Common Configuration

User's Manual

V1.0.0

Foreword

This manual introduces the common configuration of intercom devices. Read carefully before using the device, and keep the manual safe for future reference.

Safety Instructions

The following signal words might appear in the manual.

Signal Words	Meaning
⚠ DANGER	Indicates a high potential hazard which, if not avoided, will result in death or serious injury.
⚠ WARNING	Indicates a medium or low potential hazard which, if not avoided, could result in slight or moderate injury.
⚠ CAUTION	Indicates a potential risk which, if not avoided, could result in property damage, data loss, reductions in performance, or unpredictable results.
🔑	Provides methods to help you solve a problem or save time.
📖 NOTE	Provides additional information as a supplement to the text.

Revision History

Version	Revision Content	Release Time
V1.0.0	First release.	January 2023

Privacy Protection Notice

As the device user or data controller, you might collect the personal data of others such as their face, fingerprints, and license plate number. You need to be in compliance with your local privacy protection laws and regulations to protect the legitimate rights and interests of other people by implementing measures which include but are not limited: Providing clear and visible identification to inform people of the existence of the surveillance area and provide required contact information.

About the Manual

- The manual is for reference only. Slight differences might be found between the manual and the product.
- We are not liable for losses incurred due to operating the product in ways that are not in compliance with the manual.
- The manual will be updated according to the latest laws and regulations of related jurisdictions. For detailed information, see the paper user's manual, use our CD-ROM, scan the QR code or visit our official website. The manual is for reference only. Slight differences might be found between the electronic version and the paper version.
- All designs and software are subject to change without prior written notice. Product updates might result in some differences appearing between the actual product and the manual. Please contact customer service for the latest program and supplementary documentation.
- There might be errors in the print or deviations in the description of the functions, operations and technical data. If there is any doubt or dispute, we reserve the right of final explanation.
- Upgrade the reader software or try other mainstream reader software if the manual (in PDF

format) cannot be opened.

- All trademarks, registered trademarks and company names in the manual are properties of their respective owners.
- Please visit our website, contact the supplier or customer service if any problems occur while using the device.
- If there is any uncertainty or controversy, we reserve the right of final explanation.

Important Safeguard and Warnings

This section introduces content covering the proper handling of the device, hazard prevention, and prevention of property damage. Read carefully before using the device, and comply with the guidelines when using it.

Operation Requirements

⚠

- Check whether the power supply is correct before use.
- Do not unplug the power cord on the side of the device while the adapter is powered on.
- Operate the device within the rated range of power input and output.
- Transport, use and store the device under allowed humidity and temperature conditions.
- If the device is powered off for longer than a month, it should be placed in its original package and sealed. Make sure to keep it away from moisture, and store it under allowed humidity and temperature conditions.
- Do not drop or splash liquid onto the device, and make sure that there is no object filled with liquid on the device to prevent liquid from flowing into it.
- Do not disassemble the device without professional instruction.

Installation Requirements

⚠ WARNING

- Do not connect the power adapter to the device while the adapter is powered on.
- Strictly comply with the local electric safety code and standards. Make sure the ambient voltage is stable and meets the power supply requirements of the device.
- Do not connect the device to two or more kinds of power supplies, to avoid damage to the device.
- Improper use of the battery might result in a fire or explosion.

⚠

- Personnel working at heights must take all necessary measures to ensure personal safety including wearing a helmet and safety belts.
- Do not place the device in a place exposed to sunlight or near heat sources.
- Keep the device away from dampness, dust, and soot.
- Install the device on a stable surface to prevent it from falling.
- Install the device in a well-ventilated place, and do not block its ventilation.
- Use an adapter or cabinet power supply provided by the manufacturer.
- Use the power cords that are recommended for the region and conform to the rated power specifications.
- The power supply must conform to the requirements of ES1 in IEC 62368-1 standard and be no higher than PS2. Please note that the power supply requirements are subject to the device label.
- The device is a class I electrical appliance. Make sure that the power supply of the device is connected to a power socket with protective earthing.

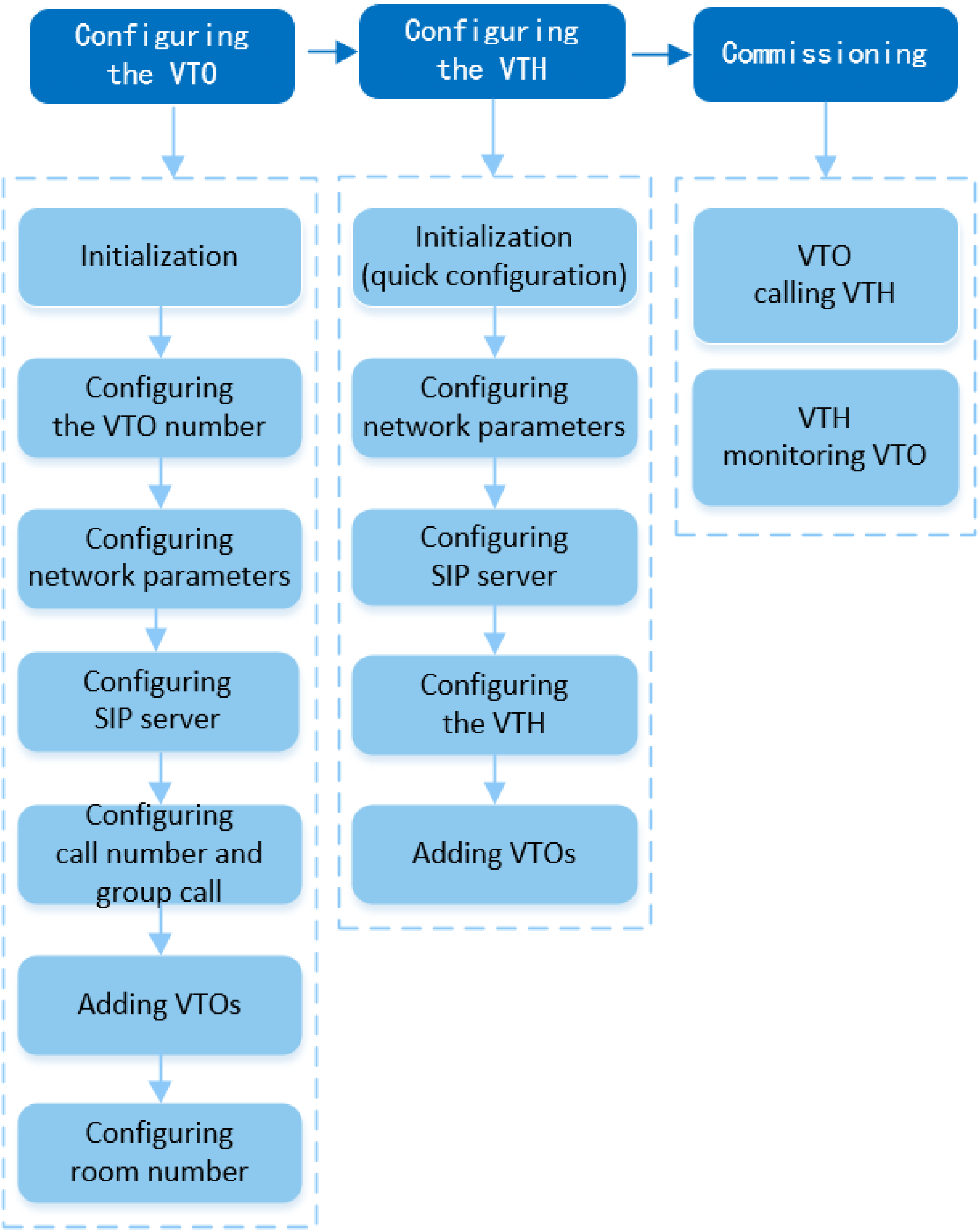
Table of Contents

1 Common Configuration

Follow the configuration procedure and carry out commissioning to ensure that the device can realize basic network access, call and monitoring functions.

1.1 Basic Configuration Procedure

Figure 1-1 Basic configuration procedure



1.2 Preparation

Before the configuration:

- Make sure that there are no short or open circuit in the VTO and VTH.
- Plan IP addresses and numbers (works as phone numbers) for every VTO and VTH.
- Make sure that the VTH and VTO are on the same network segment.

2 VTO Configuration

2.1 Initialization

For first-time login, you need to initialize the VTO.

Prerequisites

Make sure that the computer and the VTO are on the same network segment.

Procedure

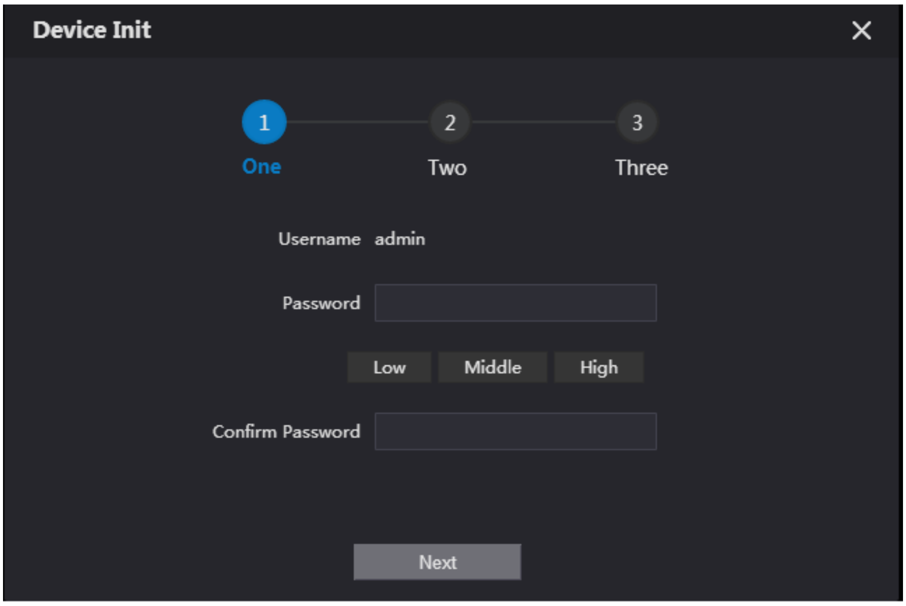
Step 1 Turn on the VTO.

Step 2 Enter the IP address of the VTO in the browser.

📖

For first-time login, enter the default IP (192.168.1.108). If you have multiple VTOs, we recommend you change the default IP address to avoid a conflict.

Figure 2-1 Device initialization



Device Init

Username admin

Password

Confirm Password

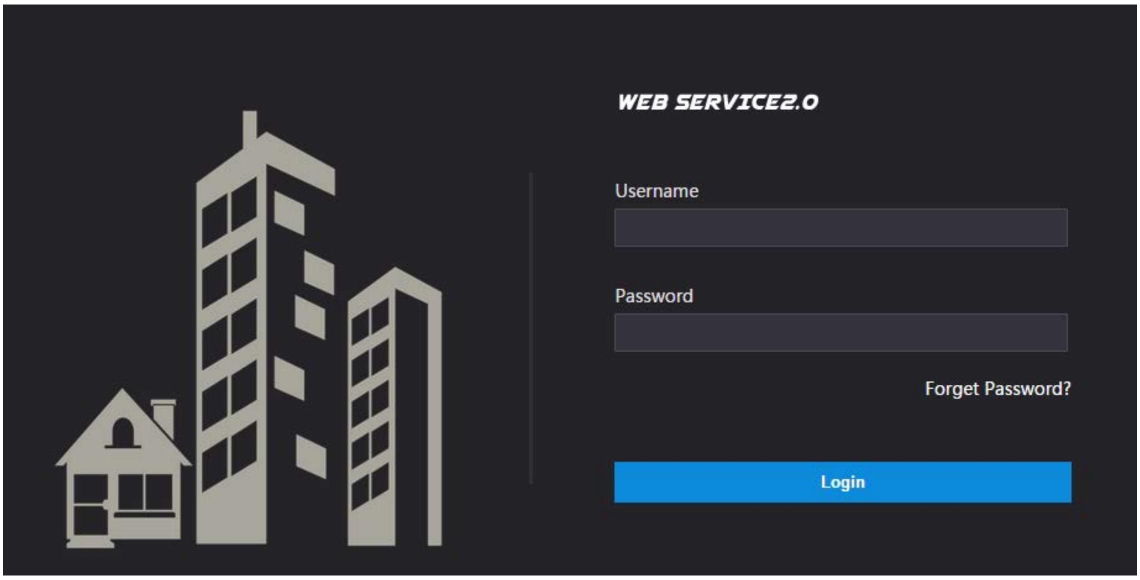
Step 3 Enter and confirm the new password, and then click **Next**.

Step 4 Select **Email** and enter the email address to use to reset your password.

Step 5 Click **Next**, and then click **OK** to go to the login page.

Step 6 Enter username and the new password to log in to the webpage.

Figure 2-2 Login page



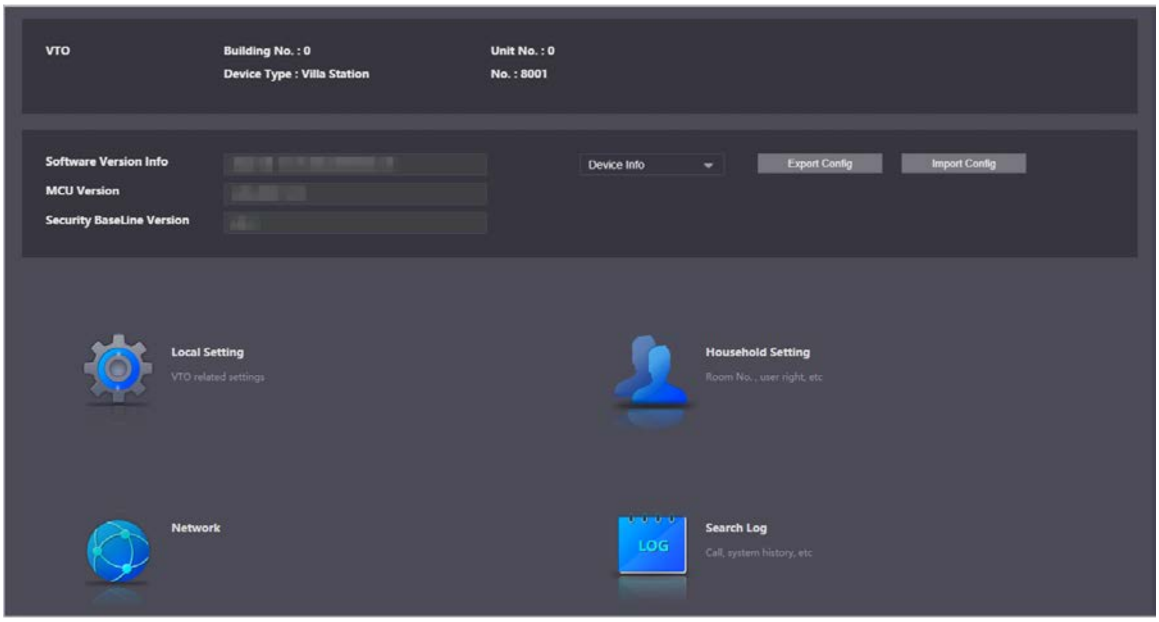
2.2 Configuring the VTO Number

Numbers can be used to distinguish each VTO. We recommend you set it according to the unit and building number.

Procedure

Step 1 Log in to the webpage of the VTO.

Figure 2-3 Home page



VTO

Building No. : 0

Device Type : Villa Station

Unit No. : 0

No. : 8001

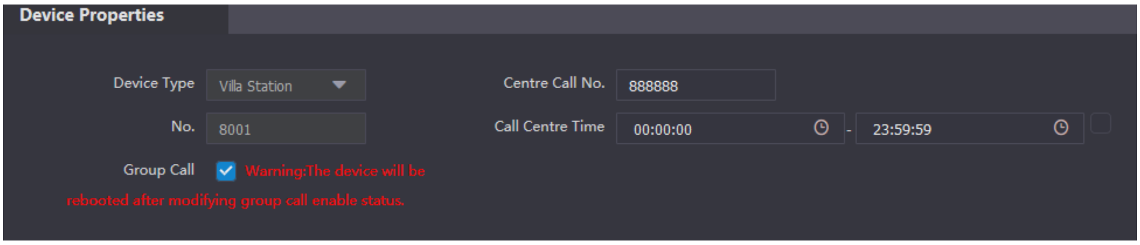
Software Version Info [redacted]

MCU Version [redacted]

Security BaseLine Version [redacted]

Step 2 Select **Local Settings** > **Basic**.

Figure 2-4 Device properties



Device Properties

Device Type: Villa Station

No.: 8001

Group Call: ☑ Warning:The device will be rebooted after modifying group call enable status.

Centre Call No.: 888888

Call Centre Time: 00:00:00 - 23:59:59 □

Step 3 Enter the number of the VTO, and then click **Confirm**.

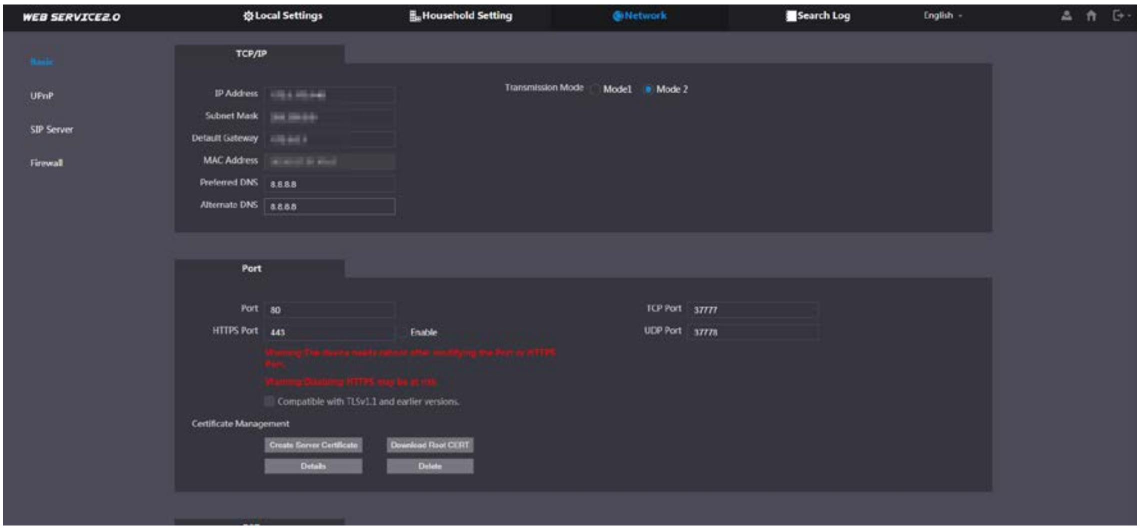
- You can change the number of a VTO when it is not working as the SIP server.
- A VTO number can contain up to 5 digits, and it cannot be the same as any room number.

2.3 Configuring Network Parameters

Procedure

Step 1 Select **Network** > **Basic**.

Figure 2-5 TCP/IP information



TCP/IP

IP Address: [redacted]

Subnet Mask: [redacted]

Default Gateway: [redacted]

MAC Address: [redacted]

Preferred DNS: 8.8.8.8

Alternate DNS: 8.8.8.8

Transmission Mode: ○ Mode1 ● Mode 2

Port

Port: 80

HTTPS Port: 443 Enable

Warning:The device needs reboot after modifying the Port or HTTPS Port.

Warning:Disabling HTTPS may be at risk.

□ Compatible with TLSv1.1 and earlier versions.

TCP Port: 37777

UDP Port: 37778

Certificate Management

Step 2 Enter the parameters, and then click **Save**.

Step 3 The VTO will automatically restart. You need to add the IP address of your computer to the same network segment as the VTO to log in again.

2.4 Configuring the SIP Server

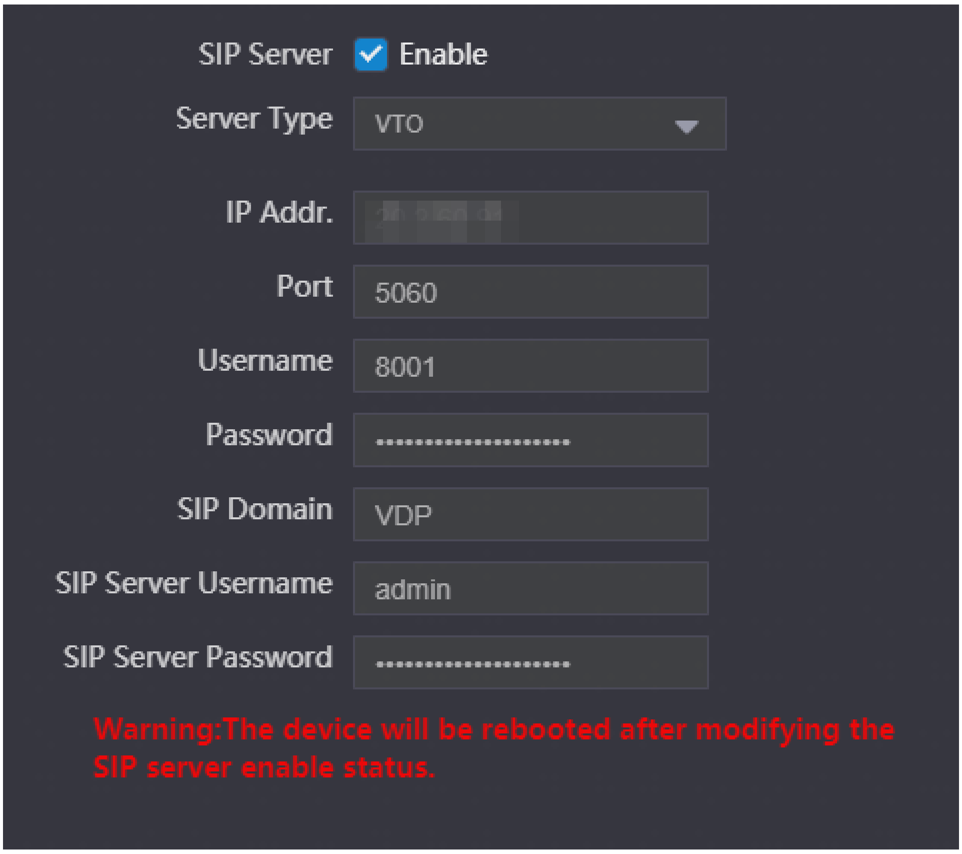
When connected to the same SIP server, all the VTOs and VTHs can call each other. You can use a VTO or another server as the SIP server.

2.4.1 VTO as the SIP Server

Procedure

Step 1 Select **Network** > **SIP Server**.

Figure 2-6 VTO as the SIP server



SIP Server ☑ Enable

Server Type: VTO

IP Addr.: [redacted]

Port: 5060

Username: 8001

Password: ••••••••••••••••••••

SIP Domain: VDP

SIP Server Username: admin

SIP Server Password: ••••••••••••••••••••

Warning:The device will be rebooted after modifying the SIP server enable status.

Step 2 Configure the parameters.

- If the current VTO works as the SIP server, enable **SIP Server**, and then click **Save**. The VTO will automatically restart, and then you can add other VTOs and VTHs to this VTO.
- If another VTO is working as the SIP server, set **Server Type** as **VTO**, configure the parameters, and then click **Save**.

Table 2-1 SIP server configuration

Parameter	Description
IP Addr.	The IP address of the VTO that works as the SIP server.
Port	5060 by default when the VTO works as an SIP server.
Username	Default.
Password	
SIP Domain	Default.
SIP Server Username	The username and password of the SIP server.
SIP Server Password	

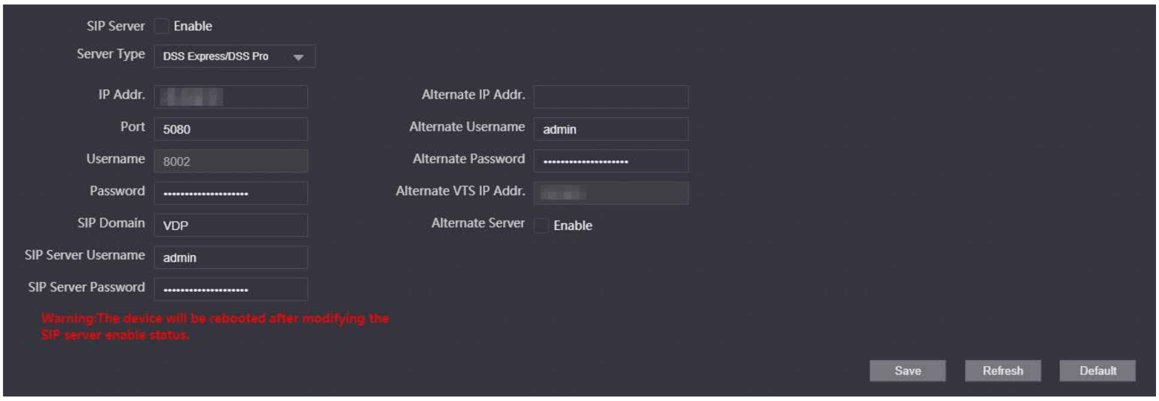
2.4.2 Platform (DSS Express/DSS Pro) as the SIP Server

Procedure

Step 1 Select **Network** > **SIP Server**.

Step 2 Enable **SIP Server**, and then set **Server Type** as **DSS Express/DSS Pro**.

Figure 2-7 Platform as the SIP server



SIP Server □ Enable

Server Type: DSS Express/DSS Pro

IP Addr.: [redacted]

Port: 5080

Username: 8002

Password: ••••••••••••••••••••

SIP Domain: VDP

SIP Server Username: admin

SIP Server Password: ••••••••••••••••••••

Alternate IP Addr.:

Alternate Username: admin

Alternate Password: ••••••••••••••••••••

Alternate VTS IP Addr.: [redacted]

Alternate Server □ Enable

Warning:The device will be rebooted after modifying the SIP server enable status.

Step 3 Configure the parameters.

When the platform is working as the SIP server and you want to configure the building number and building unit number, enable **Support Building** and **Support Unit** first.

Table 2-2 SIP server configuration

Parameter	Description
IP Addr.	The IP address of the SIP server.
Port	5080 by default when the platform works as the SIP server.
Username	Default.
Password	
SIP Domain	Keep default value VDP or leave it empty.
SIP Server Username/Password	The username and password of the SIP server.
Alternate IP Addr.	The alternate server will be used as the SIP server when DSS Express/DSS pro stops responding We recommend you configure the alternate IP address. ● If you enable **Alternate Server**, the current VTO you have logged in serves as the alternate server. ● If you want another VTO serve as the alternate server, you need to enter the IP address of that VTO in the **Alternate IP Addr.** textbox. Do not enable **Alternate Server** in this case.
Alternate Username/Password	Used to log in to the alternate server.
Alternate VTS IP Addr.	IP address of the alternate VTS.

Step 4 Click **Save**.

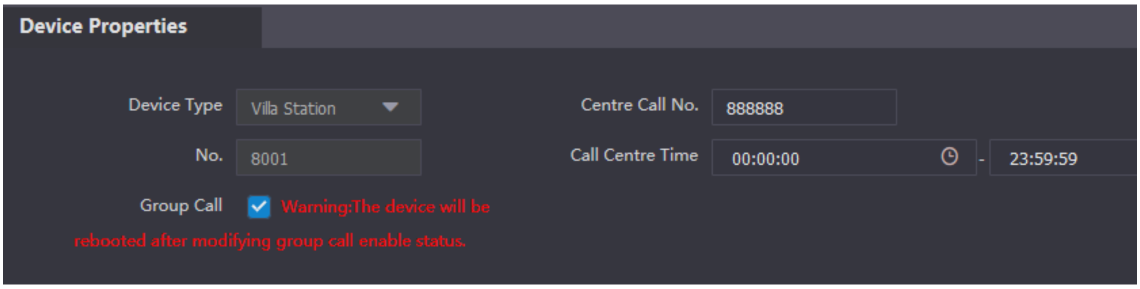
2.5 Configuring Call Number and Group Call

To dial and call a VTO, you need to configure the call number on each VTO that works as the phone number.

Procedure

Step 1 Select **Local Settings** > **Basic**.

Figure 2-8 Device properties



Device Properties

Device Type: Villa Station

No.: 8001

Group Call: ☑ Warning:The device will be rebooted after modifying group call enable status.

Centre Call No.: 888888

Call Centre Time: 00:00:00 - 23:59:59

Step 2 Enter the room number you need to call, and then click **Confirm** to save. Repeat this operation on every villa door station (VTO) webpage.

On the SIP server, you can enable the group call function. When calling a main VTH, all extension VTHs will also receive the call.

The VTO will restart after **Group Call** is enabled or disabled.

Step 3 Log in to the SIP server web page, and then select **Local Settings** > **Basic**.

Step 4 Enable **Group Call**, click **Confirm**, and then the VTO will restart.

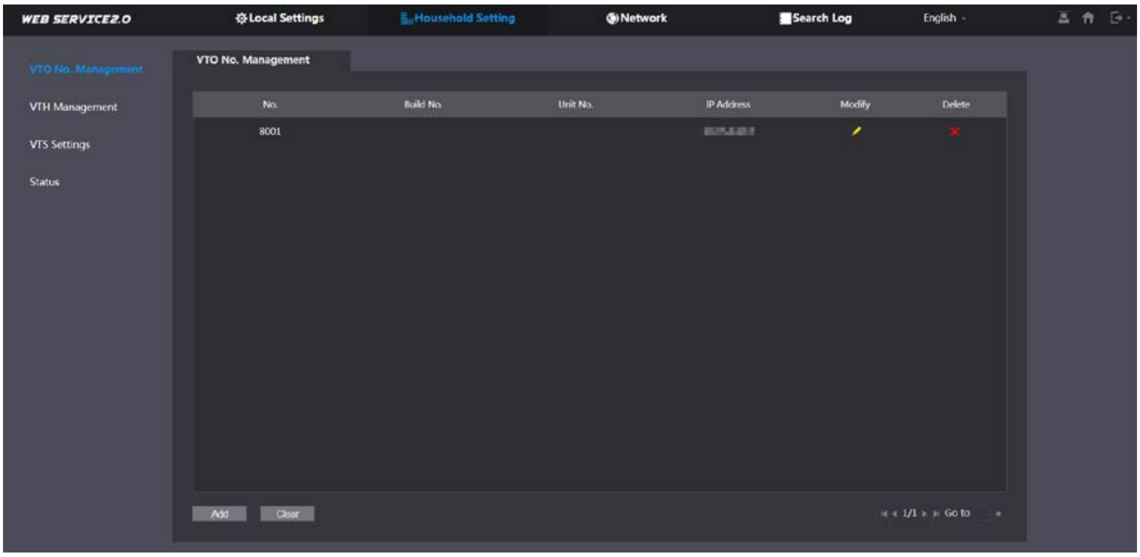
2.6 Adding VTOs

You can add VTOs to the SIP server, which will allow all the VTOs connected to the same SIP server to make video calls with one another. This section is for when a VTO is set as the SIP server.

Procedure

Step 1 Log in to the webpage of the SIP server, and then select **Household Setting** > **VTO No. Management**.

Figure 2-9 VTO number management

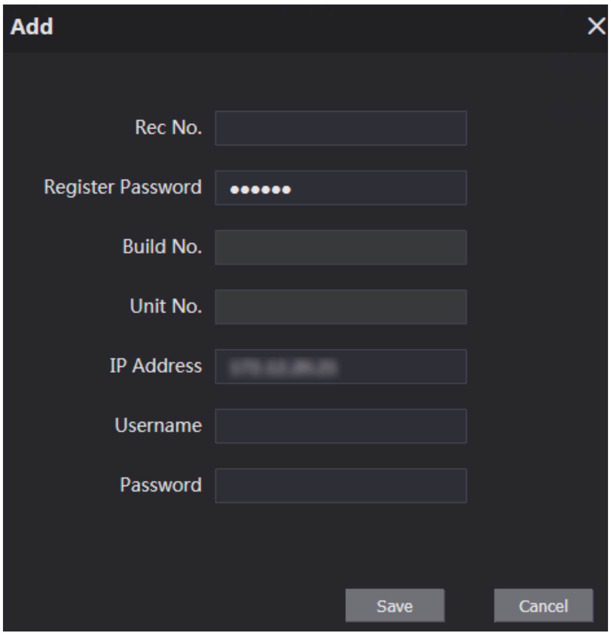


VTO No. Management

No.	Build No.	Unit No.	IP Address	Modify	Delete
8001			[redacted]	✎	✕

Step 2 Click **Add**.

Figure 2-10 Add a VTO



Step 3 Configure the parameters.

The SIP server must be added.

Table 2-3 Add door stations (VTO)

Parameter	Description
Rec No.	VTO number.
Register Password	Default.
Build No.	Only available when the server is set as the SIP server.
Unit No.	
IP Address	VTO IP address.
Username	The username and password of the webpage of the VTO.
Password	

Step 4 Click **Save**.

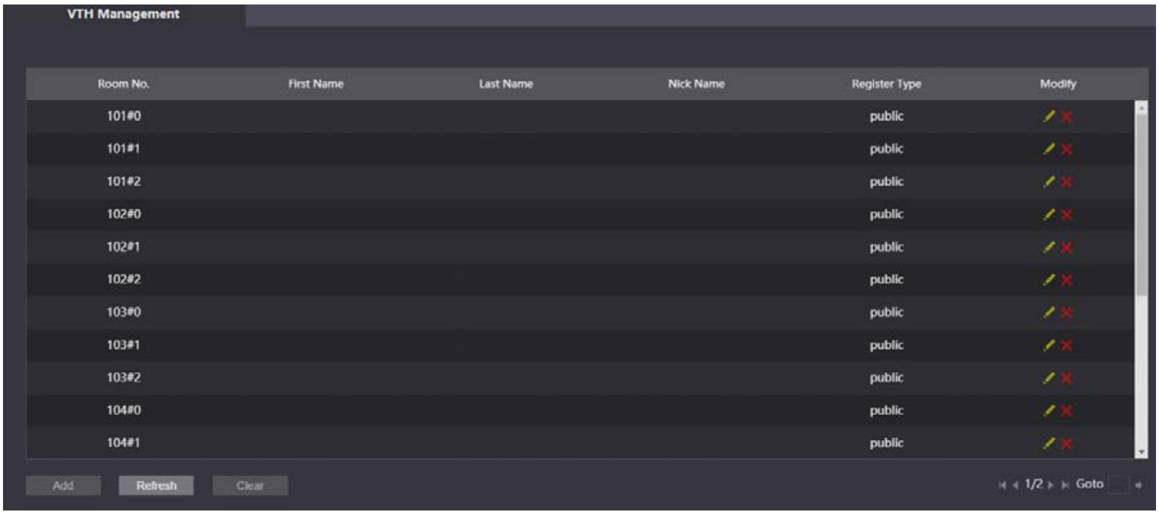
2.7 Adding Room Numbers

You can add room numbers to the SIP server, and then configure the room numbers on the VTHs to connect them to the network. This section is for when a VTO is set as the SIP server.

Procedure

Step 1 Log in to the webpage of the SIP server, and then select **Household Setting** > **VTH Management** to add the room number.

Figure 2-11 VTH management

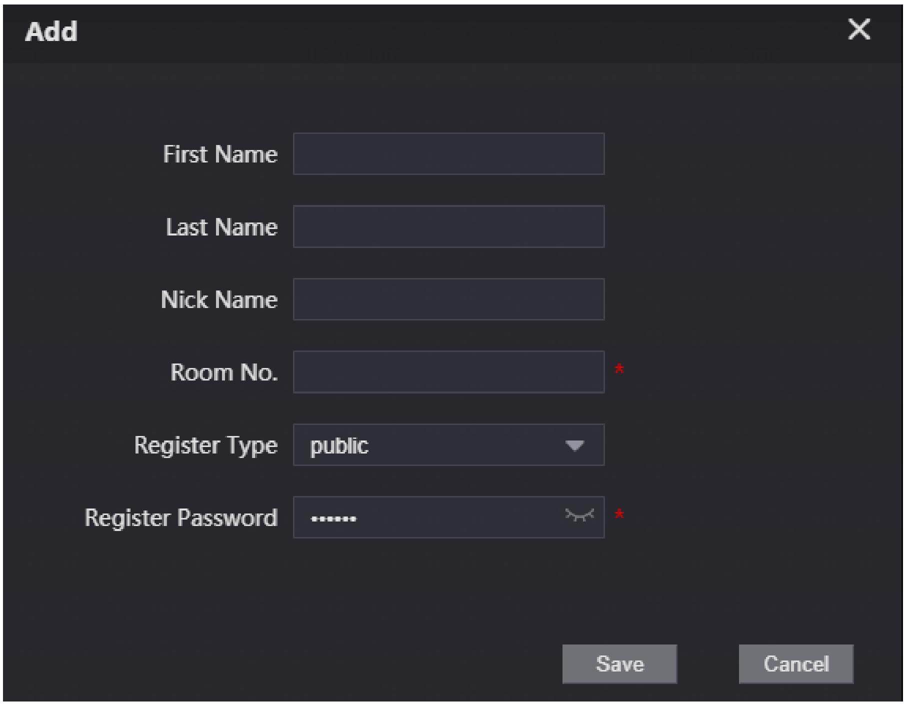


VTH Management

Room No.	First Name	Last Name	Nick Name	Register Type	Modify
101#0				public	
101#1				public	
101#2				public	
102#0				public	
102#1				public	
102#2				public	
103#0				public	
103#1				public	
103#2				public	
104#0				public	
104#1				public	

Step 2 Click **Add**.

Figure 2-12 Add a single room number



Add

First Name

Last Name

Nick Name

Room No. *

Register Type: public

Register Password: •••••• *

Step 3 Configure room information.

Table 2-4 Room information

Parameter	Description
First Name	Information used to differentiate each room.
Last Name	
Nick Name	

Parameter	Description
Room No.	Room number. 📖 ● The room number consists of up to 6 characters, and can contain numbers and letters. It cannot be the same as the VTO number. ● When there are multiple VTHs, the room number for the main VTH should end with #0, and the room numbers for the extension VTHs with #1, #2…. ● You can configure up to 9 extension VTHs for each main VTH.
Registration Mode	Select **public**.
Registered Password	Default.

Step 4 Click **Save**.

Related Operations

- Click ✏ to modify room information.
- Click ✖ to delete the room.

3 VTH Configuration

This chapter introduces how to configure the VTH and use the intercom function.

3.1 Quick Configuration

For first-time login, you can quickly initialize and configure the VTH through quick configuration.

Background Information

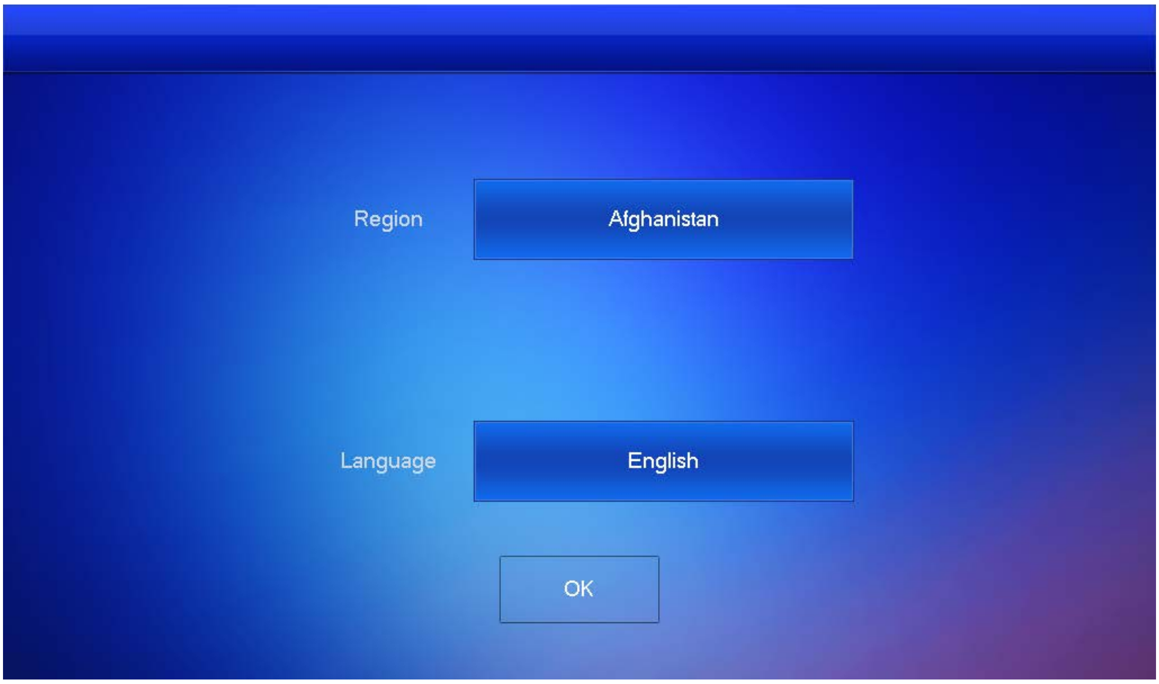
Quick configuration enables you to configure the parameters of the VTO, VTH and the SIP server at the same time. For more details about modifying the parameters, see "3.2 Manual Configuration".

Procedure

Step 1 Turn on the VTH.

Step 2 Select a region and language, and then tap **OK**.

Figure 3-1 Region and language

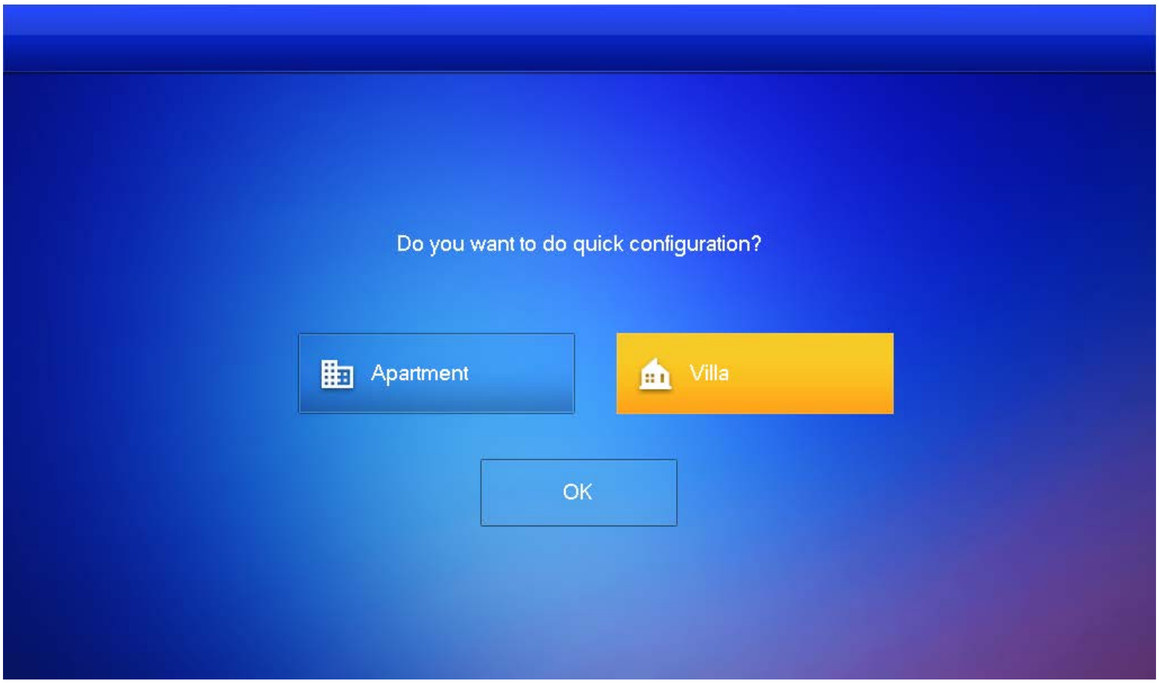


Region: Afghanistan

Language: English

Step 3 Set the quick configuration type as **Villa**, and then tap **OK**.

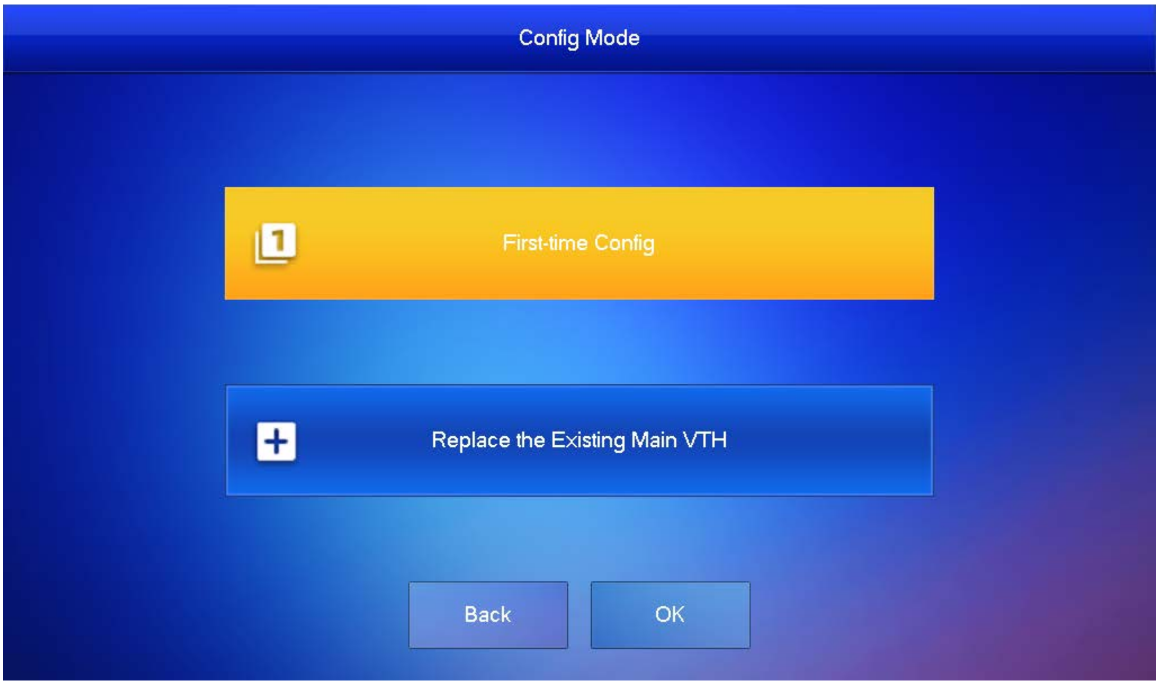
Figure 3-2 Quick configuration



Do you want to do quick configuration?

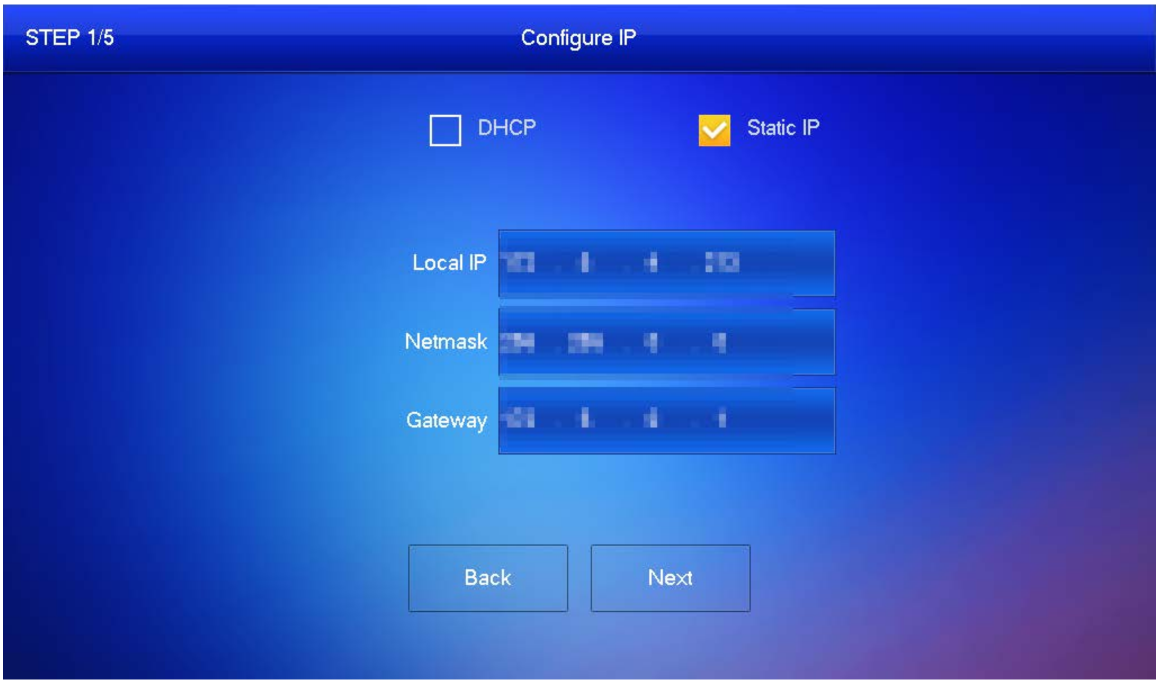
Step 4 Select **First-time Config**, and then tap **OK**.

Figure 3-3 Configuration mode



Step 5 Select **Static IP**, enter your planned VTH IP, net mask and gateway, and then tap **Next**.

Figure 3-4 Configure the network parameters



STEP 1/5 Configure IP

□ DHCP ☑ Static IP

Local IP [redacted]

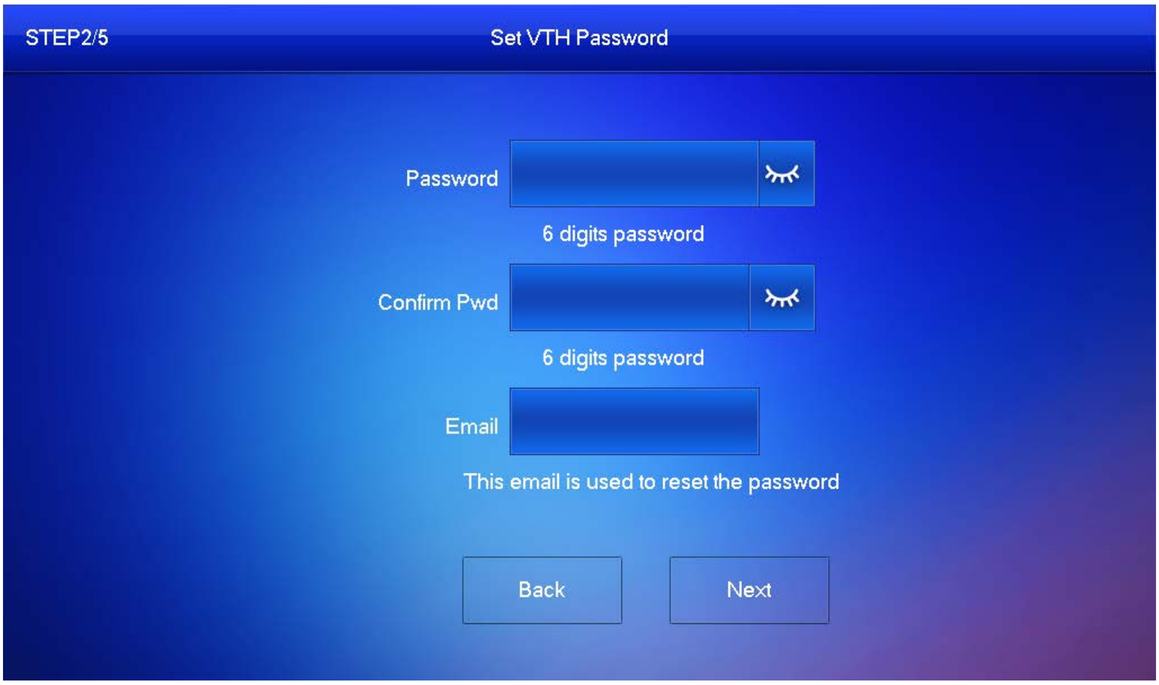
Netmask [redacted]

Gateway [redacted]

Step 6 On the **Set VTH Password** screen, enter and confirm the password, and enter the email address, and then tap **Next**.

- The password is used to enter project setting.
- If you select **Apartment** in Step 2, initialization is completed with this step.

Figure 3-5 Set the password for the VTH



STEP2/5 Set VTH Password

Password

6 digits password

Confirm Pwd

6 digits password

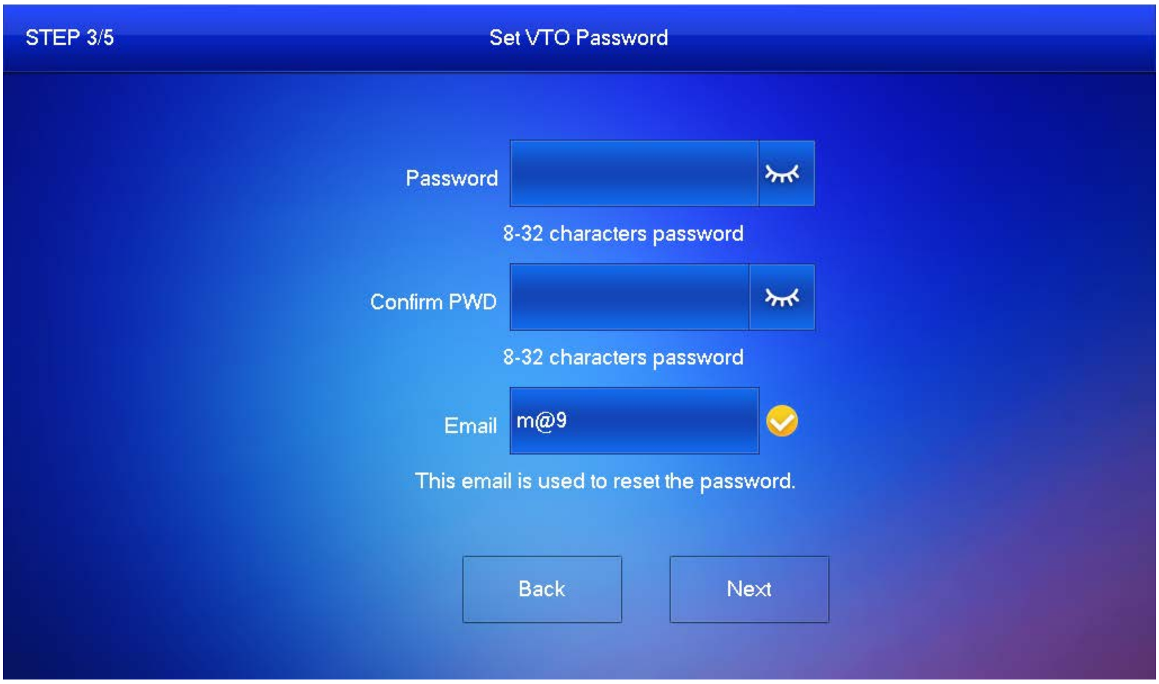
Email

This email is used to reset the password

Step 7 On the **Set VTO Password** screen, enter the password of the VTO, confirm it, and then tap **Next**.

The password is used to enter project setting.

Figure 3-6 Set the password for the VTO



STEP 3/5 Set VTO Password

Password:

8-32 characters password

Confirm PWD:

8-32 characters password

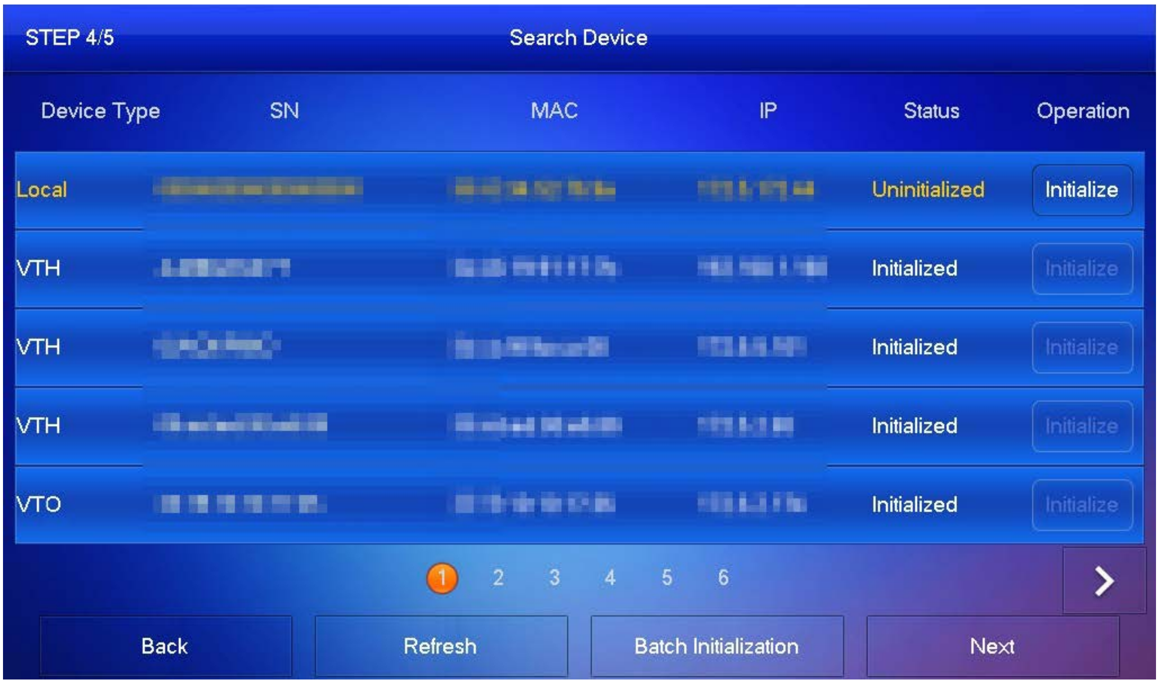
Email: m@9

This email is used to reset the password.

Step 8 Tap **Initialize** to complete the initialization of the VTO and the main VTH, and then tap **Next**.

You need to make sure that the IP addresses of the VTH and VTO are on the same network segment. Otherwise, the VTH will not be able to obtain information from the VTO after configuration.

Figure 3-7 Initialize the devices



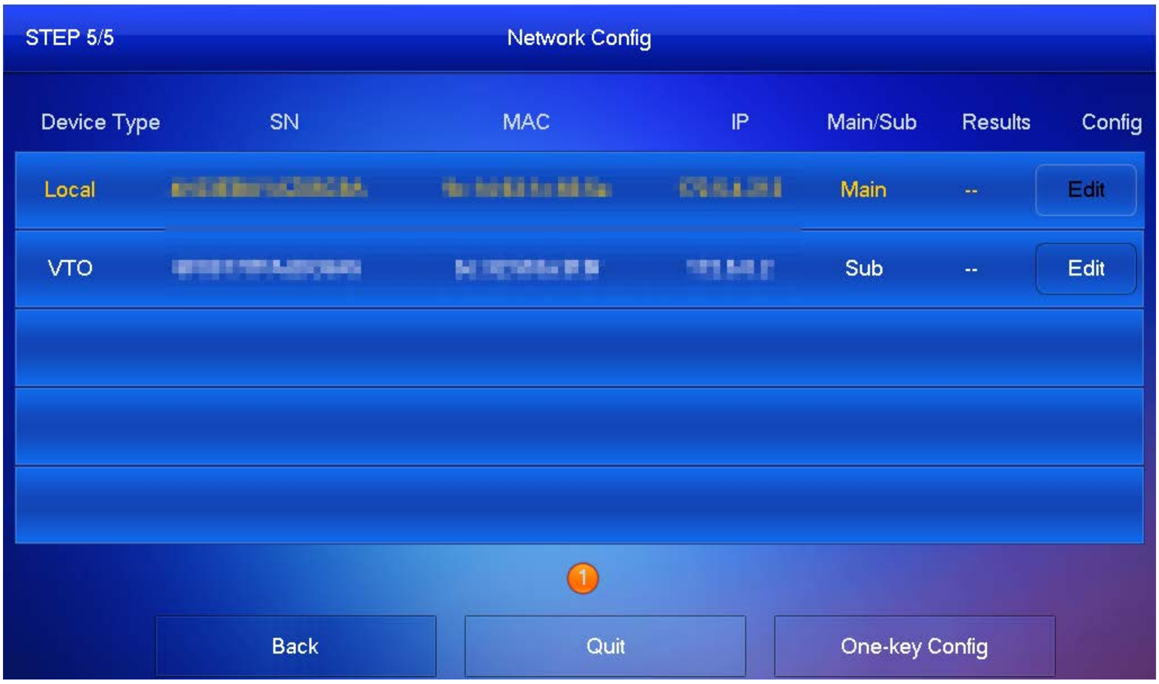
STEP 4/5 Search Device

Device Type	SN	MAC	IP	Status	Operation
Local	[redacted]	[redacted]	[redacted]	Uninitialized	Initialize
VTH	[redacted]	[redacted]	[redacted]	Initialized	Initialize
VTH	[redacted]	[redacted]	[redacted]	Initialized	Initialize
VTH	[redacted]	[redacted]	[redacted]	Initialized	Initialize
VTO	[redacted]	[redacted]	[redacted]	Initialized	Initialize

Step 9 Tap **One-key Config** to finish the configuration of the VTO and VTH, as well as the SIP server.

The status bar will inform you whether your configuration was successful.

Figure 3-8 Finish the configuration



STEP 5/5 Network Config

Device Type	SN	MAC	IP	Main/Sub	Results	Config
Local	[redacted]	[redacted]	[redacted]	Main	--	Edit
VTO	[redacted]	[redacted]	[redacted]	Sub	--	Edit

3.2 Manual Configuration

You can manually configure the parameters you want to modify.

3.2.1 Configuring Network Parameters

You can choose to connect the VTH to the network either through WLAN or LAN.

3.2.1.1 LAN

Procedure

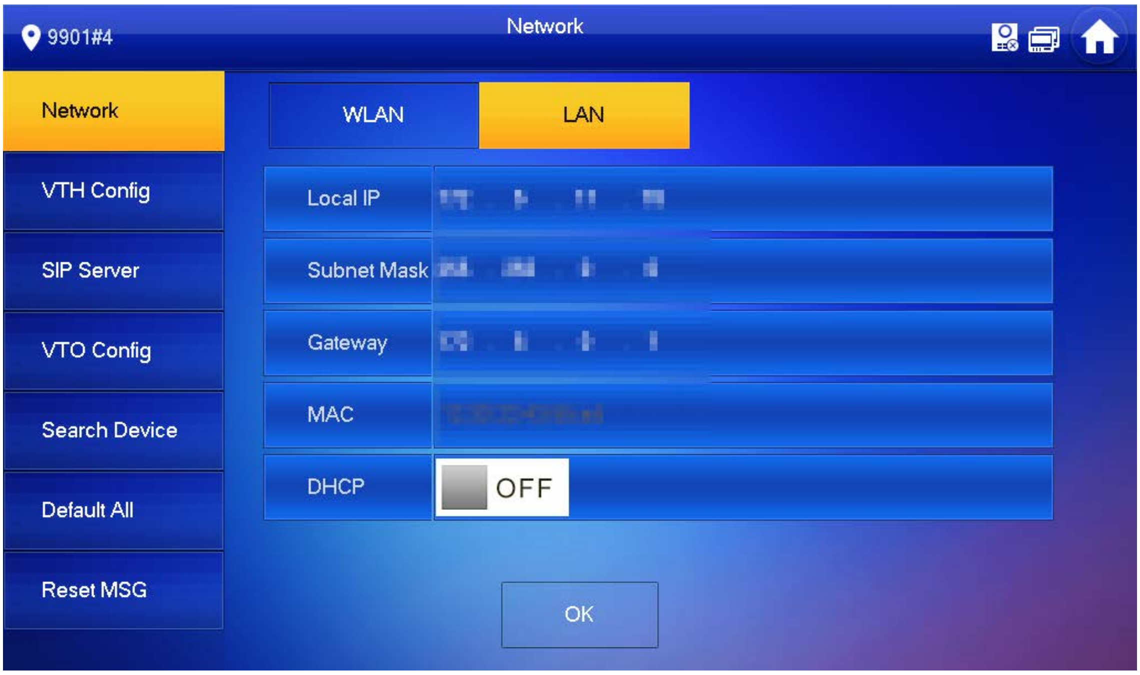
Step 1 Select **Setting** > **Project Setting**, and enter the password that you set for the VTH.

Step 2 Tap **Network** > **LAN**.

Step 3 Enter the local IP subnet mask and gateway that you planned for the VTH.

Step 4 You can also tap OFF to enable the DHCP function to obtain IP information automatically.

Figure 3-9 LAN



9901#4

Network

- Network
- VTH Config
- SIP Server
- VTO Config
- Search Device
- Default All
- Reset MSG

WLAN | LAN

Local IP	[redacted]
Subnet Mask	[redacted]
Gateway	[redacted]
MAC	[redacted]
DHCP	OFF

OK

Step 5 Tap **OK**.

3.2.1.2 WLAN

Procedure

Step 1 Select **Setting** > **Project Setting**, and enter the password that you set for the VTH.

Step 2 Tap **Network** > **WLAN**.

Step 3 Enable OFF to see all the usable networks.

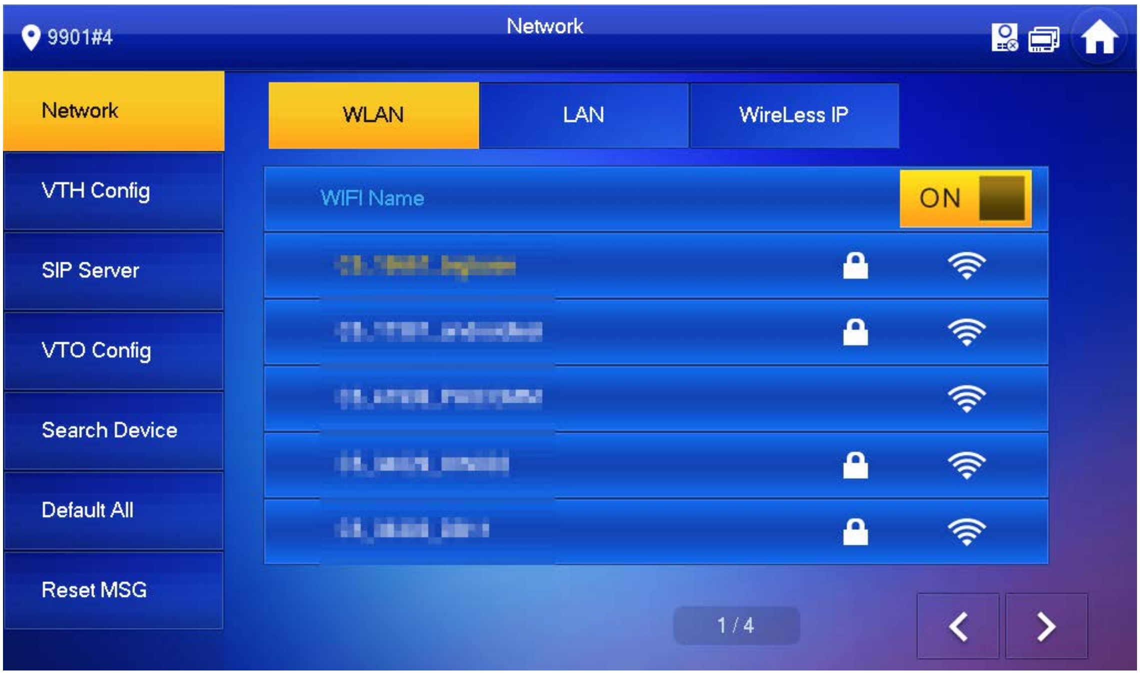
Step 4 Before connecting to a Wi-Fi network, do either of the following first.

- Tap **WireLessIP**, enter the local IP, subnet mask and gateway that you planned for the VTH, and then tap **OK**.
- Tap **WireLessIP**, and tap OFF to enable the DHCP function to obtain IP information automatically.

To enable the DHCP function, use a router with a DHCP function.

Step 5 On the **WLAN** screen, tap the Wi-Fi name, and then enter the password to connect to the network.

Figure 3-10 WLAN



WIFI Name: ON

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

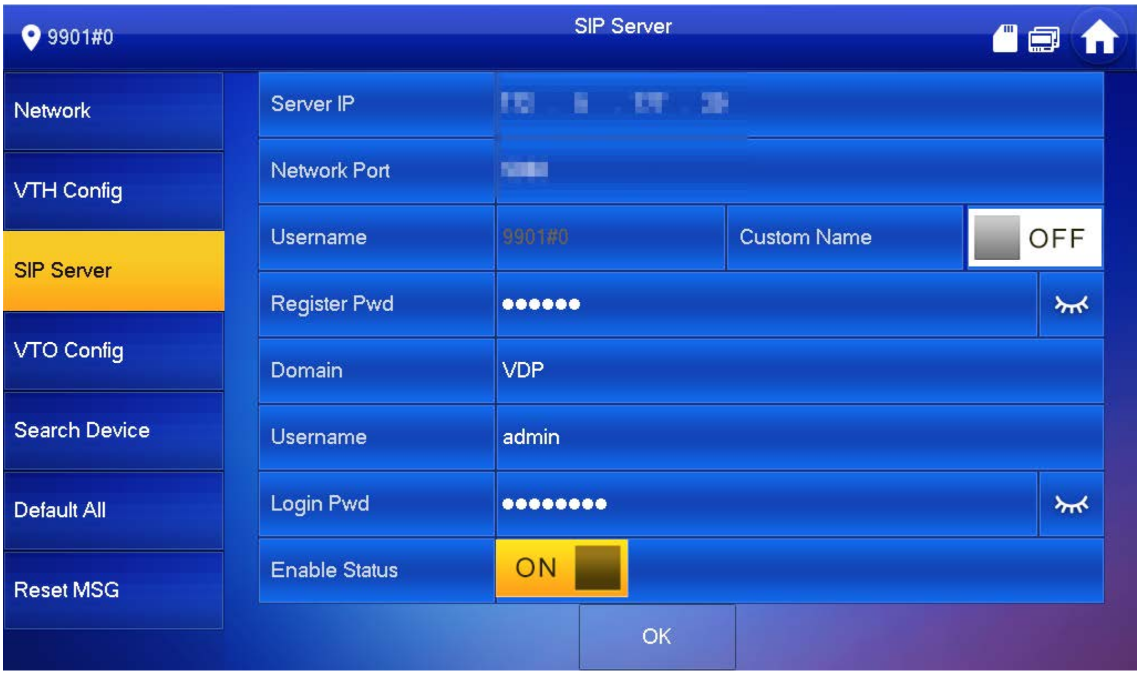
3.2.2 Configuring the SIP Server

Procedure

Step 1 Select **Setting** > **Project Setting**, and enter the password that you set for the VTH.

Step 2 Tap **SIP Server.**

Figure 3-11 SIP server



Server IP	[redacted]
Network Port	[redacted]
Username	9901#0
Custom Name	OFF
Register Pwd	••••••
Domain	VDP
Username	admin
Login Pwd	••••••••
Enable Status	ON

Step 3 Configure the SIP server parameters.

Step 4 Set **Enable Status** to ON.

Step 5 Tap **OK**.

Table 3-1 SIP server

Parameter	Description
Server IP	● When the platform is set as the SIP server, the server IP is the IP address of the platform. ● When the VTO is set as the SIP server, the server IP is the IP address of the VTO.
Network Port	● When the platform is set as the SIP server, the network port is 5080. ● When the VTO is set as the SIP server, the network port is 5060.
Username	Do not change it from the default.
Register Pwd	
Domain	Registration domain of the SIP server. It can be null. When the VTO is set as the SIP server, the registration domain of the SIP server is VDP.
Username	Username and password to log in to the SIP server.
Login Pwd	

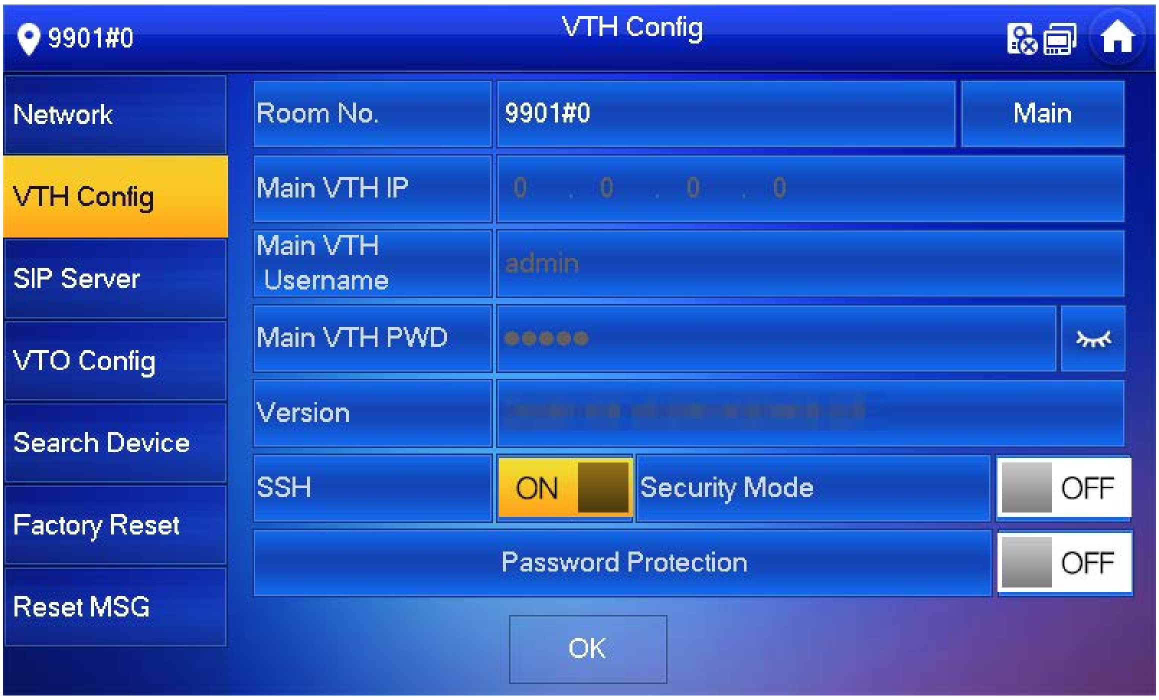
3.2.3 Configuring the VTH

Procedure

Step 1 Select **Setting** > **Project Setting**, and enter the password that you set for the VTH.

Step 2 Tap **VTH Config.**

Figure 3-12 VTH Configuration



Room No. 9901#0

Main VTH IP 0 . 0 . 0 . 0

Main VTH Username admin

Main VTH PWD ●●●●●

Version [illegible]

SSH ON

Security Mode OFF

Password Protection OFF

Step 3 Enter the room number (such as 9901 or 101#0).

Step 4 Configure parameters of the VTH. If there is an extension VTH, the room number must end with #0. Otherwise, it will fail to connect to the VTO.

- As a main VTH.

  Enter the room number (such as 9901 or 101#0) and other information, and then tap

OK.

Room number must be the same with **VTH Short No.**, which is configured when adding the VTHs on the webpage of the VTO. Otherwise, it will fail to connect to the VTO.

When there are extension VTHs, room numbers must end with #0. Otherwise, it will fail to connect to the VTO.

- As an extension VTH.
  1. Switch **Main** to **Extension**.
  2. Enter the room number (such as 101#1), the IP address of the main VTH and other information, and then tap **OK**.

     Main VTH Username and **Main VTH PWD** are the username and password of the main VTH. Default user name is admin, and the password is the one you set during initialization.

Step 5 Turn on the following functions as needed.

- **SSH**: The debugging terminal will connect to the VTH remotely through SSH protocol.
- **Security Mode**: Log in to the VTO in a secured way.
- **Password Protection**: Encrypt the password before sending out.

It is recommended to turn off SSH, and turn on security mode and password protection. Otherwise, the device might be exposed to security risks and data leakage.

Step 6 Tap **OK**.

3.2.4 Configuring the VTO

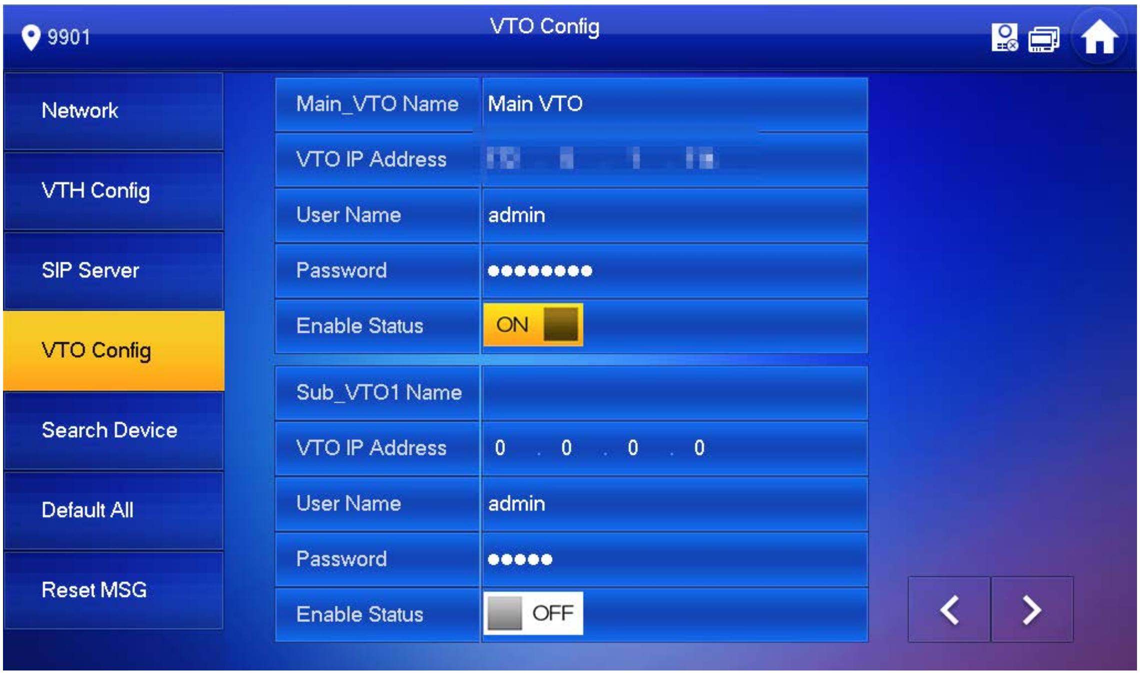
Add VTOs and fence stations to bind them with the VTH.

Procedure

Step 1 Select **Setting** > **Project Setting**, and then enter the password that you set for the VTH.

Step 2 Tap **VTO Config.**

Figure 3-13 VTO configuration



Main_VTO Name	Main VTO
VTO IP Address	[redacted]
User Name	admin
Password	●●●●●●●●
Enable Status	ON
Sub_VTO1 Name	
VTO IP Address	0 . 0 . 0 . 0
User Name	admin
Password	●●●●●
Enable Status	OFF

Step 3 Add VTO.

3.2.4.1 Adding the Main VTO

Procedure

Step 1 Enter the main VTO name, VTO IP address, username and password.

Step 2 Turn on **Enable Status**.

User Name and **Password** must be consistent with the username and password that are used to log in to the webpage of the VTO.

Step 3 Check whether the configuration is successful by checking the status bar at the top right corner.

3.2.4.2 Adding the Sub VTO

Procedure

Step 1 Enter the sub VTO name, sub VTO IP address, username, and password.

Step 2 Turn on **Enable Status**.

Tap < / > to turn pages and add more sub VTOs or fence stations.

Step 3 Check whether the configuration was successful by checking the status bar at the top right corner.

4 Commissioning

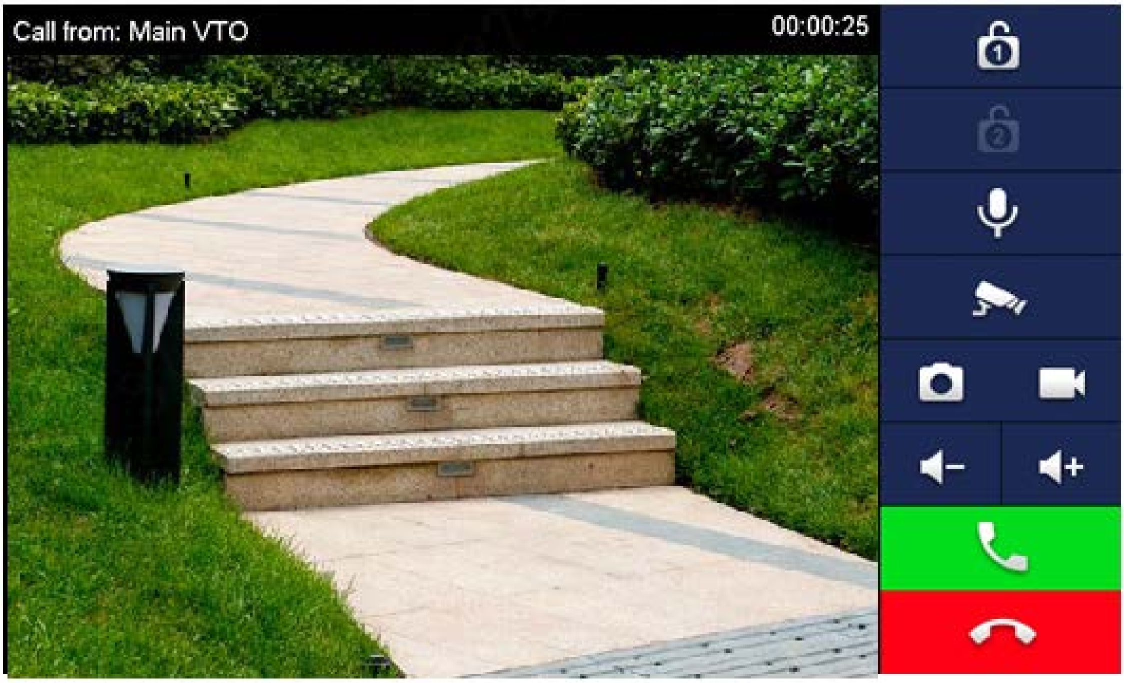
4.1 Using the VTO to Call the VTH

Procedure

Step 1 Dial a room number on the VTO.

Step 2 Tap ☎ on the VTH to answer the call.

Figure 4-1 Call screen

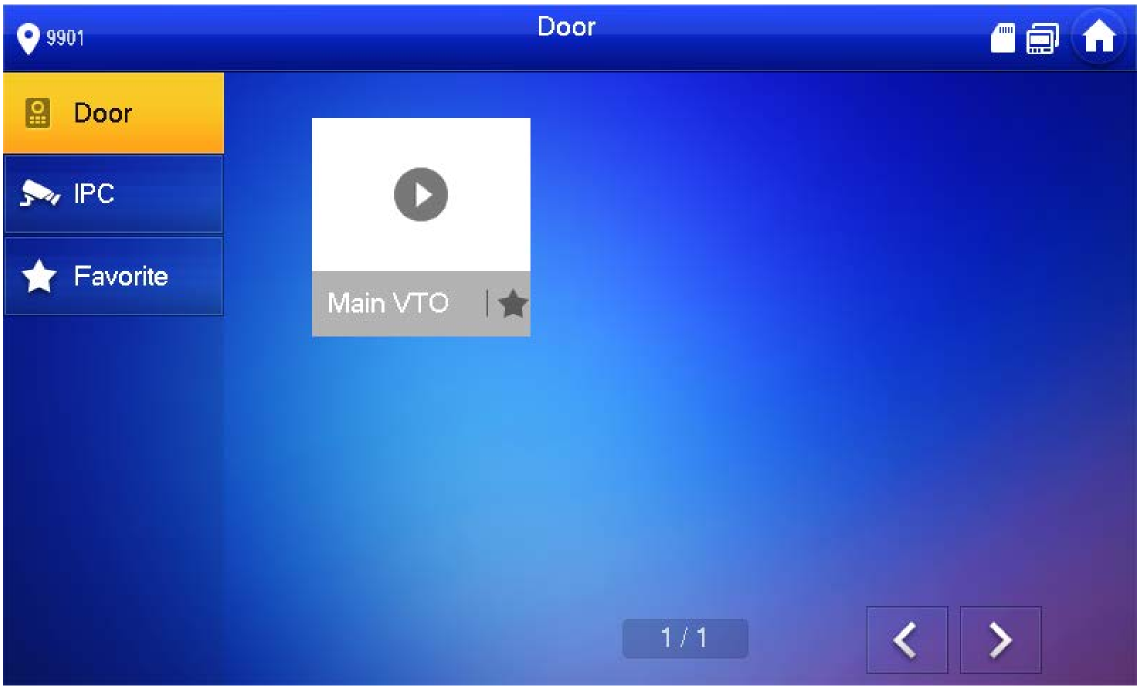


4.2 Using the VTH to Monitor the VTO

Procedure

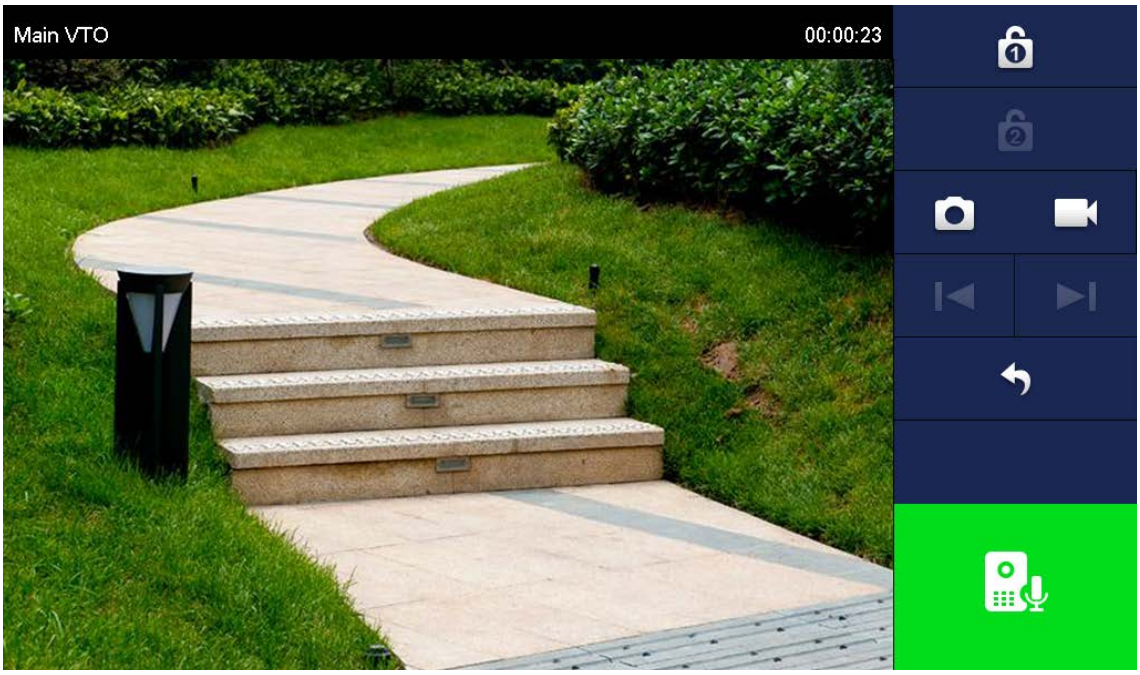
Step 1 On the home screen of the VTH, select **Monitor** > **Door**.

Figure 4-2 Door



Step 2 Select a VTO to view the VTO video.

Figure 4-3 Monitoring video



Appendix 1 Cybersecurity Recommendations

Mandatory actions to be taken for basic device network security:

1. **Use Strong Passwords**

   Please refer to the following suggestions to set passwords:

   - The length should not be less than 8 characters.
   - Include at least two types of characters; character types include upper and lower case letters, numbers and symbols.
   - Do not contain the account name or the account name in reverse order.
   - Do not use continuous characters, such as 123, abc, etc.
   - Do not use overlapped characters, such as 111, aaa, etc.

2. **Update Firmware and Client Software in Time**

   - According to the standard procedure in Tech-industry, we recommend to keep your device (such as NVR, DVR, IP camera, etc.) firmware up-to-date to ensure the system is equipped with the latest security patches and fixes. When the device is connected to the public network, it is recommended to enable the"auto-check for updates" function to obtain timely information of firmware updates released by the manufacturer.
   - We suggest that you download and use the latest version of client software.

"Nice to have" recommendations to improve your device network security:

1. **Physical Protection**

   We suggest that you perform physical protection to device, especially storage devices. For example, place the device in a special computer room and cabinet, and implement well-done access control permission and key management to prevent unauthorized personnel from carrying out physical contacts such as damaging hardware, unauthorized connection of removable device (such as USB flash disk, serial port), etc.

2. **Change Passwords Regularly**

   We suggest that you change passwords regularly to reduce the risk of being guessed or cracked.

3. **Set and Update Passwords Reset Information Timely**

   The device supports password reset function. Please set up related information for password reset in time, including the end user's mailbox and password protection questions. If the information changes, please modify it in time. When setting password protection questions, it is suggested not to use those that can be easily guessed.

4. **Enable Account Lock**

   The account lock feature is enabled by default, and we recommend you to keep it on to guarantee the account security. If an attacker attempts to log in with the wrong password several times, the corresponding account and the source IP address will be locked.

5. **Change Default HTTP and Other Service Ports**

   We suggest you to change default HTTP and other service ports into any set of numbers between 1024–65535, reducing the risk of outsiders being able to guess which ports you are using.

6. **Enable HTTPS**

   We suggest you to enable HTTPS, so that you visit Web service through a secure communication channel.

7. **MAC Address Binding**

   We recommend you to bind the IP and MAC address of the gateway to the device, thus reducing the risk of ARP spoofing.

8. **Assign Accounts and Privileges Reasonably**

   According to business and management requirements, reasonably add users and assign a minimum set of permissions to them.

9. **Disable Unnecessary Services and Choose Secure Modes**

   If not needed, it is recommended to turn off some services such as SNMP, SMTP, UPnP, etc., to reduce risks.

   If necessary, it is highly recommended that you use safe modes, including but not limited to the following services:

   - SNMP: Choose SNMP v3, and set up strong encryption passwords and authentication passwords.
   - SMTP: Choose TLS to access mailbox server.
   - FTP: Choose SFTP, and set up strong passwords.
   - AP hotspot: Choose WPA2-PSK encryption mode, and set up strong passwords.

10. **Audio and Video Encrypted Transmission**

    If your audio and video data contents are very important or sensitive, we recommend that you use encrypted transmission function, to reduce the risk of audio and video data being stolen during transmission.

    Reminder: encrypted transmission will cause some loss in transmission efficiency.

11. **Secure Auditing**

    - Check online users: we suggest that you check online users regularly to see if the device is logged in without authorization.
    - Check device log: By viewing the logs, you can know the IP addresses that were used to log in to your devices and their key operations.

12. **Network Log**

    Due to the limited storage capacity of the device, the stored log is limited. If you need to save the log for a long time, it is recommended that you enable the network log function to ensure that the critical logs are synchronized to the network log server for tracing.

13. **Construct a Safe Network Environment**

    In order to better ensure the safety of device and reduce potential cyber risks, we recommend:

    - Disable the port mapping function of the router to avoid direct access to the intranet devices from external network.
    - The network should be partitioned and isolated according to the actual network needs. If there are no communication requirements between two sub networks, it is suggested to use VLAN, network GAP and other technologies to partition the network, so as to achieve the network isolation effect.
    - Establish the 802.1x access authentication system to reduce the risk of unauthorized access to private networks.
    - Enable IP/MAC address filtering function to limit the range of hosts allowed to access the device.