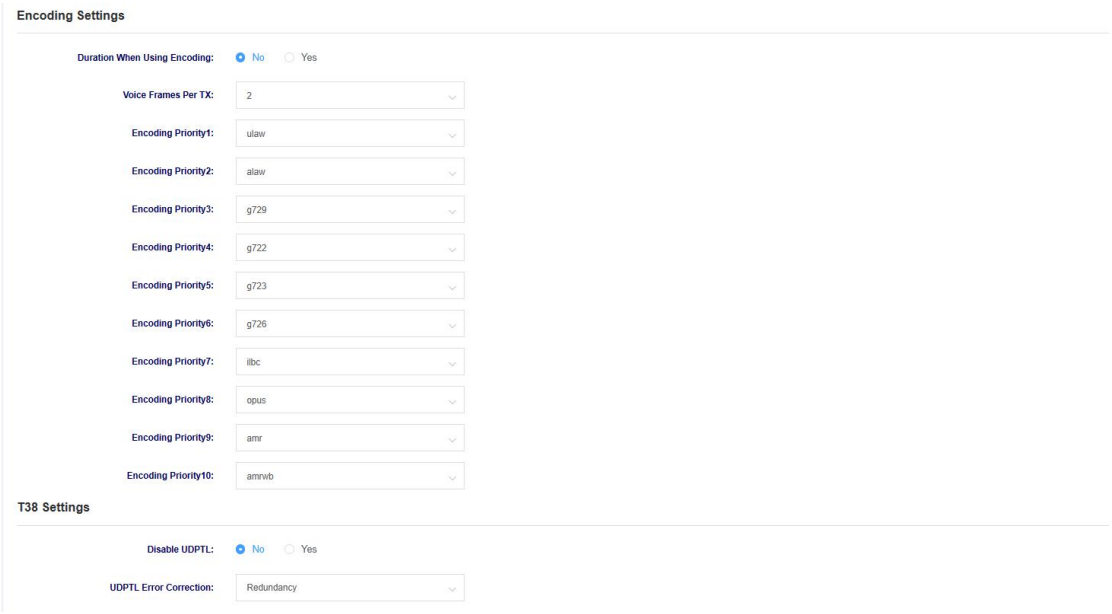


Table 4-3-1 VoIP Setting Description

Options	Description
Duration When Using Encoding	Select whether to use packetization to optimize bandwidth and resource utilization during transmission, storage, and processing.
Voice Frames Per TX	Configure the number of voice frames transmitted per packet.
Encoding Priority	Set the priority of the encoding.
Disable UDPTL	Select whether to disable UDPTL (UDP-based Real-time Transport Protocol for Telephony) functionality.
UDPTL Error Correction	Select the error correction method for UDPTL.

4.4 Analog Settings

Figure 4-4-1 Analog Settings

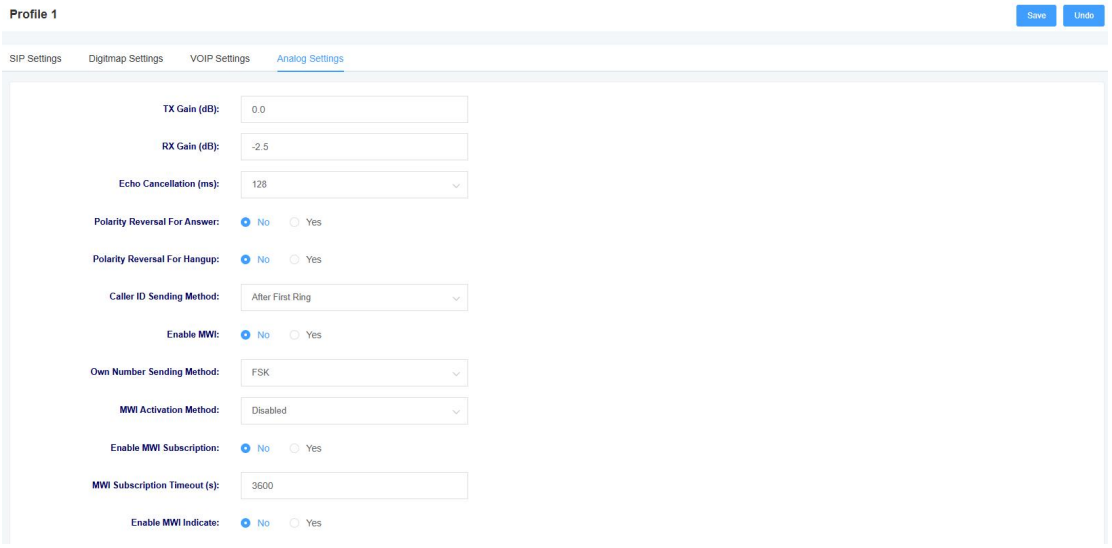


Table 4-4-1 Analog Settings Description

Options	Description
TX Gain	Specify the audio gain for transmission.
RX Gain	Specify the audio gain for received sound.
Echo Cancellation	Select whether to enable echo cancellation functionality.
Polarity Reversal For Answer	Select whether to enable polarity reversal to indicate answer.
Polarity Reversal For Hangup	Select whether to enable polarity reversal to indicate hang-up.
Caller ID Sending Method	Select the method of sending the caller ID.
Enable MWI	Select whether to enable MWI.
Own Number Sending Method	Select own number sending method.
MWI Activation Method	Select MWI activation method.
Enable MWI Subscription	Select whether to enable MWI subscription.
MWI Subscription Timeout	Set MWI subscription timeout.
Enable MWI Indicate	Select whether to enable MWI indicate.

5. FXS Port settings

On this page, you can configure settings for the FXS (Foreign Exchange Station) port.

Users can use the slot number menu to switch between different module boards for configuration.

5.1 Basic Setting

Figure 5-1-1 Basic Setting

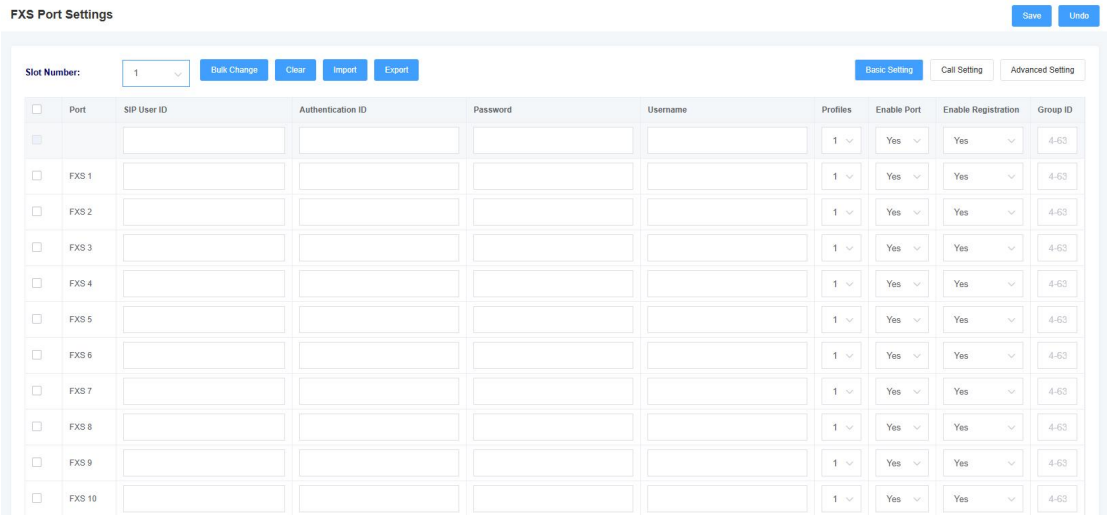


Table 5-1-1 Basic Setting Description

Options	Description
SIP User ID	Configure the SIP user associated with the FXS port.
Authentication ID	Set the authentication ID corresponding to the SIP user ID.
Password	Set the password corresponding to the authentication ID.
Username	Set the caller display name.
Templates	Select the template to be used.
Enable Port	Select whether to enable the port.
Enable	Select whether to enable registration.

Registration	
Group ID	Set group ID.

5.2 Call Setting

Figure 5-2-1 Call Setting

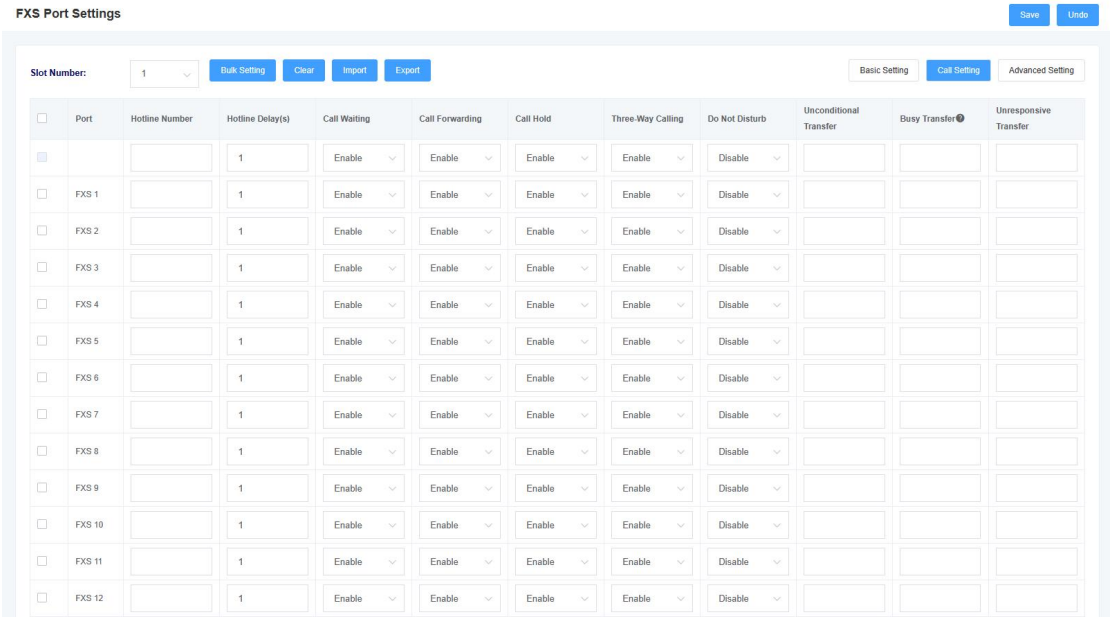


Table 5-2-1 Call Setting Description

Options	Description
Hotline Number	Configure the hotline number for the port. If no number is dialed within the hotline delay time after lifting the handset, the hotline number will be automatically dialed.
Hotline Delay	Set the hotline delay time.
Call Waiting	Select whether to enable call waiting.
Flash ATT Transfer	Select whether to enable flash ATT transfer.
Call Hold	Select whether to enable Call Hold.
Three-way Calling	Select whether to enable Three-way Calling.
Do Not Disturb	Select whether to enable Do Not Disturb.
Unconditional Transfer	Set the unconditional call forwarding number.
Busy Transfer	Set the Busy Transfer number.
Unresponsive Transfer	Set the Unresponsive Transfer number.

5.3 Advanced Setting

Figure 5-3-1 Advanced Setting

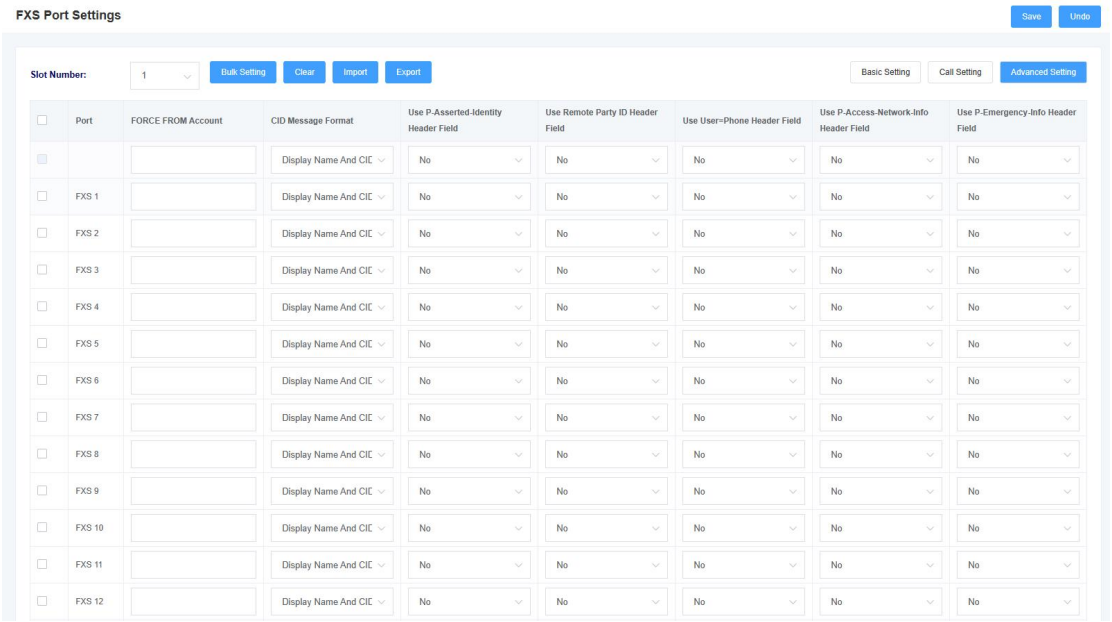


Table 5-3-1 Advanced Setting Description

Options	Description
FORCE FROM Account	Set the FROM forced user.
CID Message Format	Select whether to display name and CID.
Use P-Asserted-Identity Header Field	Include "P-Preferred-Identity" in the INVITE message header to indicate the user identity in anonymous calls.
Use Remote Party ID Header Field	Use the Remote-Party-ID header field to obtain the Caller ID (CID).
Use User=Phone Header Field	Include "user=phone" in the URI to indicate that the called number is extracted from the username when making outgoing calls to the PSTN network.
Use P-Accesd-Network-Info Header Field	Use the P-Access-Network-Info header field to obtain the Caller ID (CID).
Use P-Emergency-Info Header Field	The P-Emergency-Info header field is not typically used to obtain Caller ID (CID) information.

6. Advanced Configuration

6.1 Fax Parameters

On this page, you can configure parameters related to fax.

Figure 6-1-1 Fax Parameters

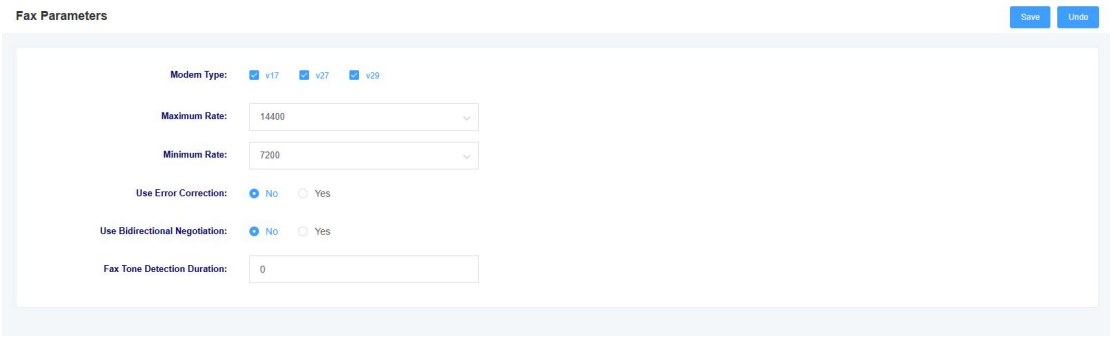


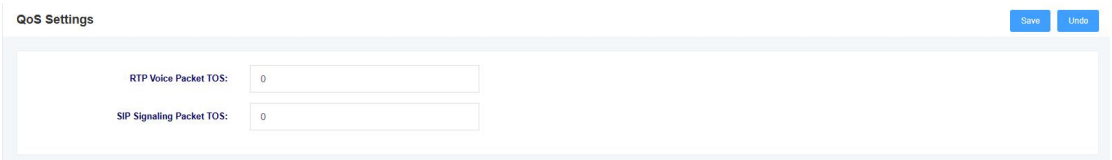
Table 6-1-1 Fax Parameters Description

Options	Description
Modem Type	Set the supported modem types.
Maximum Rate	Select the maximum supported fax rate.
Minimum Rate	Select the minimum supported fax rate.
Use Error Correction	Select whether to enable error checking.
Use Bidirectional Negotiation	Select whether to enable bidirectional negotiation.
Fax Tone Detection Duration	Set the duration for fax tone detection.

6.2 Qos Settings

On this interface, you can configure the TOS (Type of Service) for RTP voice packets and SIP signaling packets.

Figure 6-2-1 Qos Setting



6.3 Analog Settings

On this interface, you can configure parameters related to analog lines, such as echo cancellation and jitter buffer.

Figure 6-3-1 Analog Settings

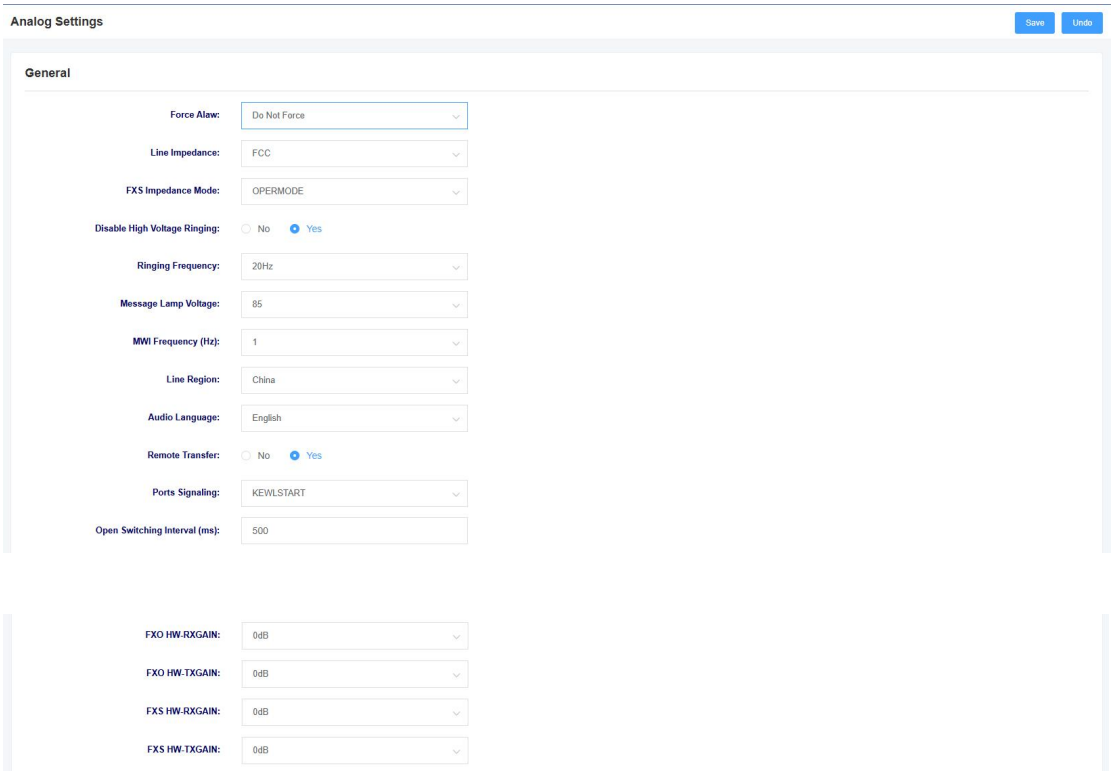


Table 6-3-1 Analog Settings Description

Options	Instructions
Force Alaw	Select whether or not to enable this option, enabling it will force alaw
Line Impedance	Selection of line impedance
FXS Impedance Mode	Select FXS impedance mode
Disable High Voltage Ringing	Select whether to enable high voltage ringing
Ringing Frequency	Select ringing frequency
Message Lamp Voltage	Select message lamp voltage
MWI Frequency	Select MWI frequency
Line Region	Select the area where the line is located
Audio Language	Select the language for voice prompts
Remote Transfer	Select whether to enable remote transfer

Ports Signaling	Select ports signaling
Open Switching Interval	Set switching interval
FXO HW-Rxgain	Select FXO Rxgain
FXO HW-Txgain	Select FXO Txgain
FXS HW-Rxgain	Select FXS Rxgain
FXS HW-Rxgain	Select FXS Txgain

Figure 6-3-2 Analog Settings

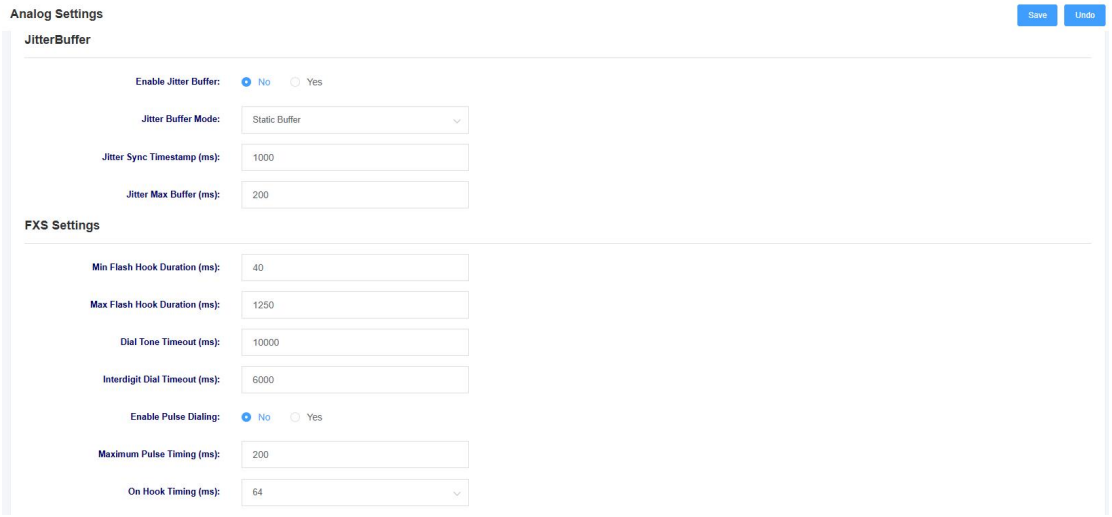
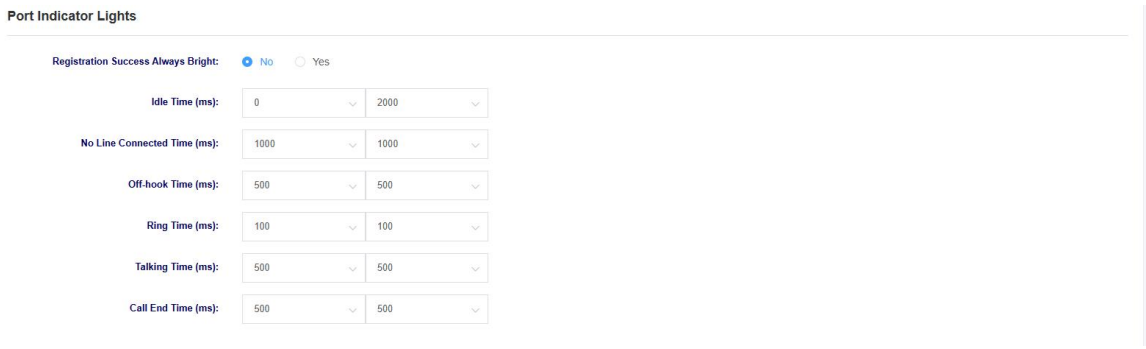


Table 6-3-2 Analog Settings Description

Options	Description
Enable Jitter Buffer	Select whether to enable jitter buffer.
Jitter Buffer Mode	Select the jitter buffer mode.
Jitter Sync Timestamp	Set the jitter sync timestamp.
Jitter Max Buffer	Set the maximum jitter buffer size.
Min Flash Hook Duration	Set the minimum inter-digit interval duration.
Max Flash Hook Duration	Set the maximum inter-digit interval duration.
Dial Tone Timeout	Set the timeout duration for first-digit dialing.
Interdigit Dial Timeout	Set the timeout duration for inter-digit dialing.
Enable Pulse Dialing	Select whether to enable Pulse Dialing.
Maximum Pulse Timing	Setting the maximum pulse duration
On Hook Timing	Setting the maximum hang time

Figure 6-3-3 Analog Settings



6.4 VOIP Settings

On this page, you can perform VoIP-related settings such as call settings and session settings.

Figure 6-4-1 VoIP Setting

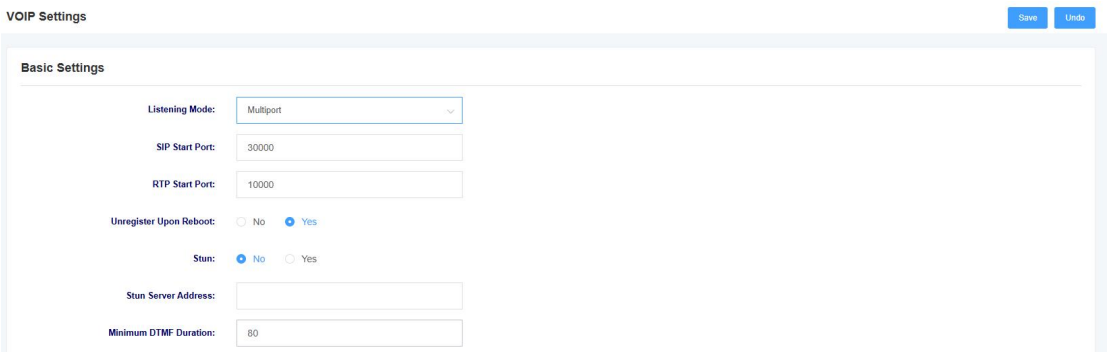


Figure 6-4-1 VoIP Setting Description

Options	Description
Listening Mode	Select the monitoring mode. You have the option to choose between multi-port and single-port.
Sip Start Port	Set the starting port for SIP.
Rtp Start Port	Set the starting port for RTP.
Unregister Upon Reboot	Select whether to log out of registration when restarting.
Stun	Select whether to enable STUN.
Stun Server Address	Set the STUN server address.
Minimum DTMF Duration	Set minimum DTMF duration.

Figure 6-4-2 VoIP Setting

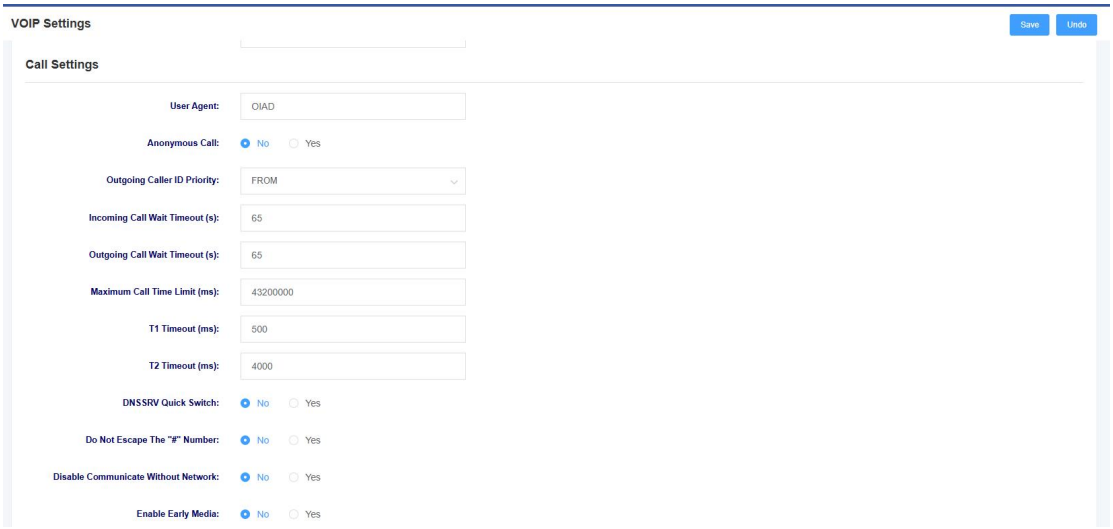


Figure 6-4-2 VoIP Setting Description

Options	Description
User Agent	Set the User Agent.
Anonymous Call	Select whether to allow anonymous incoming calls.
Outgoing Caller ID Priority	Select whether the caller ID should be prioritized to display from the FROM field or the P-Asserted-Identity field.
Incoming Call Wait Timeout	Set the timeout duration for call waiting.
Outgoing Call Wait Timeout	Set the timeout duration for call waiting
Maximum Call Time Limit	Set the maximum call duration limit. If the call exceeds this limit, it will be disconnected.
T1 Timeout	Set the T1 timeout duration.
T2 Timeout	Set the T2 timeout duration.
DNSSRV Quick Switch	Select whether to enable quick switch.
Do Not Escape The # Number	Select whether to enable escape #.
Disable Communicate Without Network	Select whether to enable communicate without network.
Enable Early Media	Select whether to enable Early Media.

Figure 6-4-3 VoIP Setting

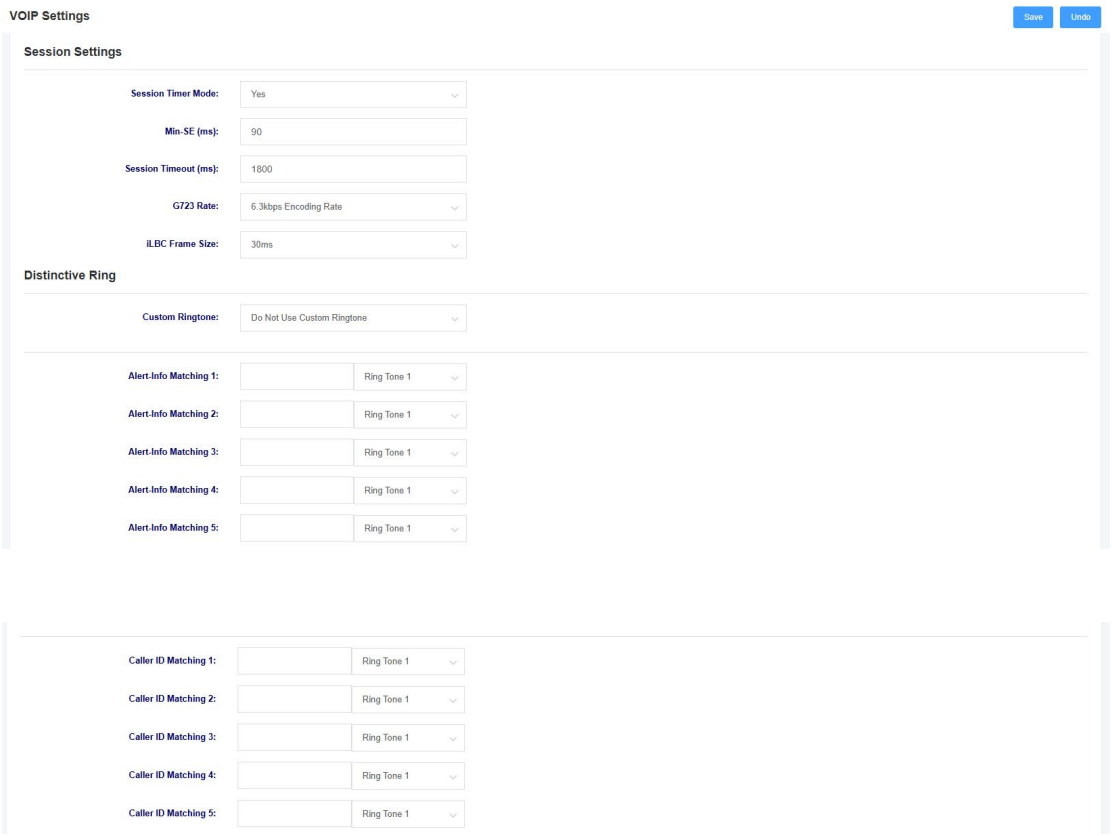
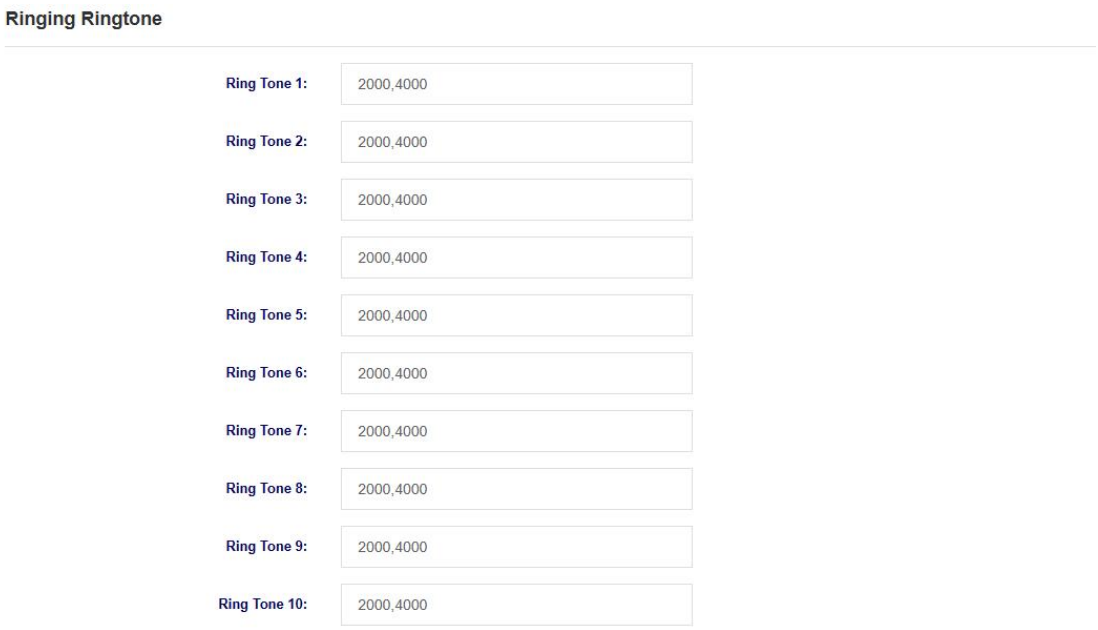


Table 6-4-3 VoIP Setting Description

Options	Description
Session Timer Mode	Select the session timer mode.
Min-SE	Set the minimum session timeout duration.
Session Timeout	Set the session timeout duration.
G723 Rate	Setting the encoding rate
iLBC Frame Size	Setting the iLBC frame size
Distinctive Ring	Set different ring tones for different scenarios.

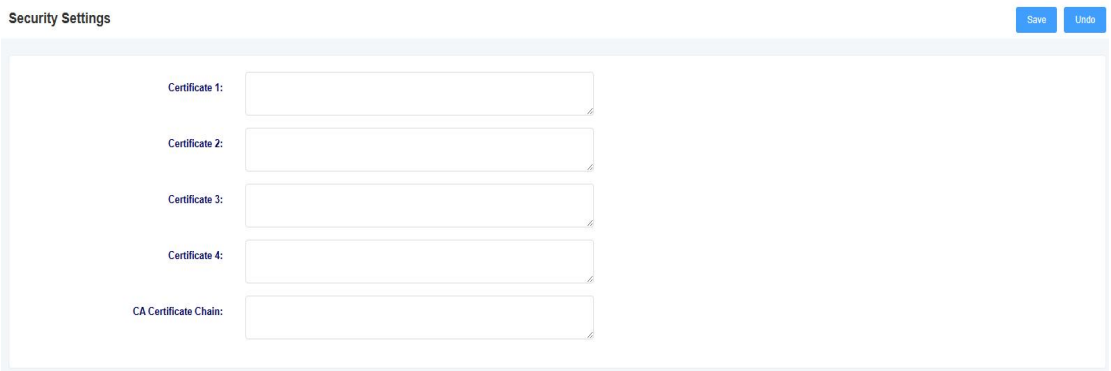
Figure 6-4-4 VoIP Setting



6.5 Security Settings

On this page, you can upload certificates.

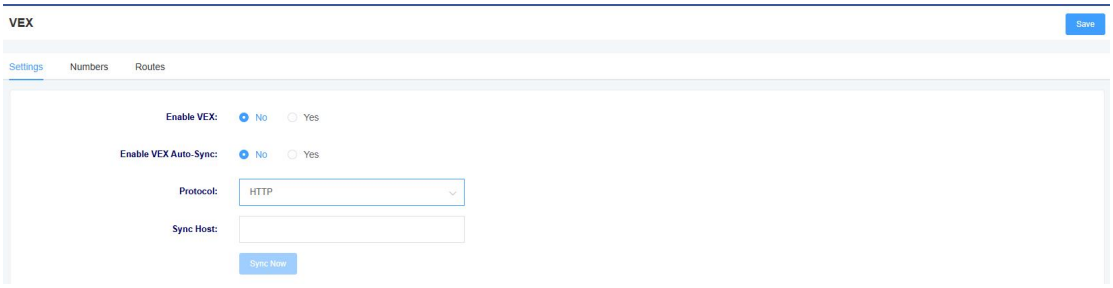
Figure 6-5-1 Security Settings



6.6 VEX

On this page, you can set vex.

Figure 6-6-1 VEX


VEX
Save
Settings
Numbers
Routes
Enable VEX:
No
Yes
Enable VEX Auto-Sync:
No
Yes
Protocol:
HTTP
Sync Host:
Sync Now

7 Maintenance

7.1 Automatic Restart

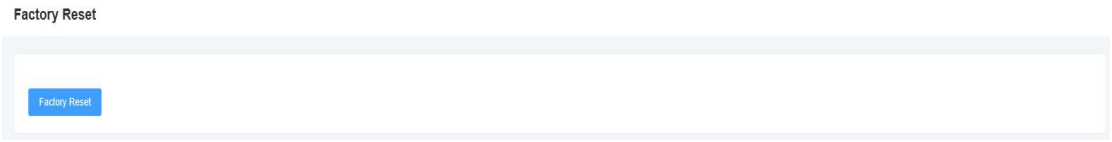
In this page, you can configure the automatic reboot function. The device can be scheduled to restart based on the set time.

Figure 7-1-1 Automatic Restart

7.2 Factory Reset

After clicking the "Factory Reset" button, the device will automatically restart and restore to its factory settings.

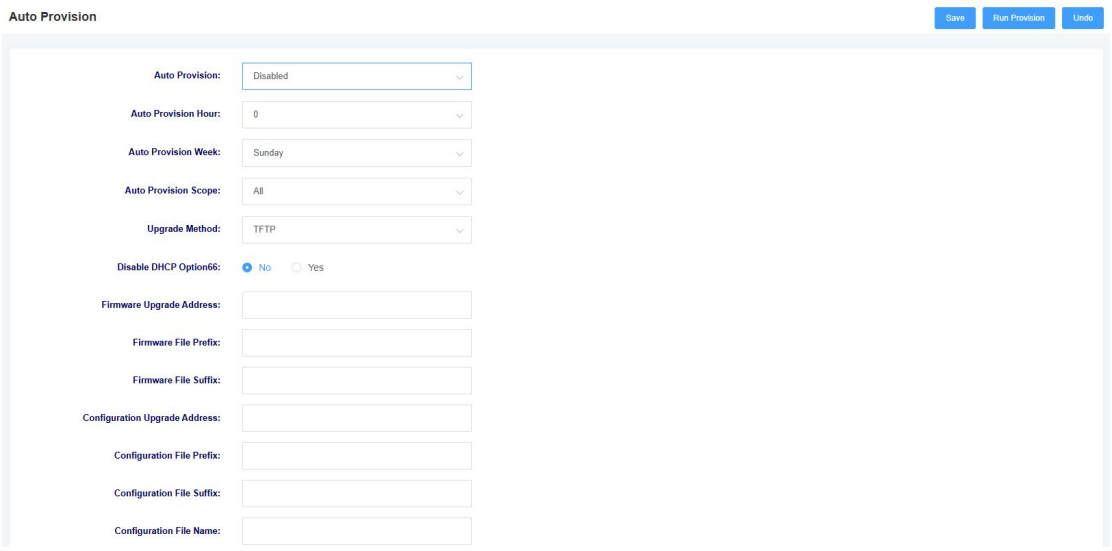
Figure 7-2-1 Factory Reset



7.3 Auto Provision

MAG2100 supports automatic deployment of configuration files and upgrade files. You can configure these settings on this page for the device to automatically download and apply configuration files as well as perform firmware upgrades.

Figure 7-3-1 Auto Provision



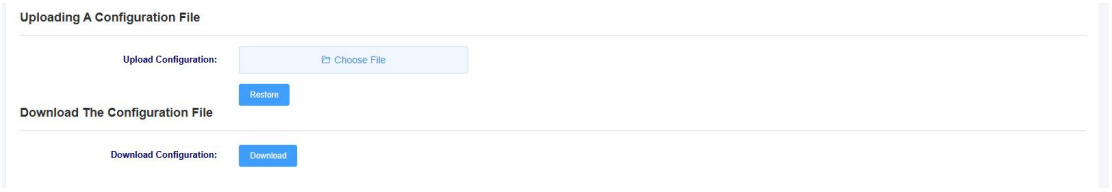


Table 7-3-1 Auto Provision Description

Option	Description
Auto Provision	Set the mechanism for automatic deployment, where you can choose between deploying automatically every time the device powers on or deploying based on a set time interval.
Auto Provision Hour	Select the auto provision according to uptime.
Auto Provision Week	Select the auto provision according to day.
Auto Provision Scope	Select the scope of automatic deployment, which includes the option to deploy configuration files and firmware upgrades.
Upgrade Method	Select the automatic deployment upgrade method, which supports TFTP, HTTP, and HTTPS.
Disable DHCP Option66	Select whether to enable DHCP option 66 for file retrieval.
Firmware Upgrade Address	Set the path for firmware upgrades.
Firmware File Prefix	Set the prefix for firmware files.
Firmware File	Set the suffix for firmware files.

Suffix	
Configuration Upgrade Address	Set the path for configuration file upgrades.
Configuration File Prefix	Set the prefix for configuration files.
Configuration File Suffix	Set the suffix for configuration files.
Upload Configuration	Upload Configuration
Download Configuration	Download Configuration

The file names should be modified according to the following rules:

For main control firmware files: (pre)(firmware model).img(post)

For interface board firmware files: (pre)ixu(mac).img(post)

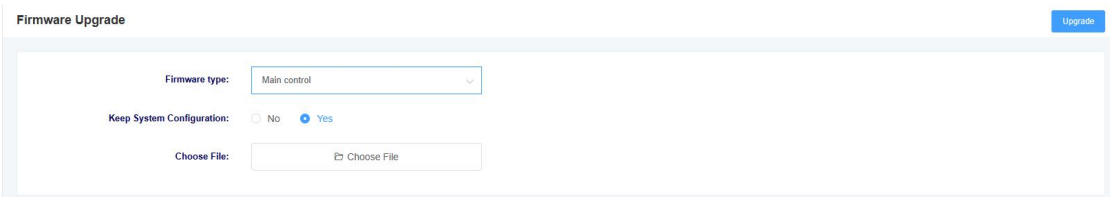
For configuration files: (pre)cfg(mac)(post)

"pre" refers to the prefix, and "post" refers to the suffix. Both the prefix and suffix can be left empty if desired.

7.4 Firmware Upgrade

On this page, you can perform firmware upgrades. Select the appropriate firmware type, then upload the corresponding file to initiate the upgrade process. You can choose whether to preserve the system configuration. If you choose not to preserve the system configuration, it will be cleared after the upgrade.

Figure 7-4-1 Firmware Upgrade



7.5 Time Settings

On this page, you can configure the device's time settings. Users can set the time zone and specify the NTP server address for automatic time synchronization.

Figure 7-5-1 Time Settings

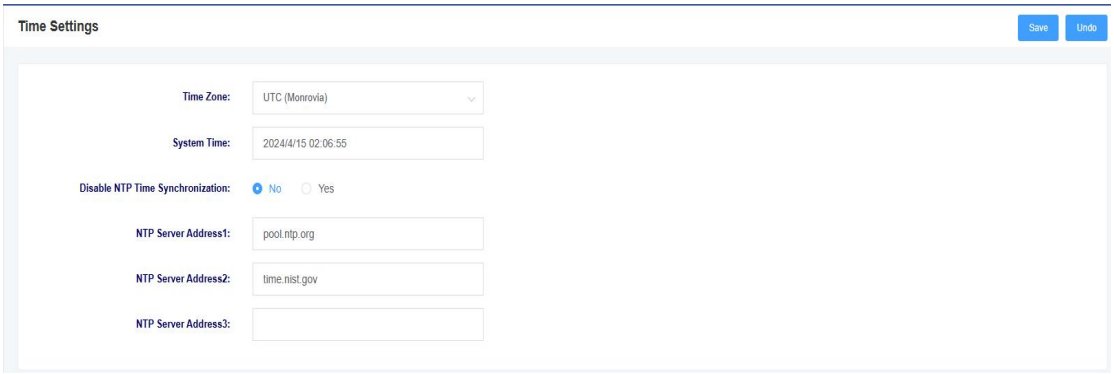


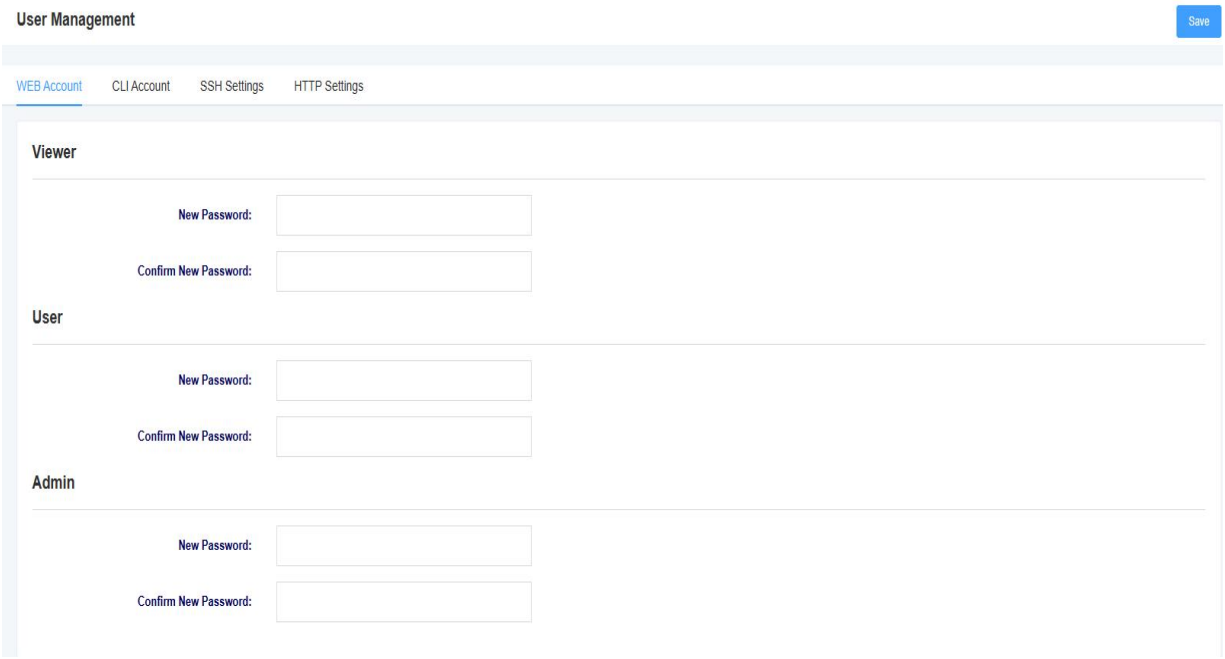
Table 7-5-1 Time Settings Description

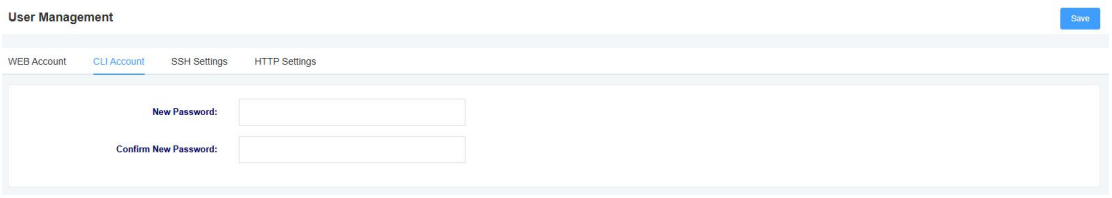
Option	Description
Time Zone	Set the time zone for the device.
System Time	Display the system time
Enable NTP Time Synchronization	Select whether to enable NTP time synchronization.
NTP Server Address	Set the NTP server address.

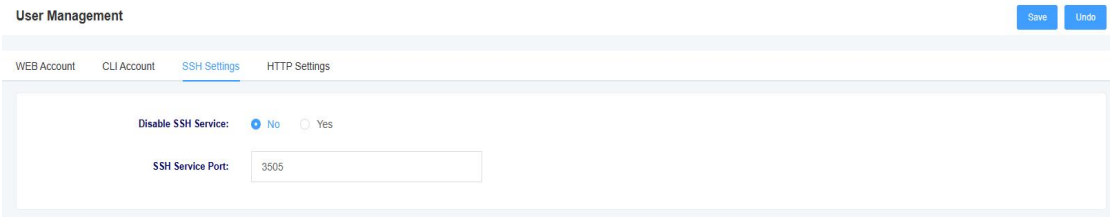
7.6 User Management

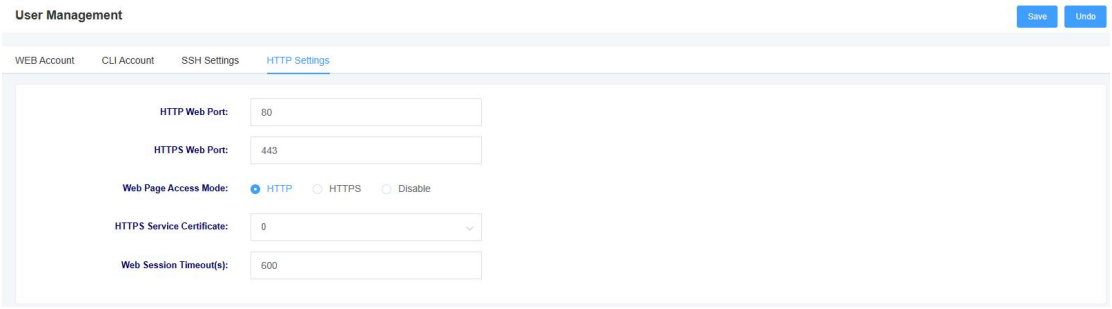
MAG2100 supports different user roles for login, each with different permissions. On the User Management page, you can modify passwords, enable/disable SSH functionality, and configure HTTP settings for different user roles.

Figure 7-6-1 User Management





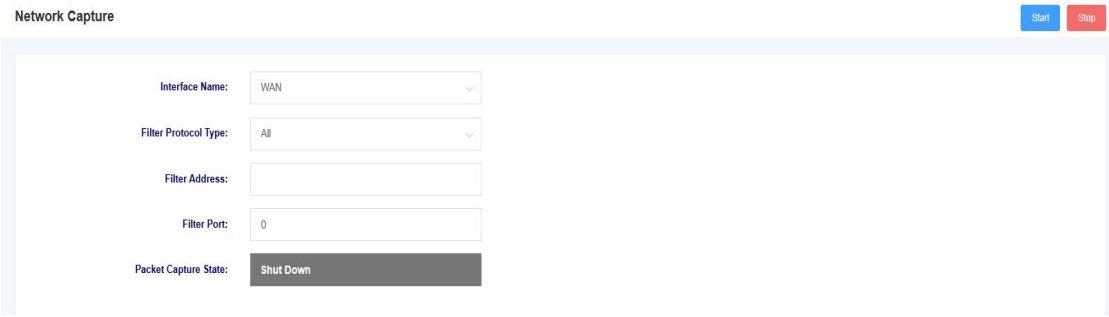




7.7 Network Capture

MAG2100 supports network packet capture functionality for easier troubleshooting of network issues. Users can define the capture interface, select the protocol type, address, and port in this interface.

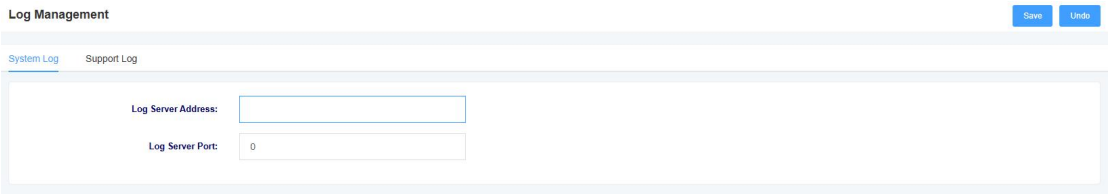
Figure 7-7-1 Network Capture



7.8 Log Management

In the log management interface, you can configure the address and port of the log server, as well as select the kernel log level for easy viewing and technical analysis of device logs.

Figure 7-8-1 Log Management



Syslog, also known as system log or system record, is a standard used to transmit log messages in the Internet Protocol Suite (TCP/IP) network. The term "syslog" is commonly used to refer to the actual syslog protocol or applications and databases that send syslog messages. The syslog protocol operates in a client-server model, where the syslog sender sends a small text message (less than 1024 bytes) to a syslog receiver. The receiver is typically called "syslogd," "syslog daemon," or syslog server. System log messages can be sent over UDP, TCP, or both protocols.

Here is an overview of syslog levels:

EMERG: Critical system failure

ALERT: Immediate action required

CRIT: Critical condition that needs to be addressed promptly

ERROR: Error conditions that prevent tools or subsystems from functioning correctly

WARNING: Warning messages indicating potential issues

NOTICE: Important but normal conditions

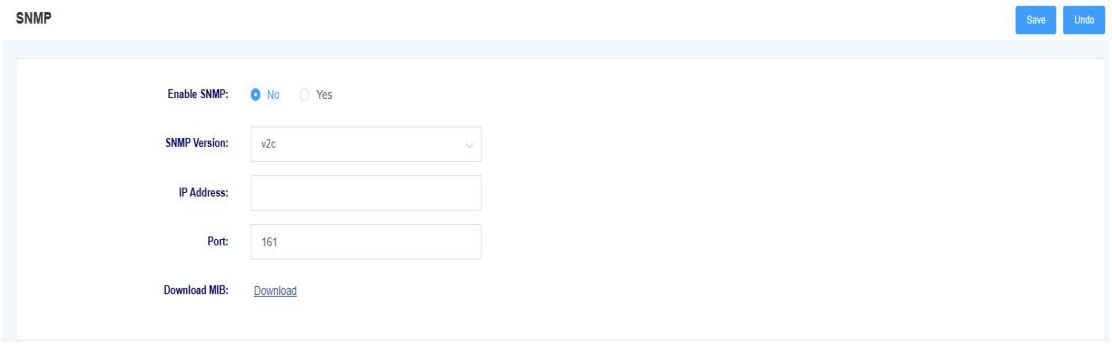
INFO: Informational messages

DEBUG: Additional information not related to errors or problems with functions

7.9 SNMP

In this page, you can configure the SNMP service-related information. MAG2100 supports SNMPv1 and v2c.

Figure 7-9-1 SNMP



7.10 Cloud Management

On this page, you can configure the relevant information for cloud management. MAG2100 supports Openvox's cloud management functionality. By entering the server address, port, and binding code, you can manage the device through the cloud management platform.

Figure 7-10-1 Cloud Management

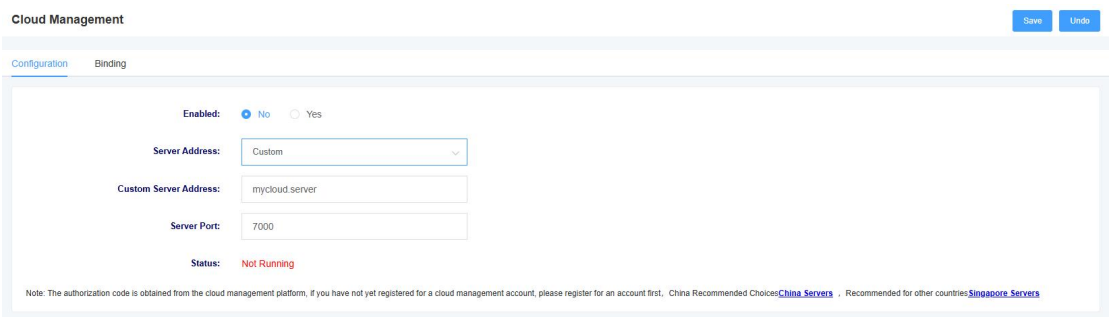
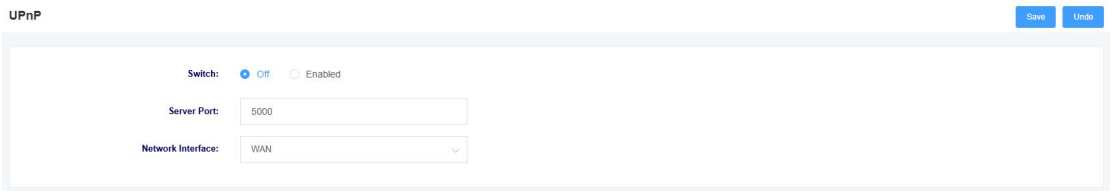


Figure 7-10-2 Binding

7.11 UPnP

On this page, you can configure UPnP

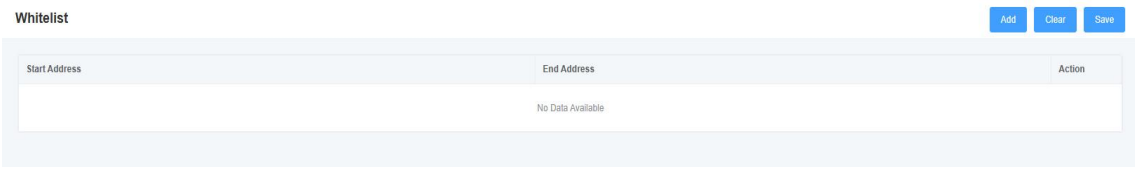
Figure 7-11-1 UPnP



7.12 Whitelist

On this page, you can configure the relevant information for the whitelist. After setting it up, only the IP addresses listed in the whitelist will be able to access the device.

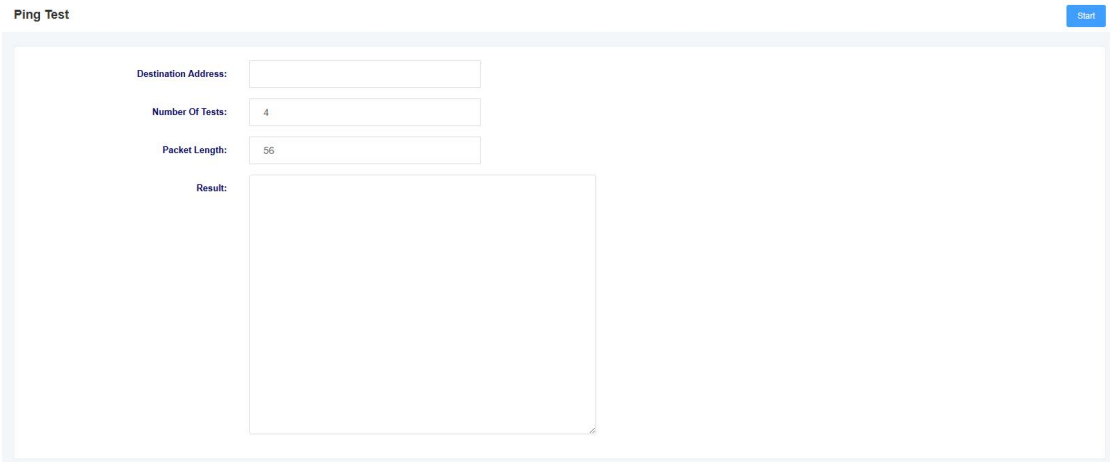
Figure 7-12-1 Whitelist



7.13 Ping Test

On this page, you can use the ping command to test network connectivity.

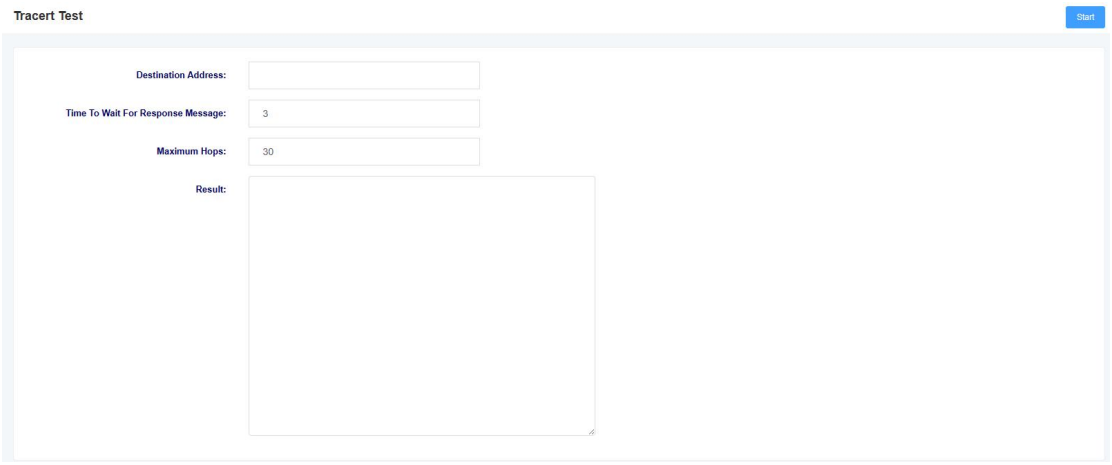
Figure 7-13-1 Ping Test



7.14 Tracert Test

On this page, you can use the tracert command to test network connectivity.

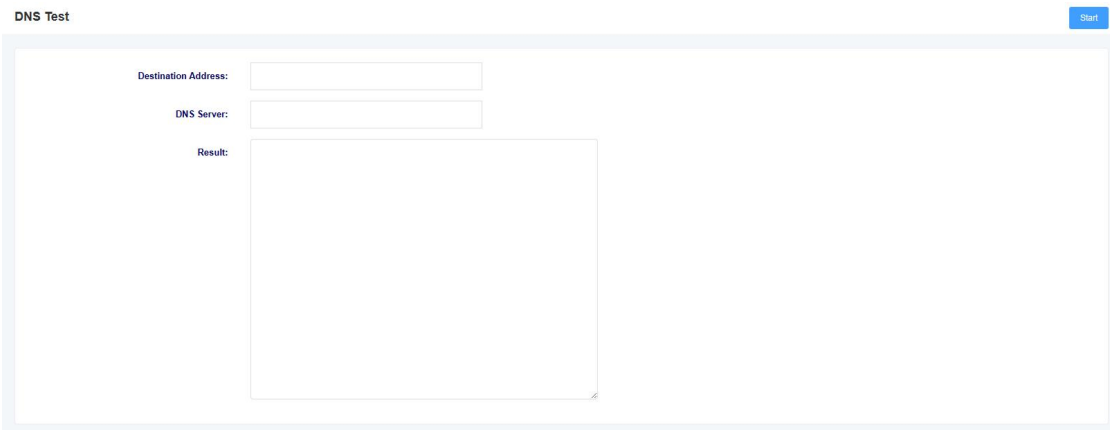
Figure 7-14-1 Tracert



7.15 DNS test

On this page, you can perform DNS testing for specified DNS servers.

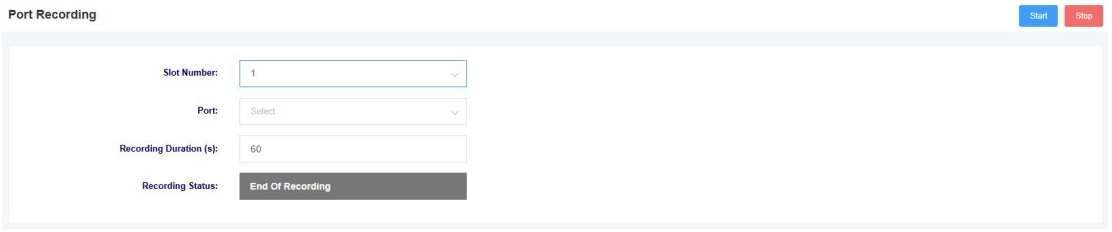
Figure 7-15-1 DNS Test



7.16 Port Recording

On this page, you can select specific ports for recording purposes to troubleshoot issues.

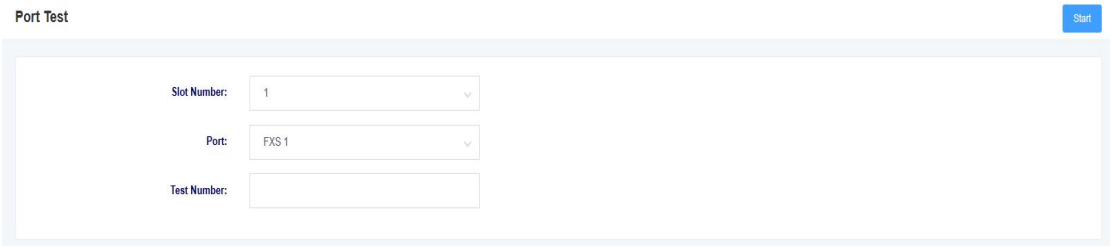
Figure 7-16-1 Port Recording



7.17 Port Test

On this page, you can quickly check if the port is normal.

Figure 7-17-1 Port Test



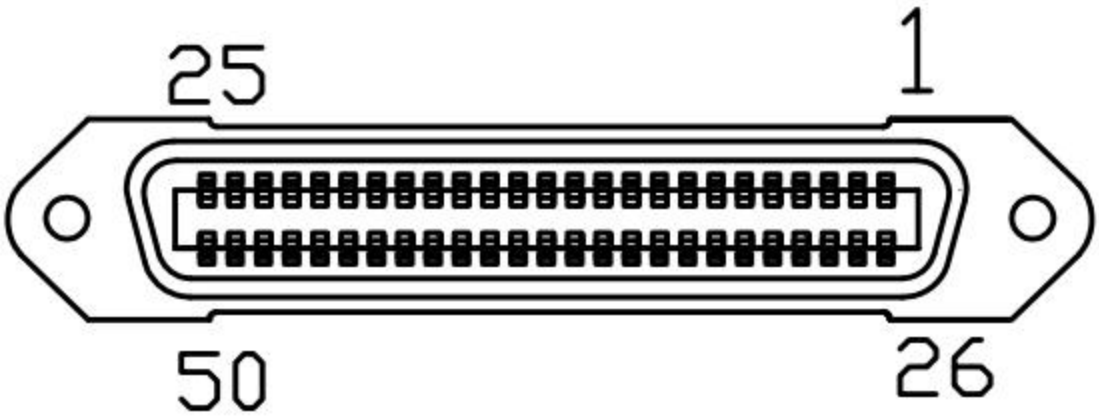
Terminology

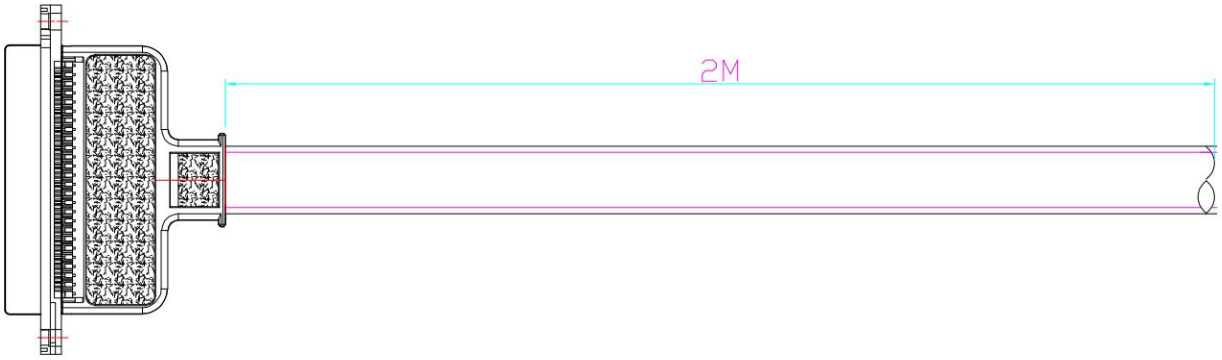
- DNS: Domain Name System

- SIP: Session Initiation Protocol
- TCP: Transmission Control Protocol
- UDP: User Datagram Protocol
- RTP: Real-Time Transport Protocol
- PPPOE: Point-to-Point Protocol over Ethernet
- VLAN: Virtual Local Area Network
- ARP: Address Resolution Protocol
- CID: Caller Identity
- DND: Do Not Disturb
- DTMF: Dual Tone Multi-Frequency
- NTP: Network Time Protocol
- STUN: Simple Traversal of UDP over NAT
- PSTN: Public Switched Telephone Network

Appendix

RJ21 Cable instruction





Color	Tip	Ring	Color	Channel
Blue	49	1	White	Port 1
Orange	48	2	White	Port 2
Green	47	3	White	Port 3
Brown	46	4	White	Port 4
Gray	45	5	White	Port 5
Blue	43	6	Red	Port 6
Orange	42	7	Red	Port 7
Green	41	8	Red	Port 8
Brown	40	9	Red	Port 9
Gray	39	10	Red	Port 10
Blue	38	11	Black	Port 11
Color	Tip	Ring	Color	Channel
Orange	37	12	Black	Port 12
Green	36	13	Black	Port 13
Brown	35	14	Black	Port 14
Gray	34	15	Black	Port 15
Blue	33	16	Yellow	Port 16
Orange	32	17	Yellow	Port 17
Green	31	18	Yellow	Port 18
Brown	30	19	Yellow	Port 19
Gray	29	20	Yellow	Port 20

Blue	28	21	Purple	Port 21
Orange	27	22	Purple	Port 22
Green	26	23	Purple	Port 23
Brown	25	24	Purple	Port 24