2-Wire Hybrid Indoor Monitor

User's Manual

V1.0.4

Foreword

General

This manual introduces the structure, functions, and operations of the 2-wire hybrid indoor monitor (hereinafter referred to as "the VTH"). 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.
NOTE	Provides additional information as a supplement to the text.

Revision History

Version	Revision Content	Release Time
V1.0.4	Revised network diagram.	Februart 2025
V1.0.3	Revised DIP configuration.	December 2024
V1.0.2	Revised network diagram.	October 2024
V1.0.1	Revised network diagram.	September 2024
V1.0.0	First Release.	July 2024

Privacy Protection Notice

As the device user or data controller, you might collect the personal data of others such as their face, audio, 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.

Installation Requirements

WARNING

- Do not connect the power adapter to the device while the adapter is powered on.
- Do not connect the device to two or more kinds of power supplies, to avoid damage to the device.
- Please follow the electrical requirements to power the device.
  - Following are the requirements for selecting a power adapter.
    - The power supply must conform to the requirements of IEC 60950-1 and IEC 62368-1 standards.
    - The voltage must meet the SELV (Safety Extra Low Voltage) requirements and not exceed ES-1 standards.
    - When the power of the device does not exceed 100 W, the power supply must meet LPS requirements and be no higher than PS2.
  - We recommend using the power adapter provided with the device.
  - When selecting the power adapter, the power supply requirements (such as rated voltage) are subject to the device label.

- 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 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.

Operation Requirements

DANGER

Battery Pack Precautions

Preventive measures (including but not limited to):

- Do not transport, store or use the batteries in high altitudes with low pressure and environments with extremely high and low temperatures.
- Do not dispose the batteries in fire or a hot oven, or mechanically crush or cut the batteries to avoid an explosion.

- Do not leave the batteries in environments with extremely high temperatures to avoid explosions and leakage of flammable liquid or gas.
- Do not subject the batteries to extremely low air pressure to avoid explosions and the leakage of flammable liquid or gas.

⚠

- 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.

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1 Production Overview

1.1 Introduction

The 2-wire hybrid indoor monitor (VTH) uses its 2-wire system for communication. It can display videos from VTOs and HDCVI cameras, and perform video intercom calls with VTOs. It can also perform remote unlock through the DMSS app.

Power supply must be certified by our company.

1.2 Function

2-Wire Communication

Supports the 2-wire communication system.

Video and Voice Call

Make video and voice calls to other VTOs.

Monitoring

Monitors VTOs, IPC and HDCVI cameras.

Auto Snapshot

Take snapshots while you are on a call, and stores them to the SD card.

DND (Do Not Disturb)

Mutes call notifications.

Remote Unlock

Unlocks doors remotely.

Arm and Disarm

Arms and disarms devices.

Playback

Displays videos and pictures from the SD card.

Record

Displays call and alarm records.

Messages

Displays guest messages.

Wi-Fi Networking

Connects to Wi-Fi networks.

2 Network Diagram

2.1 Network Diagram for Villa Scenario

The network diagram below displays all the networking scenarios.

Different models of the devices have different requirements.

1. For H series VTH and F series VTO.

   When there are 6 devices (VTH+VTO) connected together, only a maximum of 2 devices can provide power output.
2. For G series VTH and S series VTO.
   - When there are no more than 4 VTHs, the maximum current output of all the 12 VDC power is 500 mA.
   - When there are more than 4 VTHs, the maximum current output of all the 12 VDC power is 300 mA.

When multiple VTHs are connected in the cascade mode to the port on the branch terminal, to reduce signal reflection, the 14th DIP switch of the farthest VTH from the port needs to be turned on.

- The power supply of HDCVI camera cannot be grounded.
- The product appearance is for reference only.

Wiring 1 VTO and 1 VTH

- The two wires connected to the positive and negative terminals of OUT cannot be short-circuited.
- The line termination terminal and branch terminal are optional in this scenario.

Figure 2-1 Network diagram (without line termination terminal and branch terminal)

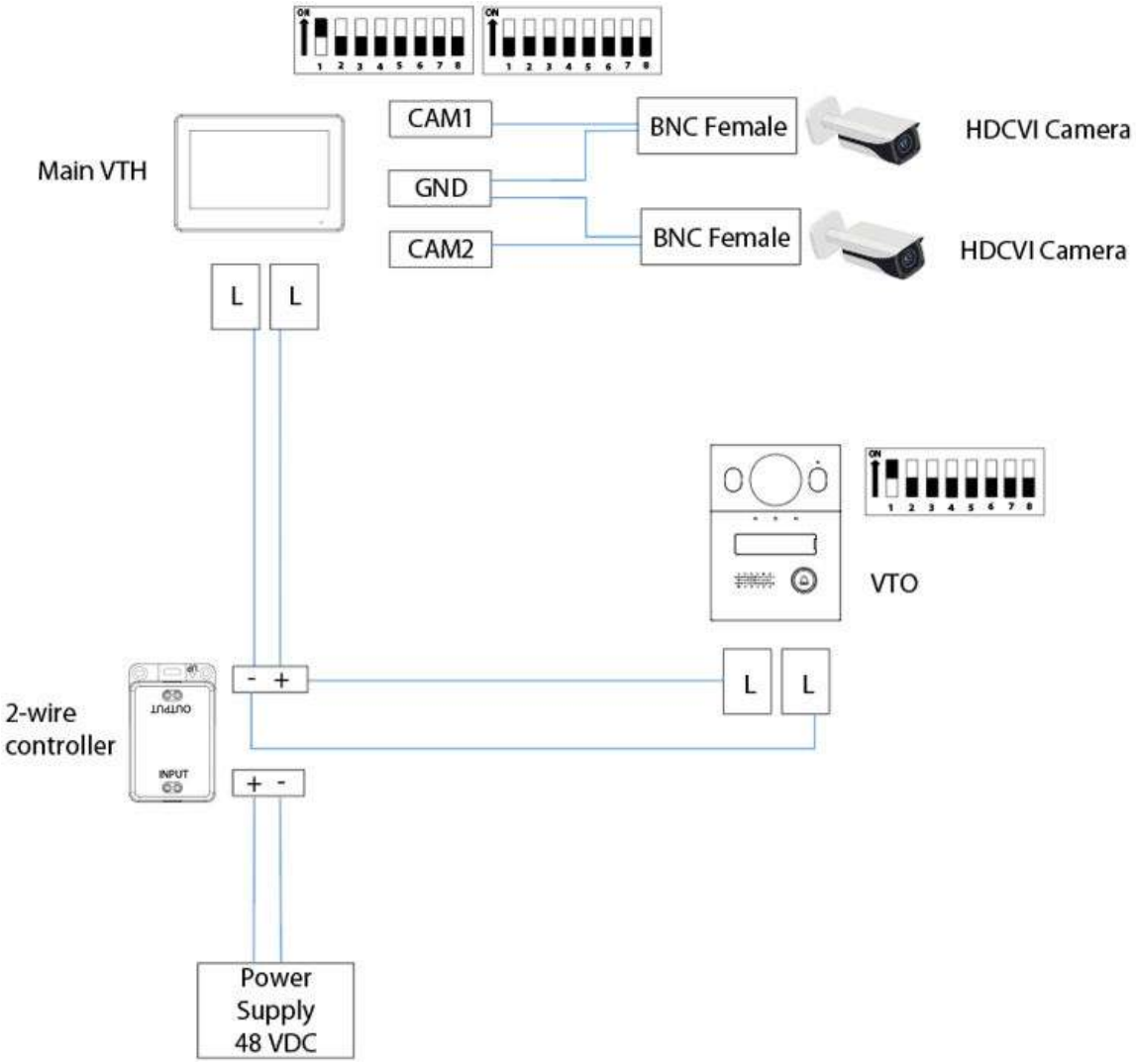
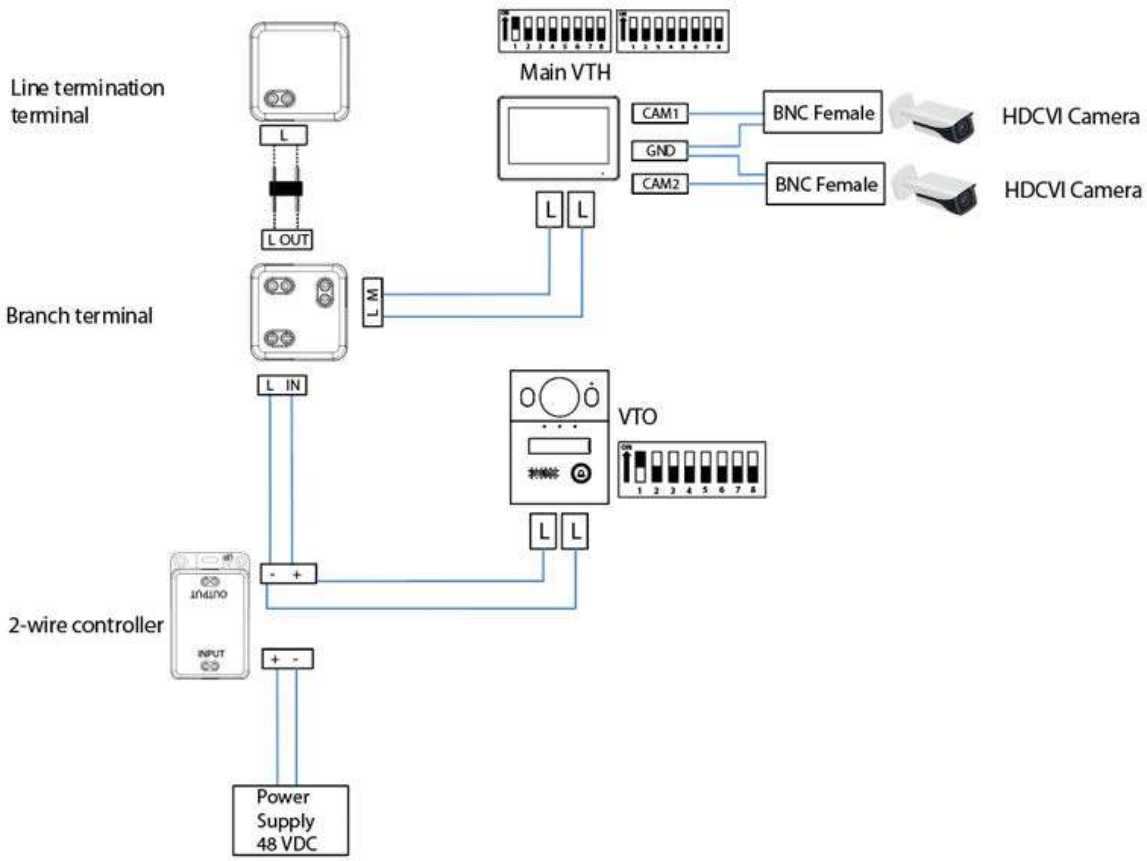
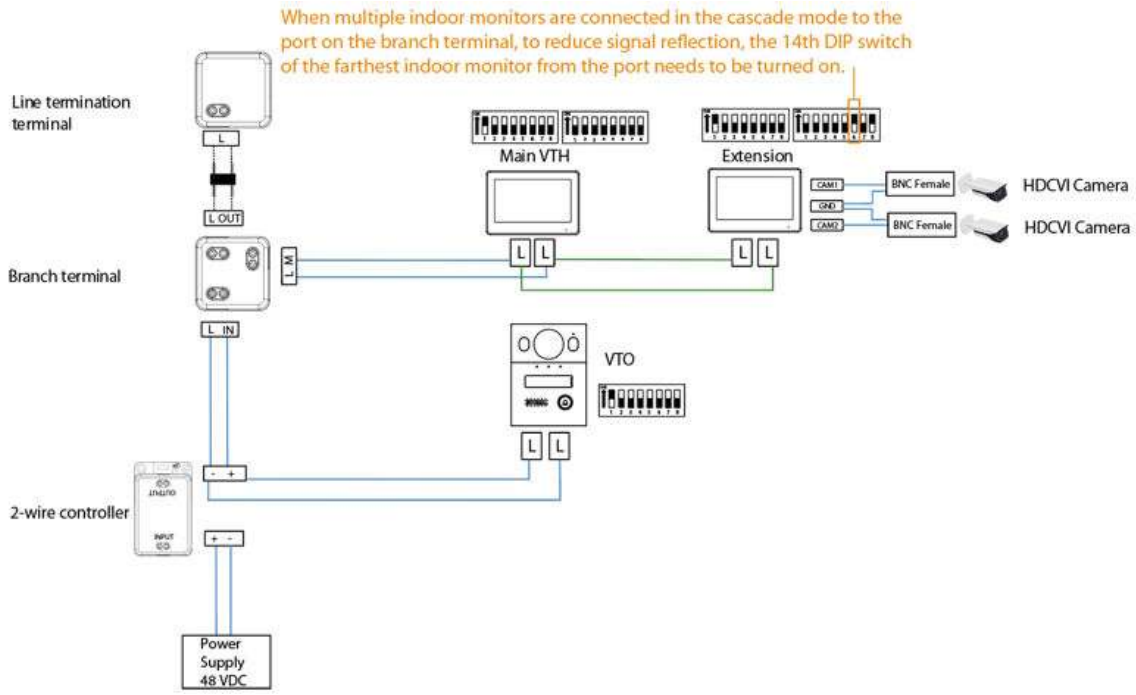


Figure 2-2 Network diagram (with line termination terminal and branch terminal)



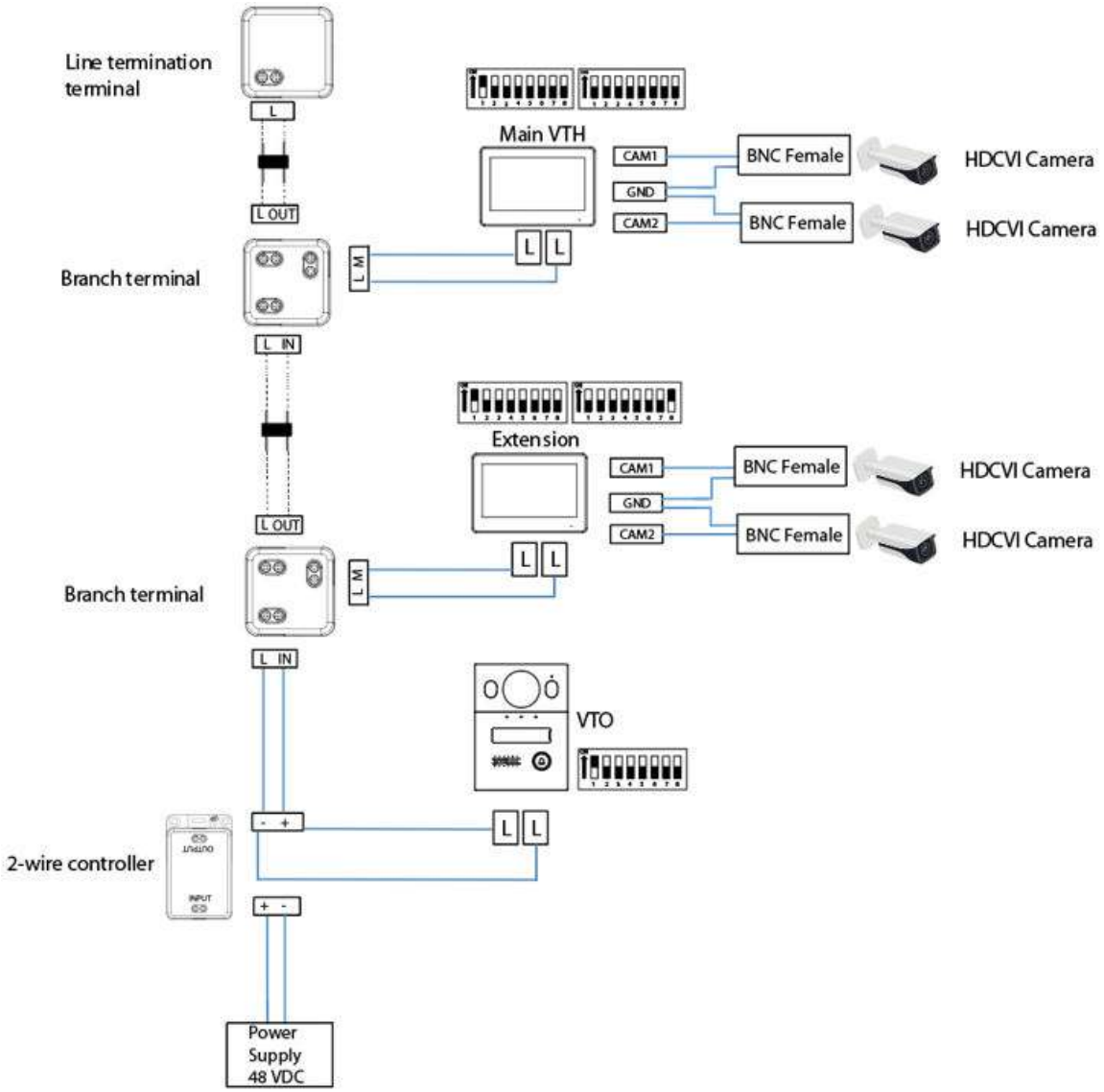
Wiring 1 VTO and 2 VTHs (Cascade Connection)

Figure 2-3 Network diagram



Wiring 1 VTO and 2 VTHs (Parallel Connection)

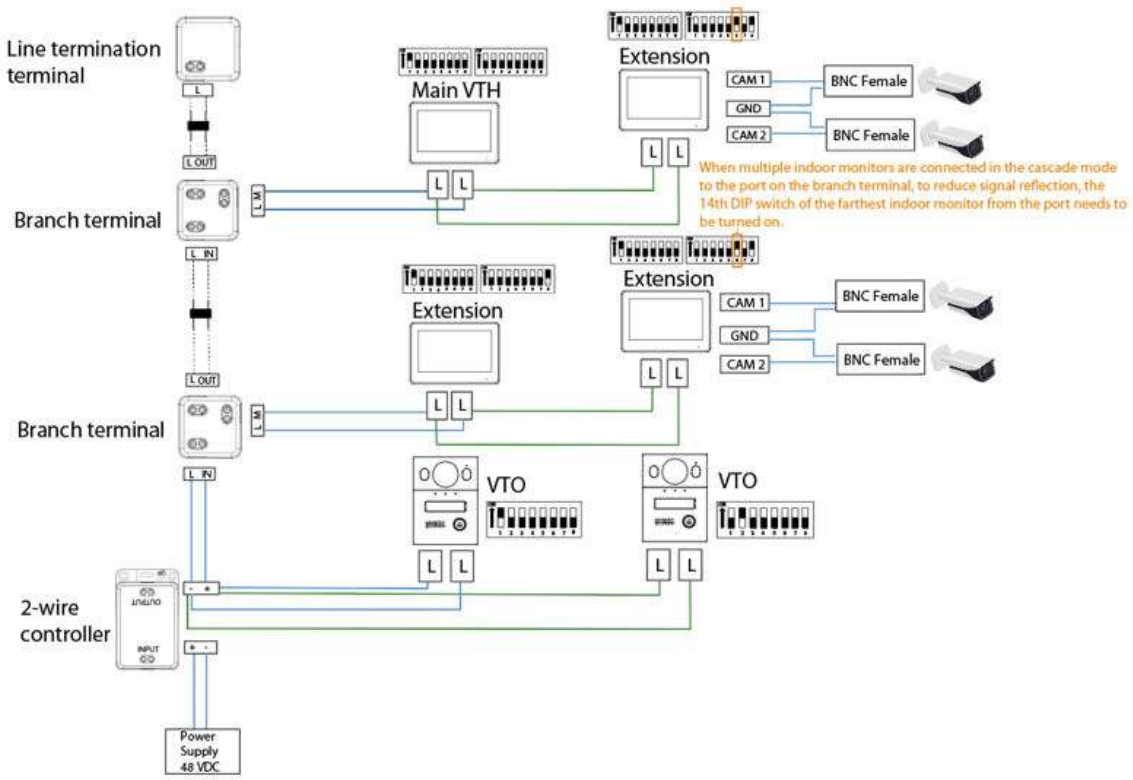
Figure 2-4 Network diagram



Wiring 2 VTOs and 4 VTHs

The DIP number of each VTO cannot be the same. Otherwise, the connection might fail.

Figure 2-5 Network diagram



Wiring Distance Between the VTH and VTO

- It is recommended that the distance between the line termination terminal and the 2-wire controller do not exceed 3 m.
- Max distance (A) refers to the distance between the VTH and the VTO.
- Max distance (B) refers to the distance between the 2-wire controller and the VTH.

Figure 2-6 Max distance

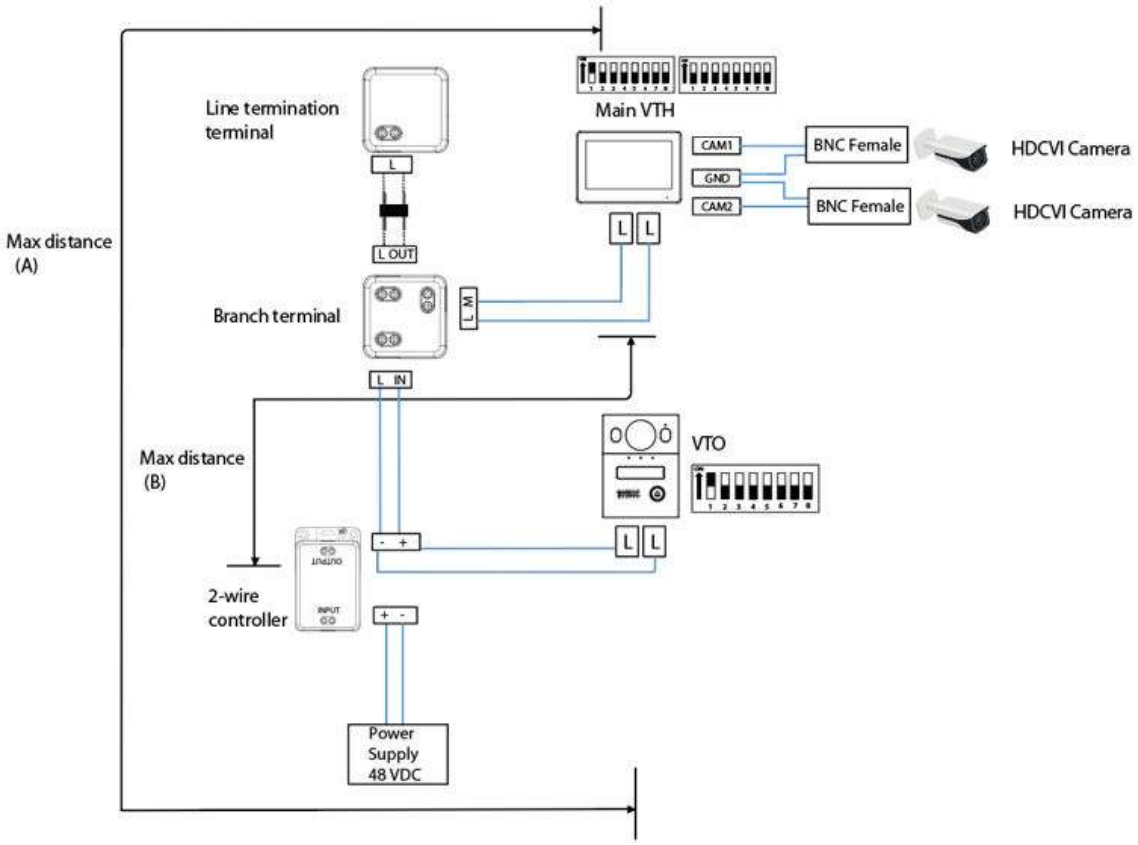


Table 2-1 Wiring distance

RVV Cable	AWG	Max. Distance (A)	Max. Distance (B)	Max. Quantity of Terminals
2 × 0.5 mm² (Recommend)	20	180 m	100 m	6
2 × 1.5 mm²	15	180 m	100 m	6

Table 2-2 Wiring distance

RVVP Cable	AWG	Max. Distance (A)	Max. Distance (B)	Max. Quantity of Terminals
2 × 0.5 mm²	20	150 m	100 m	6

Table 2-3 Wiring distance

Network Cable	AWG	Max. Distance (A)	Max. Distance (B)	Max. Quantity of Terminals
Cat5e Single Pair	24	100 m	35 m	6
Cat5e Single Pair	24	100 m	50 m	4

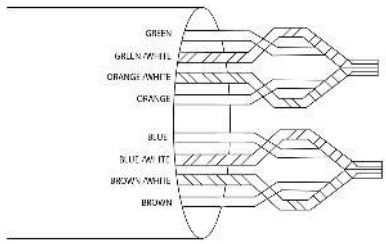
Network Cable	AWG	Max. Distance (A)	Max. Distance (B)	Max. Quantity of Terminals
Multi Pair Cable 	24	200 m	100 m	6

Table 2-4 Wiring distance

Telephone Wire	AWG	Max. Distance (A)	Max. Distance (B)	Max. Quantity of Terminals
Telephone Wire	24	20 m	20 m	2

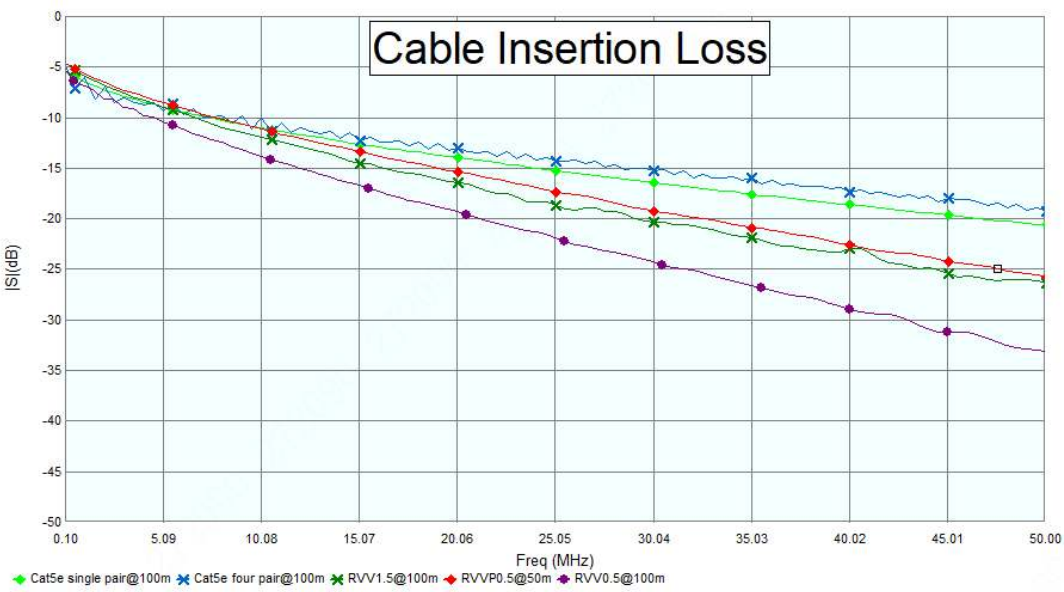
Cable Insertion Loss

Insertion loss refers to the situation of sending a signal from one end of the cable and receiving the signal at the other end of the cable.

The calculation of cable insertion loss is as follows: Insertion Loss = 20 × Log (signal received/signal sent)

The cable insertion loss followed is collected from the laboratory environment, and is for reference only. The actual data might differ from that collected in the test environment.

Figure 2-7 Cable insertion loss



2.2 Network Diagram for Apartment Scenario

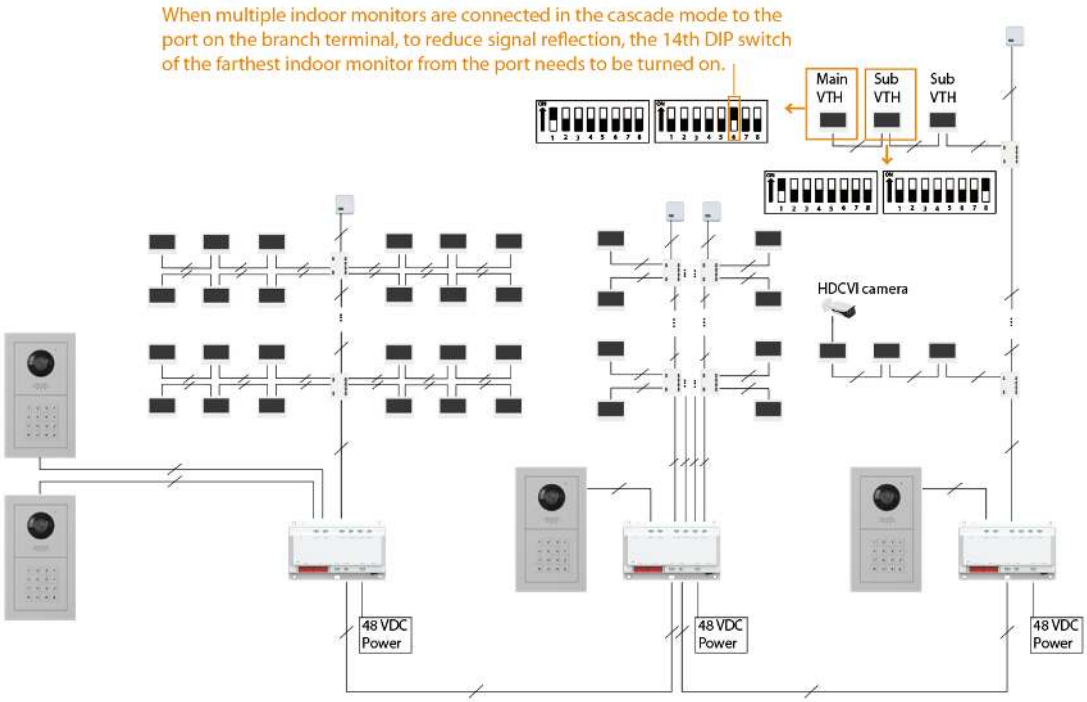
When multiple VTHs are connected in the cascade mode to the port on the branch terminal, to reduce signal reflection, the 14th DIP switch of the farthest VTH from the port needs to be turned on.

Refer to the following image to configure the DIP switch of the device in the cascade. The DIP switch of ID should be configured according to the actual situation.

- The power supply of HDCVI camera cannot be grounded.
- The product appearance is for reference only.

Network Diagram

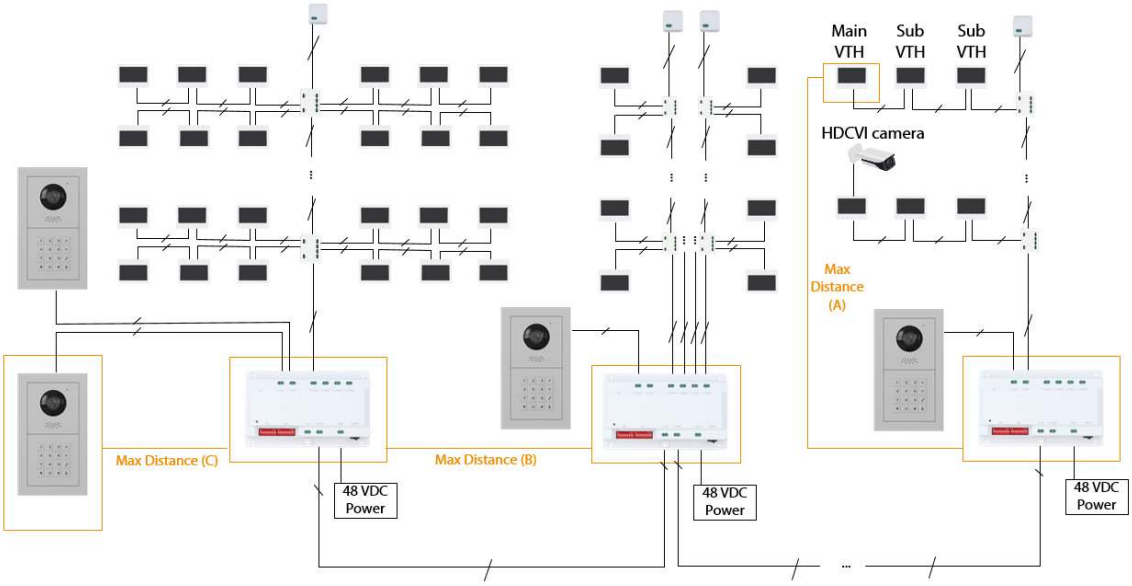
Figure 2-8 Network diagram



Wiring Distance between the Controller, VTH and the VTO

- Max distance (A) refers to the distance between the 2-wire controller and the VTH. A≤100 m.
- Max distance (B) refers to the distance between the cascading 2-wire controllers. B≤100 m.
- Max distance (C) refers to the distance between the 2-wire controller and the VTO. C≤100 m.
- The number of cascading controllers must be less than or equal to 10.
- For systems with multiple VTHs in a cascade, the number of devices must be less than or equal to 10 in each branch.

Figure 2-9 Max distance



Network capacity for VTH

The capacity for the VTH indicates the maximum number of VTHs that can be connected to one VTH port on the 2-wire controller.

Each controller can connect up to 22 VTHs with Wi-Fi function or up to 100 VTHs without Wi-Fi function.

- The 2-wire VTHs with the Wi-Fi function can work at the same time. The number of 2-wire VTHs without the Wi-Fi function that work at the same time is 5% of the maximum capacity according to different cable specifications and distances.
- The capacity values are based on the default settings for voice and screen brightness, and standard cables that are mentioned in the following table.
- In the network, if you want to replace the VTH with Wi-Fi function to the VTH without Wi-Fi function, the conversion ratio is 1:8.

  For example, if you want to reduce 1 VTH with Wi-Fi function in the network, you can connect to 8 VTHs without Wi-Fi function.

  The maximum number of VTHs with Wi-Fi function cannot exceed 22.

  The maximum number of VTHs without Wi-Fi function cannot exceed 100.

Table 2-5 Network capacity for VTH (240 W power supply as an example)

Cable Type	Cable Specification	AWG	Device Type	A=0–25 m	A=26–50 m	A=51–75 m	A=76–100 m
Regular cable	RVV 2 × 1.5 mm² (Recommend)	AWG 15	With Wi-Fi	22	22	22	17
			Without Wi-Fi	100	100	100	100
	RVV 2 × 1 mm²	AWG 17	With Wi-Fi	22	22	18	13

Cable Type	Cable Specification	AWG	Device Type	A=0–25 m	A=26–50 m	A=51–75 m	A=76–100 m
			Without Wi-Fi	100	100	100	100
	RVV 2 × 0.5 mm^2	AWG 20	With Wi-Fi	22	17	11	8
			Without Wi-Fi	100	100	91	68
Network cable	Double-pair network cable	AWG 21	With Wi-Fi	22	14	9	7
			Without Wi-Fi	100	100	75	56
	Single-pair network cable	AWG 24	With Wi-Fi	14	7	4	3
			Without Wi-Fi	100	56	37	28

Network capacity for 2-wire controller

The capacity for the 2-wire controller indicates the maximum number of controllers that can be connected to one corresponding port on the controller.

The capacity values are based on standard cables that are mentioned in the following table.

Table 2-6 Network capacity for the controller

Cable Type	Cable Specification	AWG	B=0–100 m
Regular cable	RVV 2 × 1.5 mm^2	AWG 15	8
	RVV 2 × 1 mm^2	AWG 17	10
	RVV 2 × 0.5 mm^2 (Recommend)	AWG 20	10
Network cable	Double-pair network cable	AWG 21	10
	Single-pair network cable	AWG 24	10

Network capacity for VTO

The capacity for the VTO indicates the maximum number of VTOs that can be connected to one 2-wire controller.

Up to 2 VTOs can be connected to one 2-wire controller.

The capacity values are based on standard cables that are mentioned in the following table.

Table 2-7 Network capacity for the VTO

Cable Type	Cable Specification	AWG	C=0–25 m	C=26–50 m	C=51–75 m	C=76–100 m
Regular cable	RVV 2 × 1.5 mm^2 (Recommend)	AWG 15	2	2	2	2
	RVV 2 × 1 mm^2	AWG 17	2	2	2	2
	RVV 2 × 0.5 mm^2	AWG 20	2	2	2	2

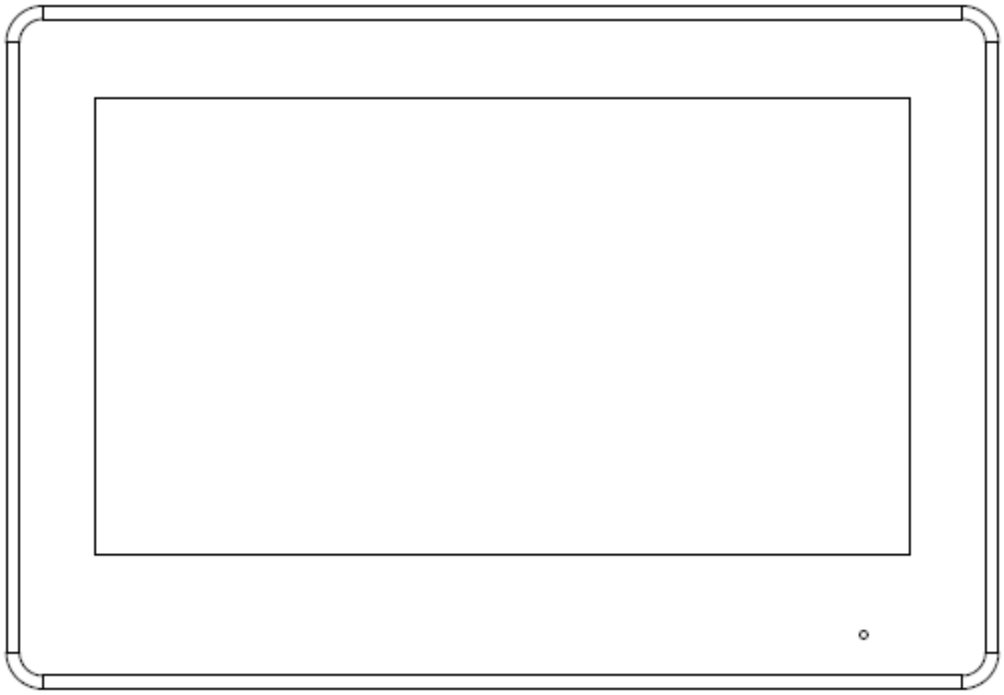
Cable Type	Cable Specification	AWG	C=0–25 m	C=26–50 m	C=51–75 m	C=76–100 m
Network cable	Double-pair network cable	AWG 21	2	2	2	2
	Single-pair network cable	AWG 24	2	2	1	1

3 Structure

3.1 Front Panel

H series model with 7-inch screen

Figure 3-1 Front panel



H series model with 4.3-inch screen

Figure 3-2 Front panel

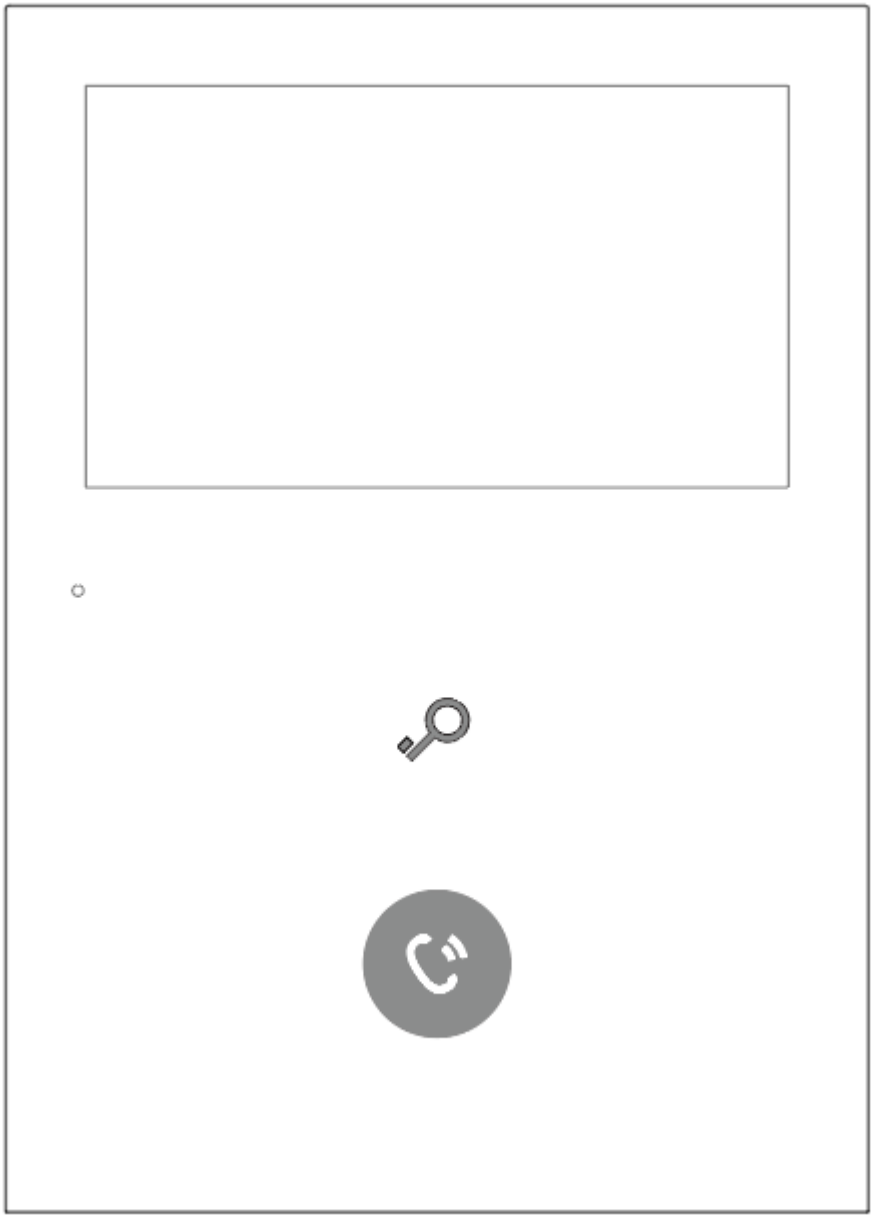
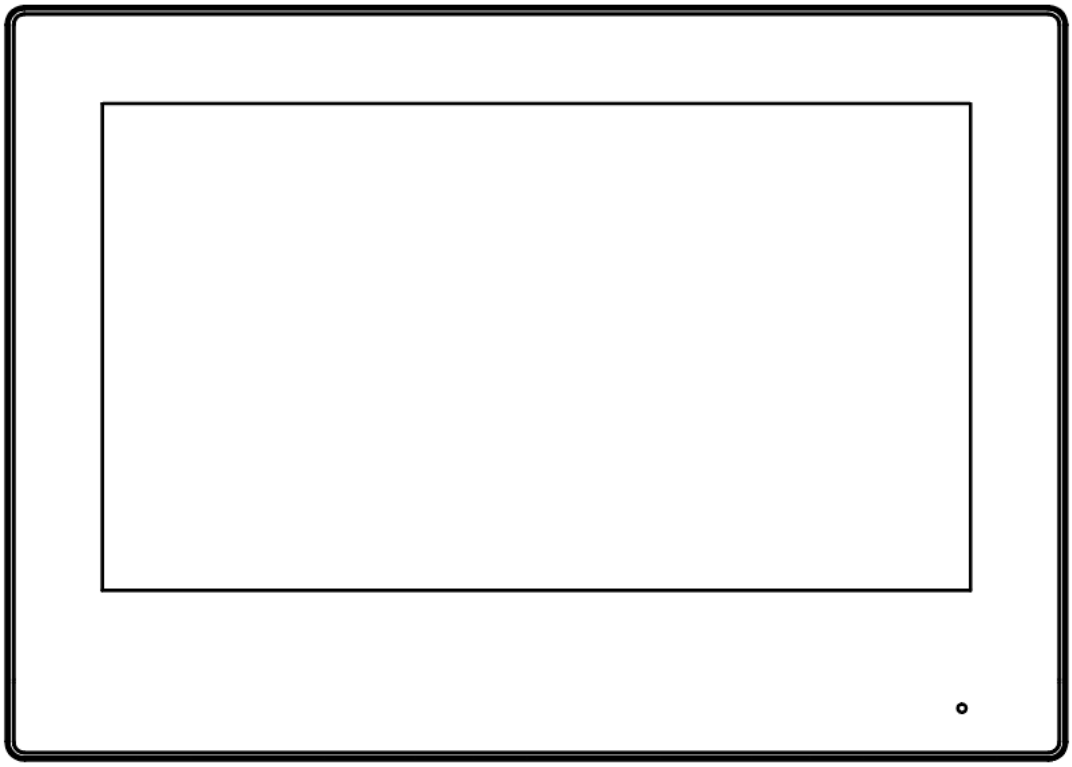


Table 3-1 Icons description

Icon	Description
	Unlock: Press to unlock the VTO when using it to make or receive a call and perform monitoring.
	• Answer the call. • End the call.

G series model with 7-inch screen

Figure 3-3 Front panel



3.2 Rear Panel

H series model with 7-inch screen

Figure 3-4 Rear panel

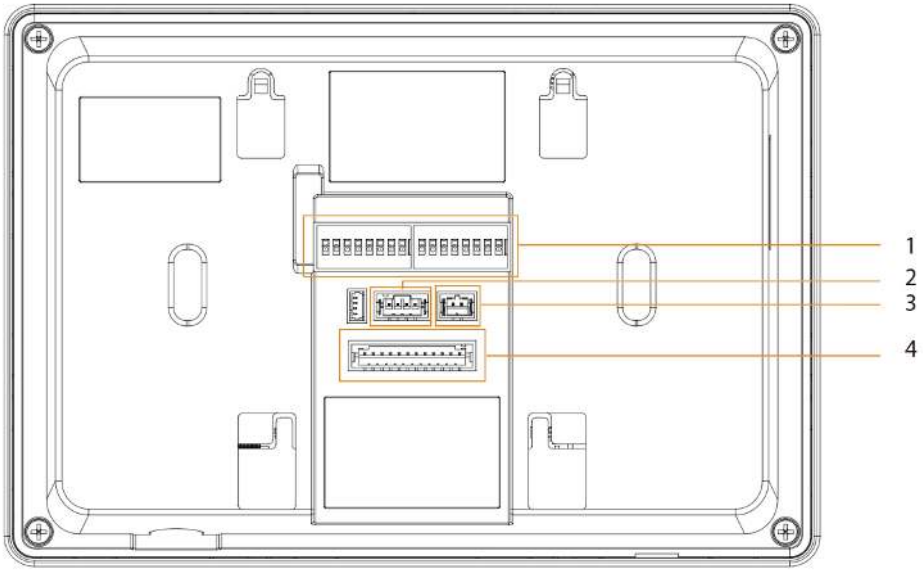


Table 3-2 Rear panel description

No.	Name	Description
1	Dual In-line Package (DIP) Switch	Manually change the position of the actuator to that are corresponding to the function that you want to program. DIP switches allow you to quickly preconfigure the VTH a variety of settings or operating modes.
2	RS-485 and power output port	Used to connect to other devices; and connect to the power supply.
3	2-wire hybrid port	—
4	Alarm port	• Used to connect to the alarm input and output devices. • Include 6 alarm input ports, 1 alarm output port and 2 camera ports.

Figure 3-5 Alarm port

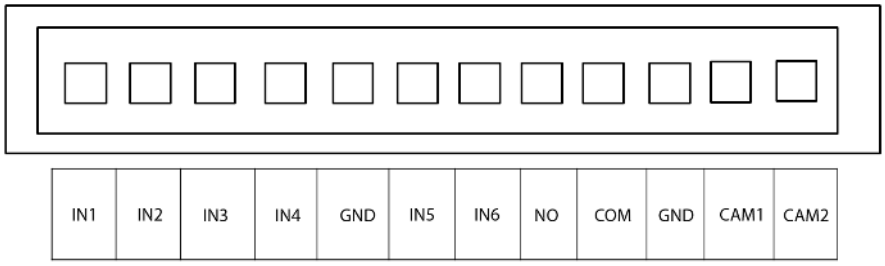
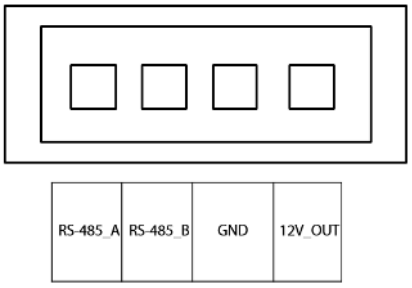


Figure 3-6 RS-485 and power output port



H series model with 4.3-inch screen

Figure 3-7 Rear panel

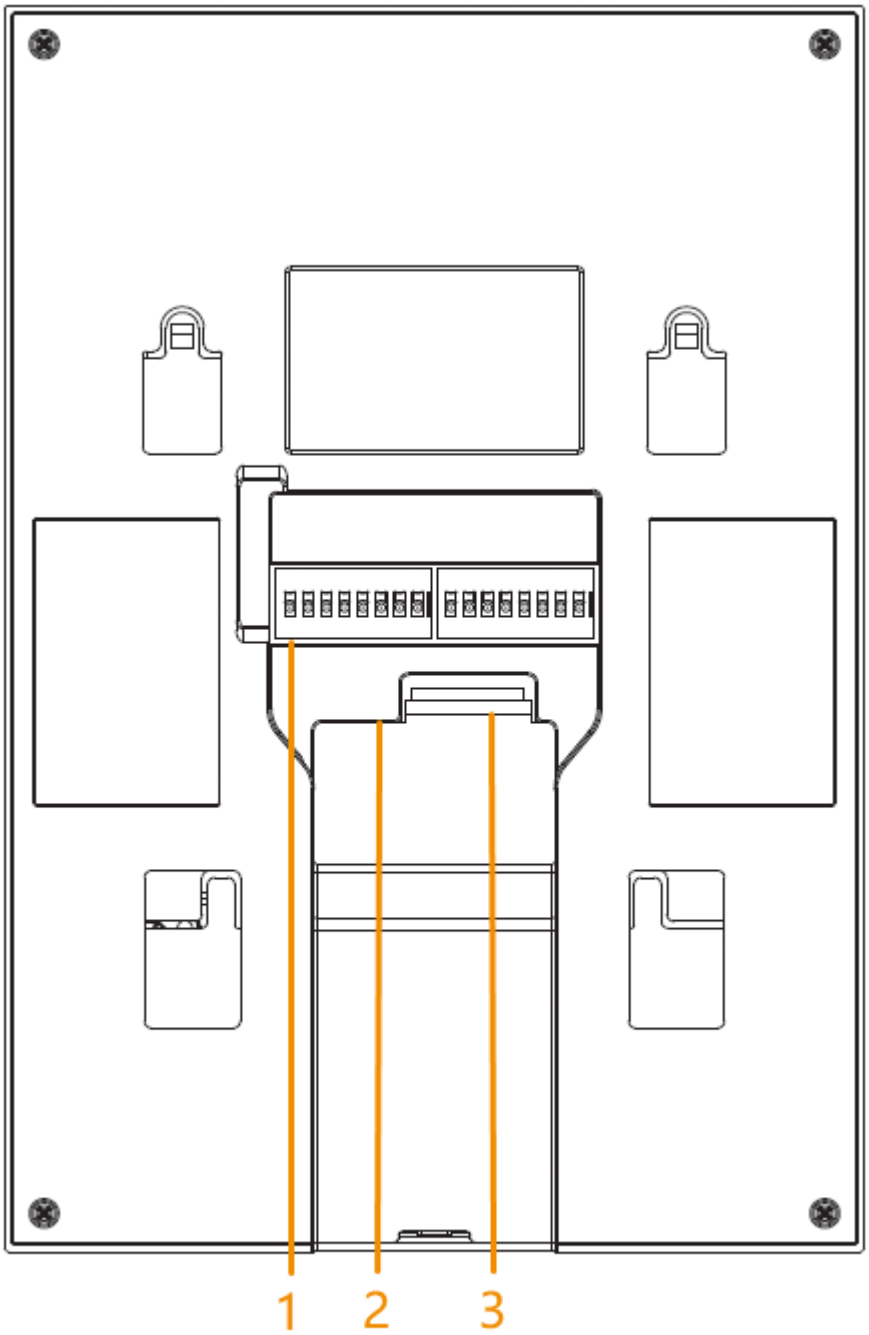
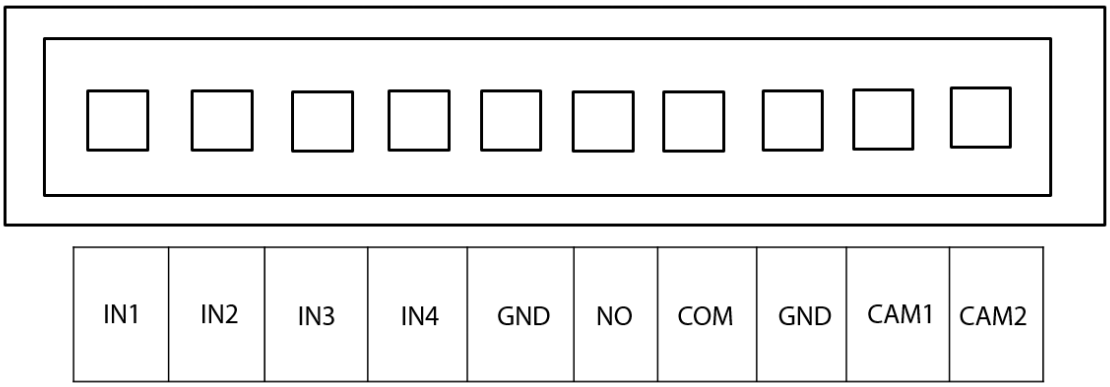


Table 3-3 Rear panel description

No.	Name	Description
1	Dual In-line Package (DIP) Switch	Manually change the position of the actuator to that corresponding to the function that you want to program. DIP switches allow you to quickly preconfigure the VTH to a variety of settings or operating modes.
2	2-wire hybrid port	—
3	Alarm port	• Connects to alarm input and output devices. • Include 4 alarm input ports, 1 alarm output port and 2 camera ports.

Figure 3-8 Alarm port



G series model with 7-inch screen

Figure 3-9 Rear panel

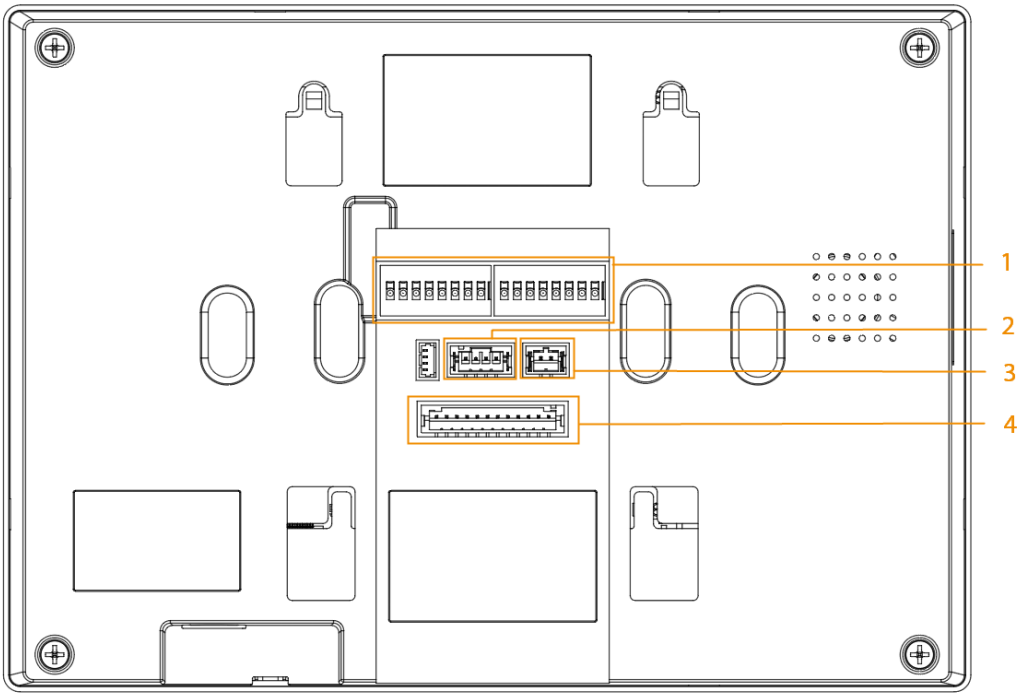


Table 3-4 Rear panel description

No.	Name	Description
1	Dual In-line Package (DIP) Switch	Manually change the position of the actuator to that are corresponding to the function that you want to program. DIP switches allow you to quickly preconfigure the VTH a variety of settings or operating modes.
2	RS-485 and power output port	Used to connect to other devices; and connect to the power supply.
3	2-wire hybrid port	—
4	Alarm port	• Used to connect to the alarm input and output devices. • Include 6 alarm input ports, 1 alarm output port and 2 camera ports.

Figure 3-10 Alarm port

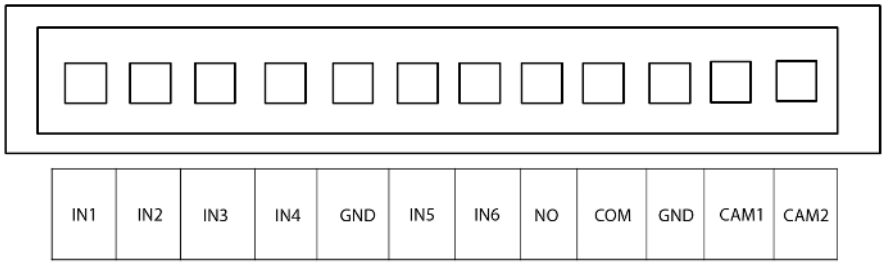
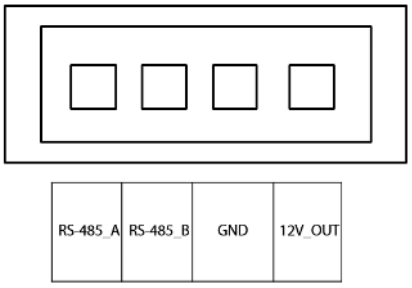


Figure 3-11 RS-485 and power output port



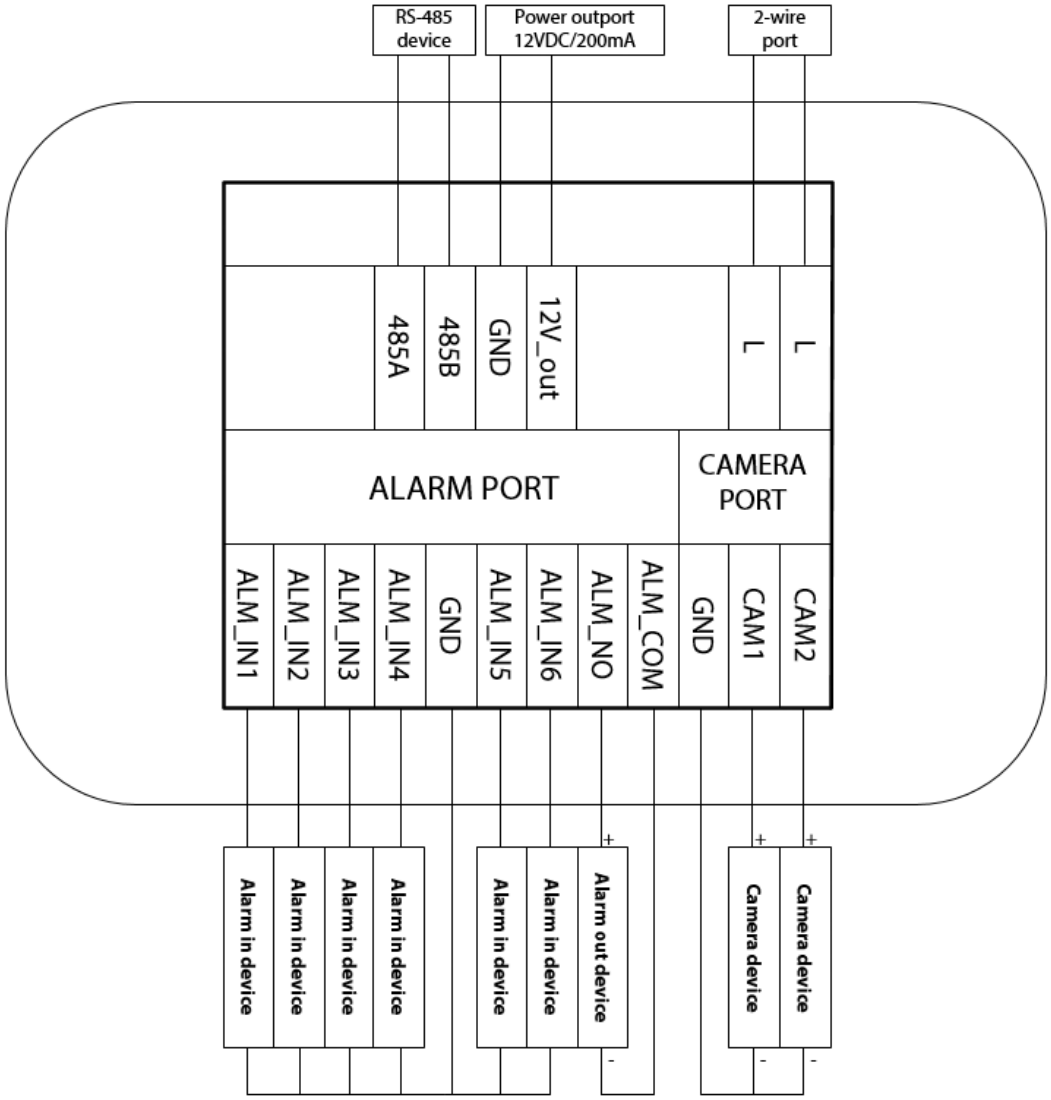
4 Installation and Wiring

This chapter introduces the wiring of the device.

- The alarm input port is connected with dry contact.
- Do not install devices in environments that have condensation, high temperatures, dust corrosive substances and direct sunlight.
- If the device behaves abnormally after you turn it on, cut off the power supply at once and unplug the network cable. Power on again after you finish resolving the issue.
- Installation should be done by professional teams. Do not disassemble or repair the device by yourself to avoid damaging the device. Contact after-sales service if you need any help.
- The recommended installation height of the device is 1.6 m from the ground.

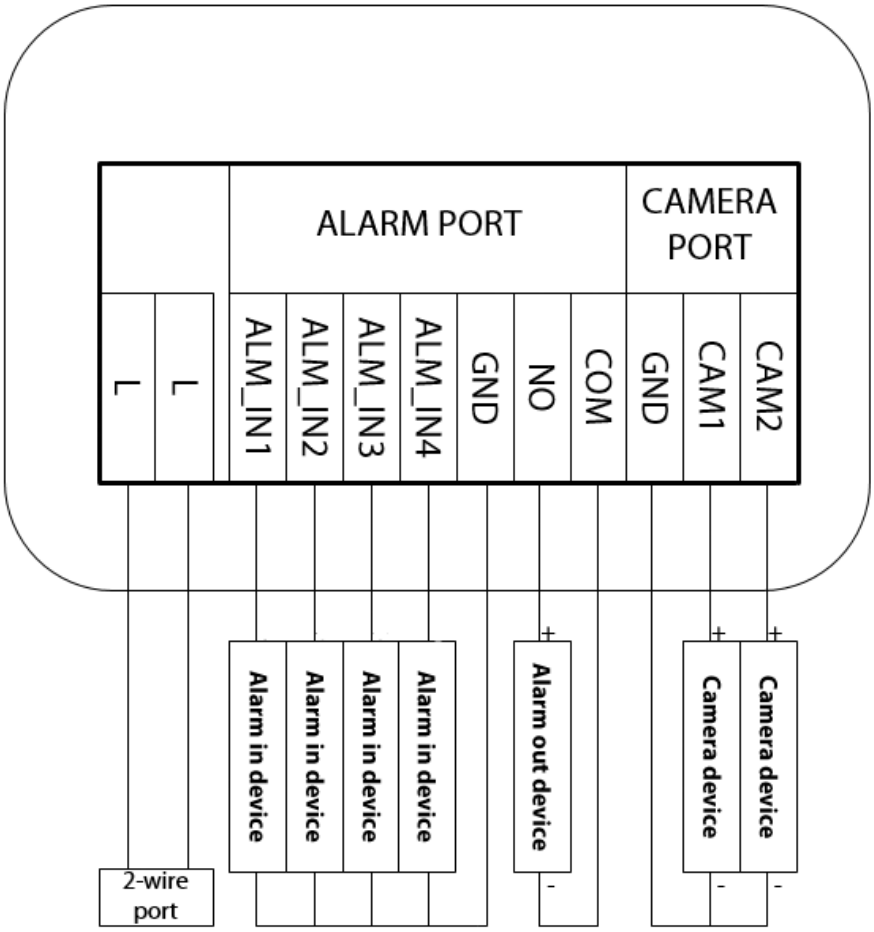
The VTH with a 7-inch screen

Figure 4-1 Port description



The VTH with a 4.3-inch screen

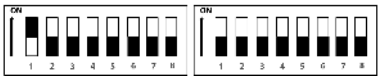
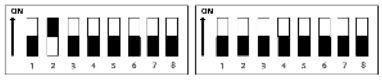
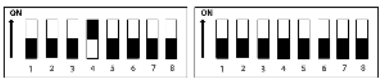
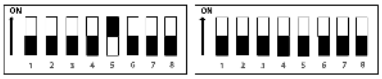
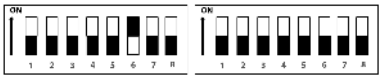
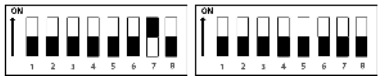
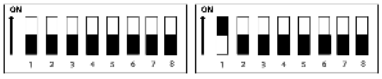
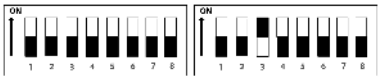
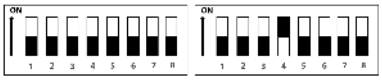
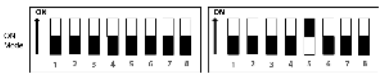
Figure 4-2 Port description

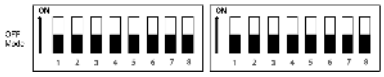
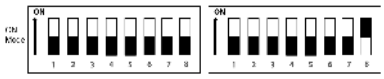


5 DIP Configuration

5.1 DIP Switch Basic Mapping Rule

Table 5-1 DIP Switch mapping relations and function

DIP Switch No.		Corresponding Address No.	Function
DIP 1		1	• Used to program the address of the VTH. • You can set a maximum of 4,094 VTH address by using the 12 DIP switches.
DIP 2		2	
DIP 3		4	
DIP 4		8	
DIP 5		16	
DIP 6		32	
DIP 7		64	
DIP 8		128	
DIP 9		256	
DIP 10		512	
DIP 11		1024	
DIP 12		2048	
DIP 13		—	**ON**: Connect to HDCVI camera through Unshielded Twisted Pair (UTP).

DIP Switch No.		Corresponding Address No.	Function
DIP 13		—	**OFF**: Connect to the HDCVI camera through the coax cable.
DIP 14		—	For systems with multiple VTHs in a cascade, you need to turn on the 14th DIP switch of the last device in the cascade to reduce the impact of signal reflection on devices.
DIP 15		—	For systems with multiple VTHs in a cascade, when the image is disrupted due to environmental or other factors, the 15th bit of the DIP switch on the last device in corresponding branch can be set as **ON**.
DIP 16		—	**ON**: Set the VTH as the extension.
DIP 16		—	**OFF**: Set the VTH as the main VTH. The main VTH and extension VTH must be connected to the same distributor (2-wire Controller).

5.2 DIP Switch Coding Rules

This section introduces how to configure the address of a VTH through the coding rules of DIP switches. By setting the switches in combination, you can get any value from 1-4,094.

1. Find the mapping relationship between the DIP switch number and the address number you plan to configure from the table.

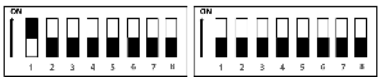
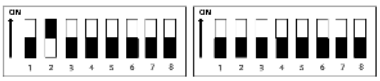
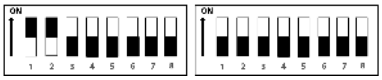
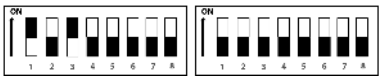
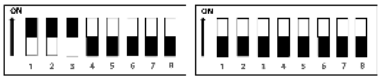
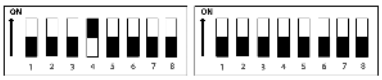
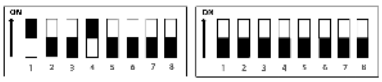
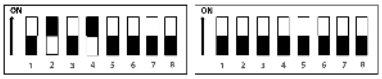
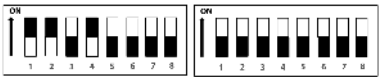
   It follows a calculation rule that combines only the numbers listed in the **Address No.** to form a new address number.

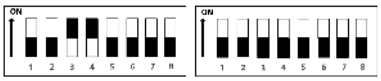
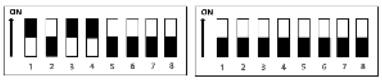
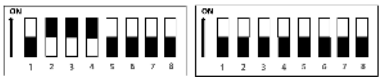
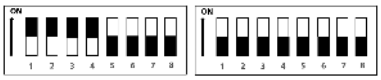
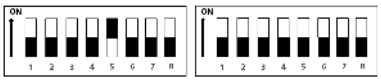
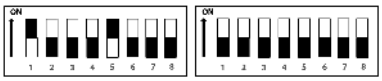
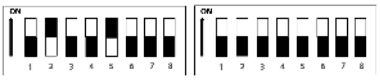
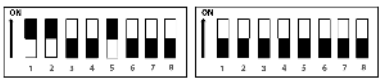
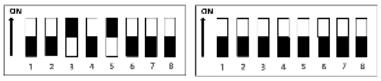
2. Manually move the actuators corresponding to the DIP switches to the **ON** status, so that the address of the VTH can be configured.

   For example, if you want to set your VTH address as 4, you need to first find the mapping relationship (DIP 3 equals to the address number of 4) in the table, and then manually move the actuator of DIP 3 to the **ON** status. If you want to set your VTH address as 3, you need to do the calculation (1+2=3; which equals to the value of DIP 1 and DIP 2 combined together in the mapping relationship), and manually move both the actuator of DIP 1 and DIP 2 to the **ON** status. If you want to set your VTH address as 133, you need to do a more complex calculation (128+4+1=133, which equals to the value of DIP 8, DIP 3 and DIP 1 combined together in the mapping relationship), and then manually move the actuator of DIP 8, DIP 3 and DIP 1 to the **ON** status.

   Here is the list of commonly used VTH addresses (1-20) and their corresponding DIP switch number combinations.

Table 5-2 Common VTH addresses (1-20) and DIP switch numbers

VTH Address	DIP Switch Combination	Coding Rule
1		DIP 1
2		DIP 2
3		DIP 2+ DIP 1
4		DIP 3
5		DIP 3 + DIP 1
6		DIP 2 + DIP 3
7		DIP 3 + DIP 2 + DIP 1
8		DIP 4
9		DIP 4 + DIP 1
10		DIP 4 + DIP 2
11		DIP 4 + DIP 2+ DIP 1

VTH Address	DIP Switch Combination	Coding Rule
12		DIP 4 + DIP 3
13		DIP 4 + DIP 3+ DIP 1
14		DIP 4 + DIP 3+ DIP 2
15		DIP 4 + DIP 3 + DIP 2+DIP 1
16		DIP 5
17		DIP 5 + DIP 1
18		DIP 5 + DIP 2
19		DIP 5 + DIP 2+ DIP 1
20		DIP 5 + DIP 3

6 VTH Operations

6.1 Home Screen

Figure 6-1 Home screen

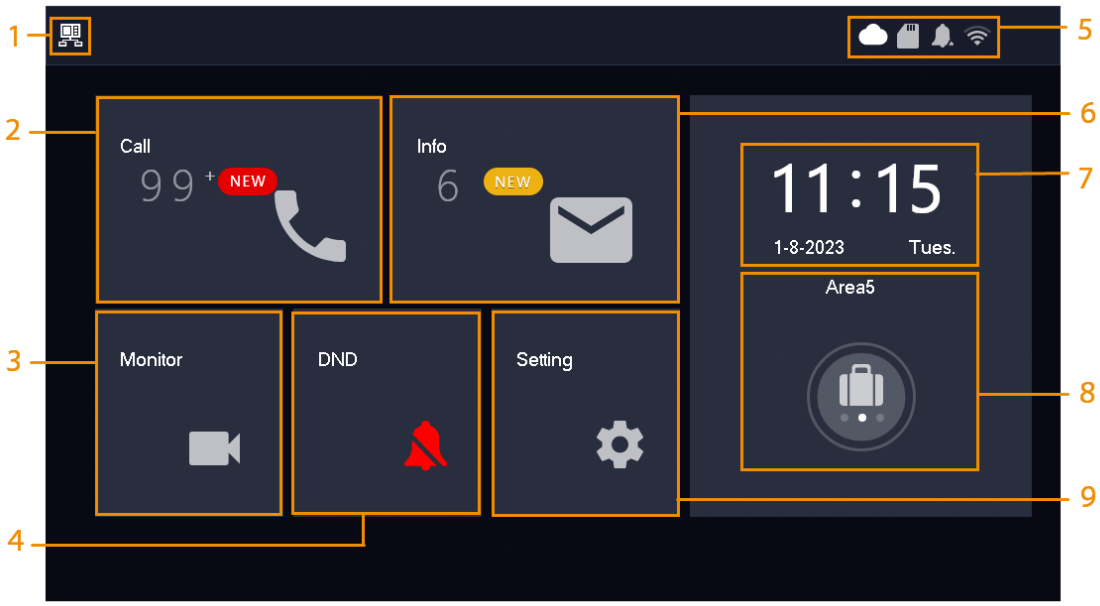


Table 6-1 Home screen description

No.	Name	Description
1	Main VTH	If there is no icon, this is a sub VTH.
2	Call	Call other VTOs, or DMSS users.
3	Monitor	Monitor VTOs and HDCVI cameras.
4	DND	Enable to not receive any calls.

No.	Name	Description
5	Icons	● : Displays the network connection status. ◇ : The icon appears when the device does not meet one of the following standards. The cloud function is enabled, or the VTH is connected to a Wi-Fi that allows it to visit external networks. ◇ : The icon appears only when the cloud function is enabled, and the VTH has connected to a Wi-Fi that allows the device to visit external networks. ● : An SD card is inserted. ● : The DND is enabled. ● : The Wi-Fi is connected. The Wi-Fi function is available on select models.
6	Info	● View, delete and clear security alarm information. ● When an SD card is inserted into the VTH, 3 tabs will be displayed: **Alarm**, **Guest MSG**, and **Guest Video**. You can view, delete and clear the messages. ● When the VTH has an SD card, the **Video Pic** tab will be displayed. You can view, delete and clear the videos and pictures.
7	Time and Date	—
8	Arm/Disarm	● Display unread alarm information. ● Tap to select an arm mode: **Sleep**, **Away**, **Home** or **Custom**.
9	Setting	Tap the icon to configure the settings for ring, alarm, arm mode, general, WLAN and password.

6.2 Call

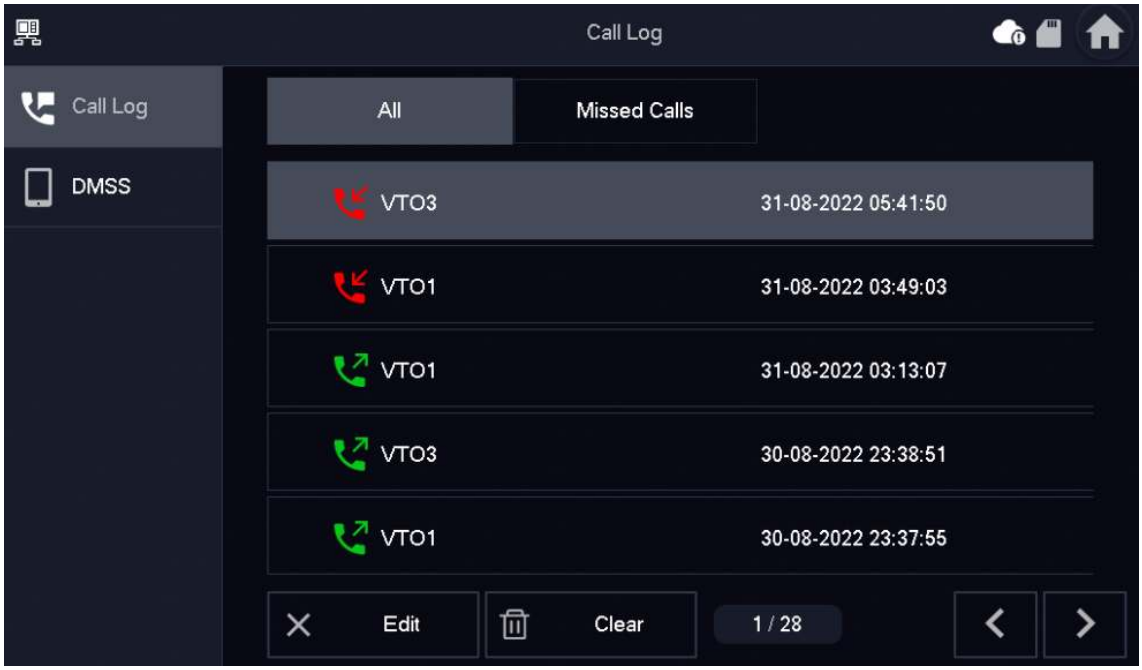
Manage calls and view call records.

6.2.1 Call Logs

Select **Call** > **Call Log** to view and manage call records.

- **All**: All of the call records.
- **Missed Calls**: Calls that were missed.

Figure 6-2 Call log



- **Call back** : Tap a call record to call back.
- **Delete** : Tap **Edit**, and then tap **Delete** to delete a record.
- **Clear** : Clear all record from the current tab (**All** or **Missed Calls**).

If storage is full, the earliest records will be overwritten. Back up the records.

Figure 6-3 Calling VTO (the device with a 7-inch screen)

Figure 6-4 Calling VTO (the device with a 4.3-inch screen)

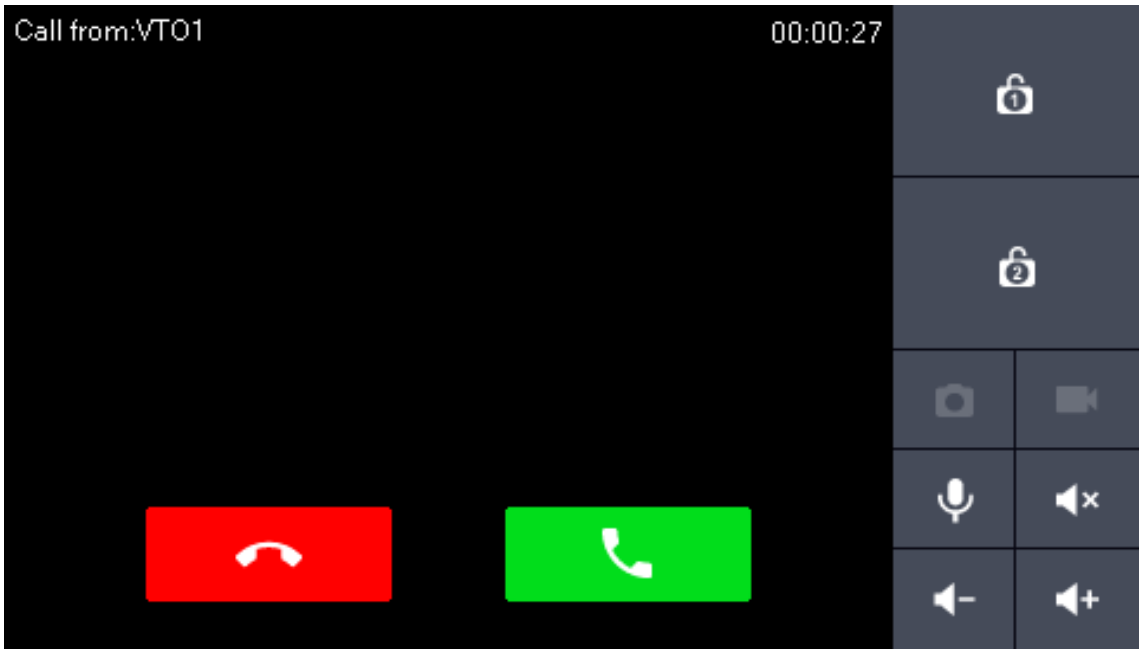


Table 6-2 Icon description

Icon	Description
	Remotely unlock the door where the VTO is located.

Icon	Description
	Take snapshots. An SD card is needed to use this function. Otherwise, the icon will be gray.
	Tap to start recording. It will stop when the call ends or when you tap . If the SD card is full, the earliest videos will be overwritten. An SD card is needed to use this function. Otherwise, the icon will be grey.
	Tap to mute the sound from the VTH.
/ /	• : Mute the sound. • : Lower the volume. • : Increase the volume.
/	Receive and end calls.

6.2.2 VTH Calling DMSS

Make calls to the DMSS app.

To call DMSS, you must have added the VTH to the DMSS account that you are using. For details, see "6.5.6.2.1 Creating Network Password".

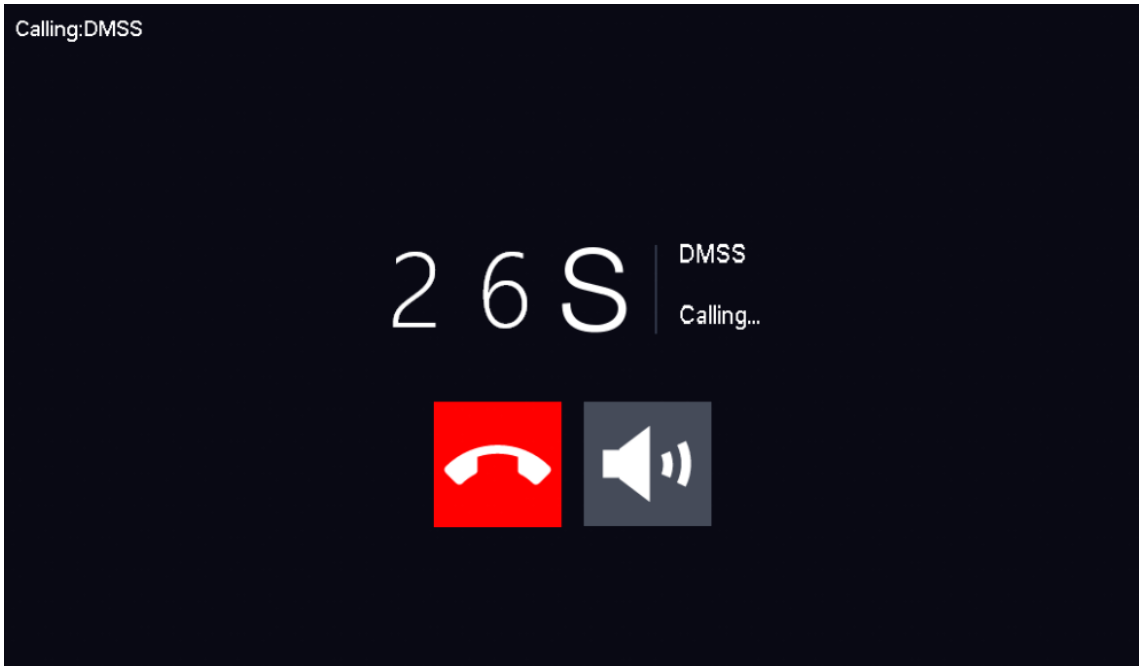
Procedure

Step 1 Select **Call** > **DMSS**.

Figure 6-5 DMSS

Step 2 Tap to call the DMSS app account that the VTH has bonded with.

Figure 6-6 Calling DMSS



- : Hang up the call.
- : Mute the call.

6.3 Information

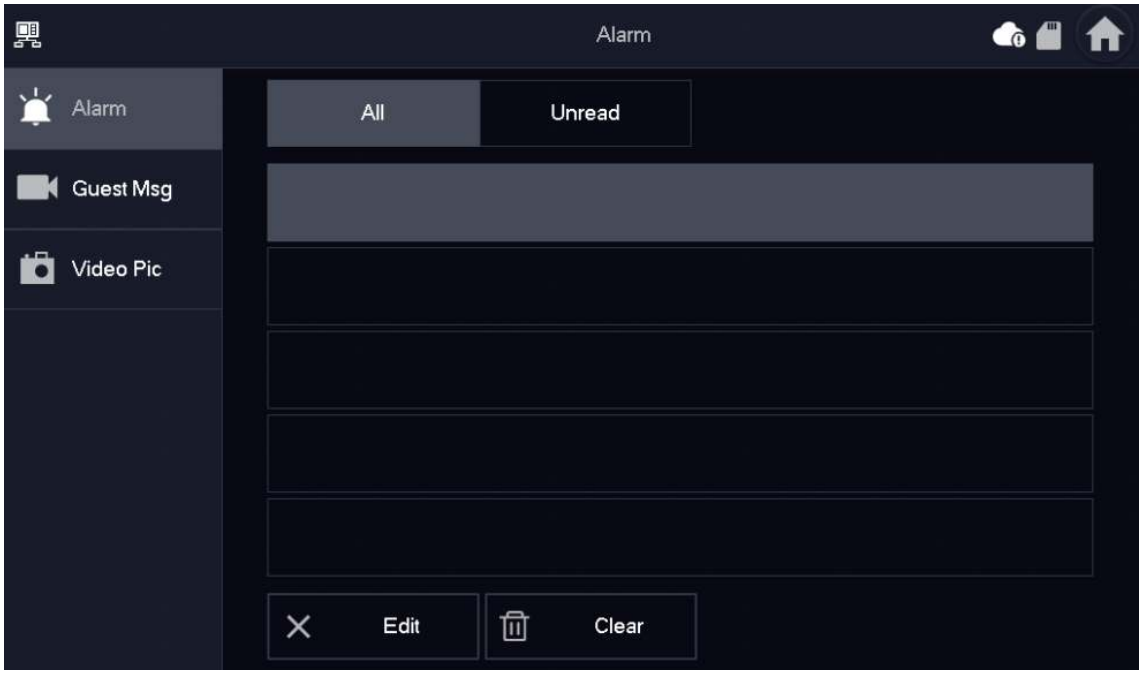
View and manage the information, including alarm records, guest messages and video pictures.

6.3.1 Alarm information

When an alarm is triggered, there will be 15 s alarm sound. The alarm information will be uploaded to the alarm record screen.

Select **Info** > **Alarm**, and then you can view and manage all alarm records.

Figure 6-7 Alarm



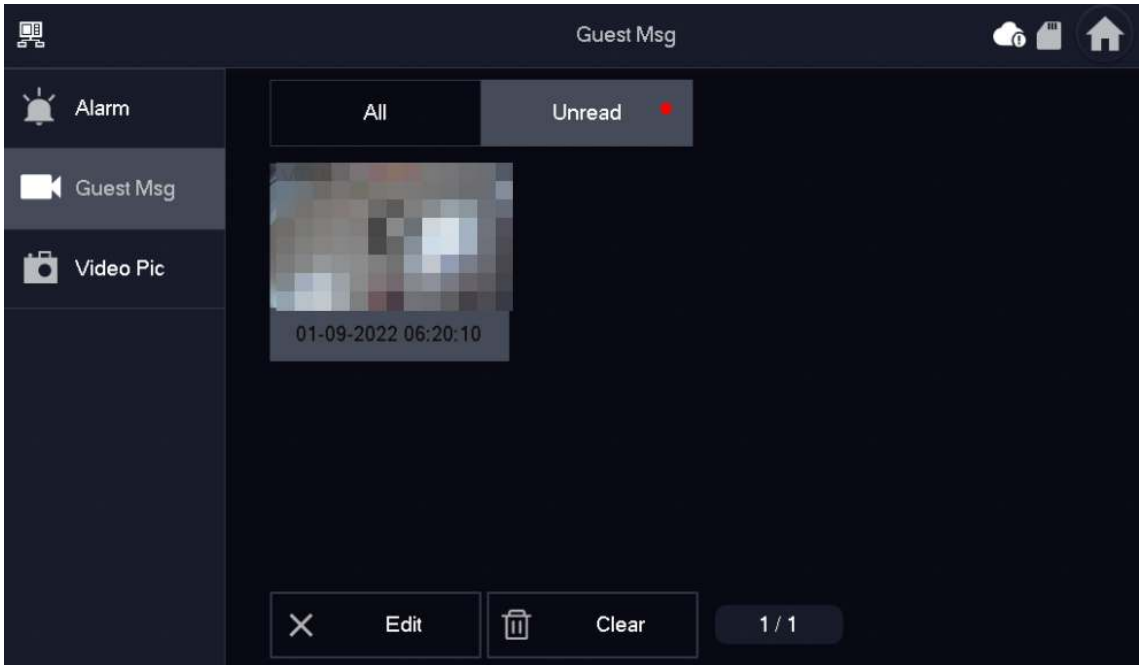
- **Edit**: Edit the alarm records you selected.
- **Delete**: Delete the alarm records you selected.

  After tapping **Edit** and selecting the records, the icon becomes **Del**, and then you can delete the selected the records.
- **Clear**: Delete all of the alarm records.

6.3.2 Guest Message

Select **Info** > **Guest MSG**, and then you can view and manage all messages.

Figure 6-8 Guest messages



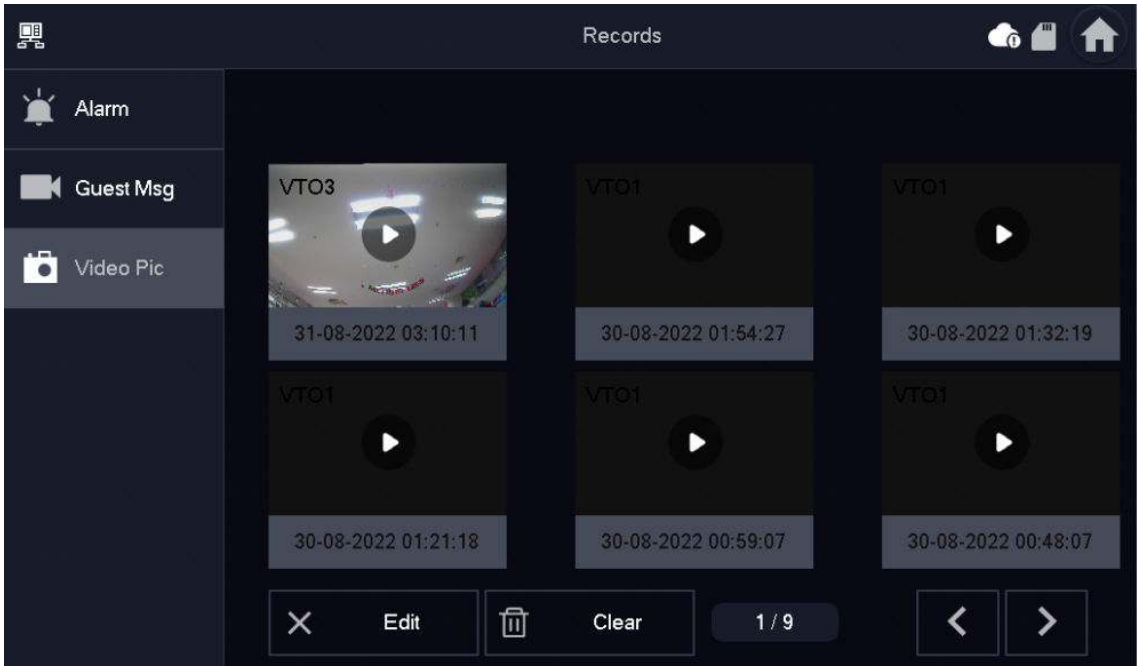
- **Edit**: Edit the guest message records you selected.
- **Delete**: Delete the guest message records you selected.

  After tapping **Edit** and selecting the records, the icon becomes **Del**, and then you can delete the selected the records.
- **Clear**: Delete all of the guest message records.

6.3.3 Video Pictures

Select **Info** > **Video Pic**, and then you can view and manage the pictures and videos.

Figure 6-9 Video pictures



- **Edit**: Edit the video picture records you selected.
- **Delete**: Delete the video picture records you selected.

  After tapping **Edit** and selecting the records, the icon becomes **Del**, and then you can delete the selected the records.
- **Clear**: Delete all the video picture records.

6.4 Monitoring

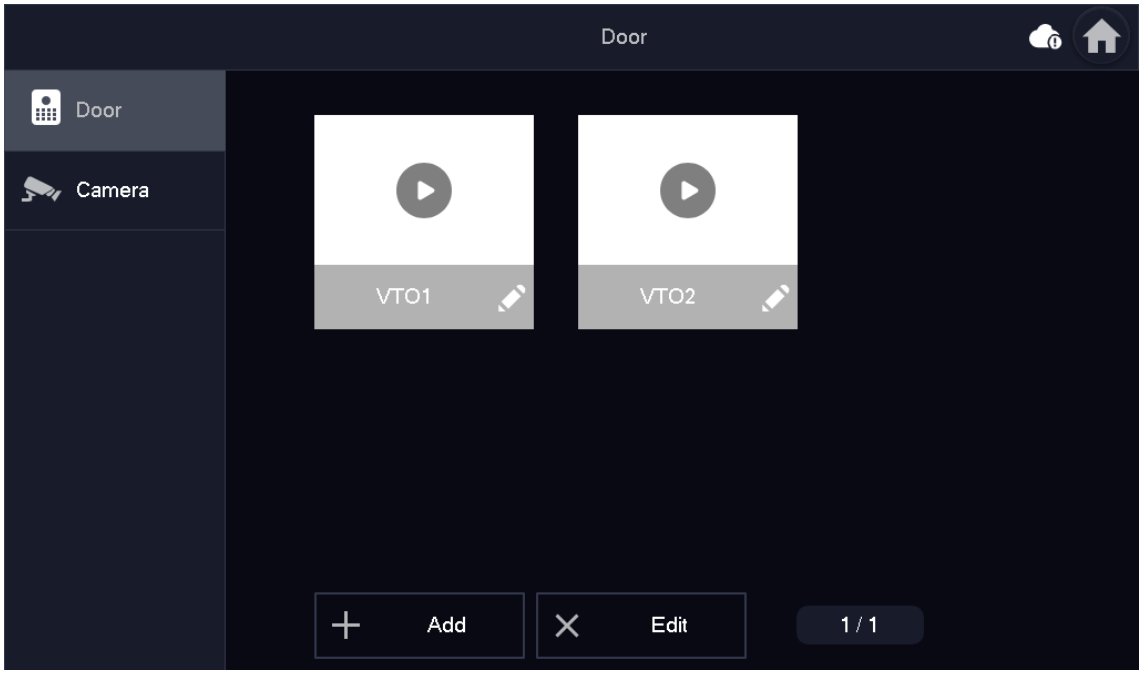
View the images recorded from the VTO or HDCVI camera.

6.4.1 Monitoring VTO

Procedure

Step 1 Select **Monitor** > **Door**.

Figure 6-10 VTO



Step 2 Tap to monitor the VTO you selected.

Figure 6-11 Monitoring VTO (the device with a 7-inch screen)

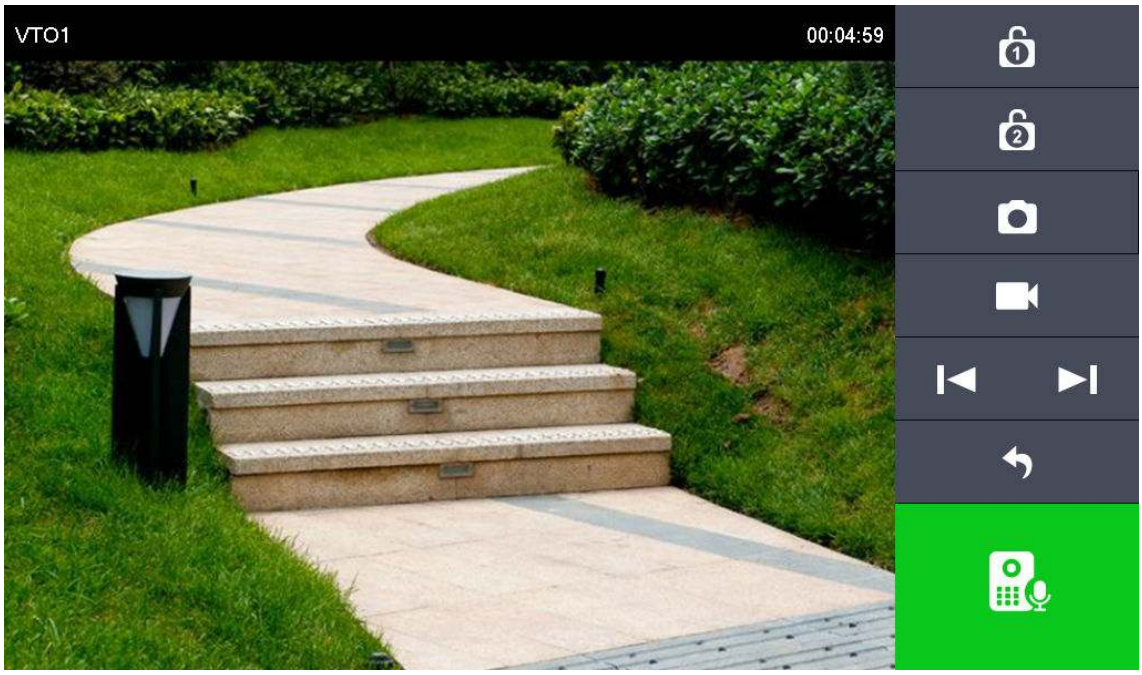


Figure 6-12 Monitoring VTO (the device with a 4.3-inch screen)

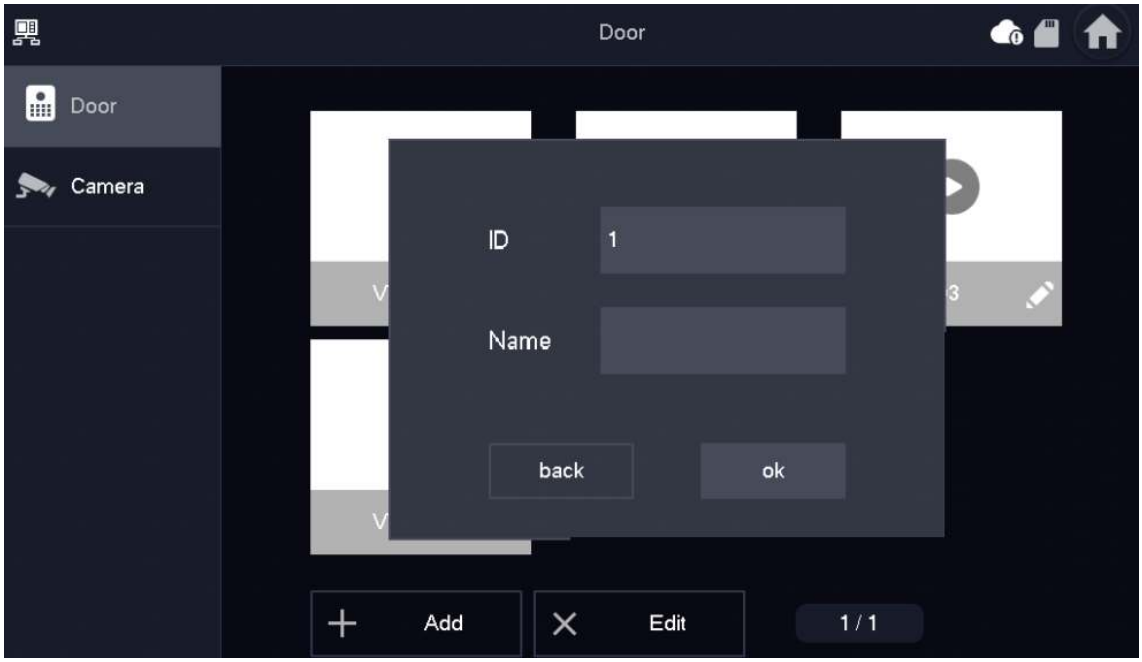
Table 6-3 Icon description

Icon	Description
/	Remotely unlock the door where the VTO is located.
	Take snapshots. An SD card is needed to use this function. Otherwise, the icon would turn grey.
	Tap to start recording, and it will stop when the call is completed or after you tap . If the SD card is full, the oldest videos will be overwritten. An SD card is needed to use this function. Otherwise, the icon would turn grey.
/	If the VTH is connected to multiple VTOs or HDCVI camera, tap or to switch between devices.
	Exit monitoring.
	Tap to speak to the VTO, and tap again to stop.

Related Operations

- **Add**: To add new VTOs. Enter the ID number and the name of the VTO, and then tap **OK**.

Figure 6-13 Add new VTO



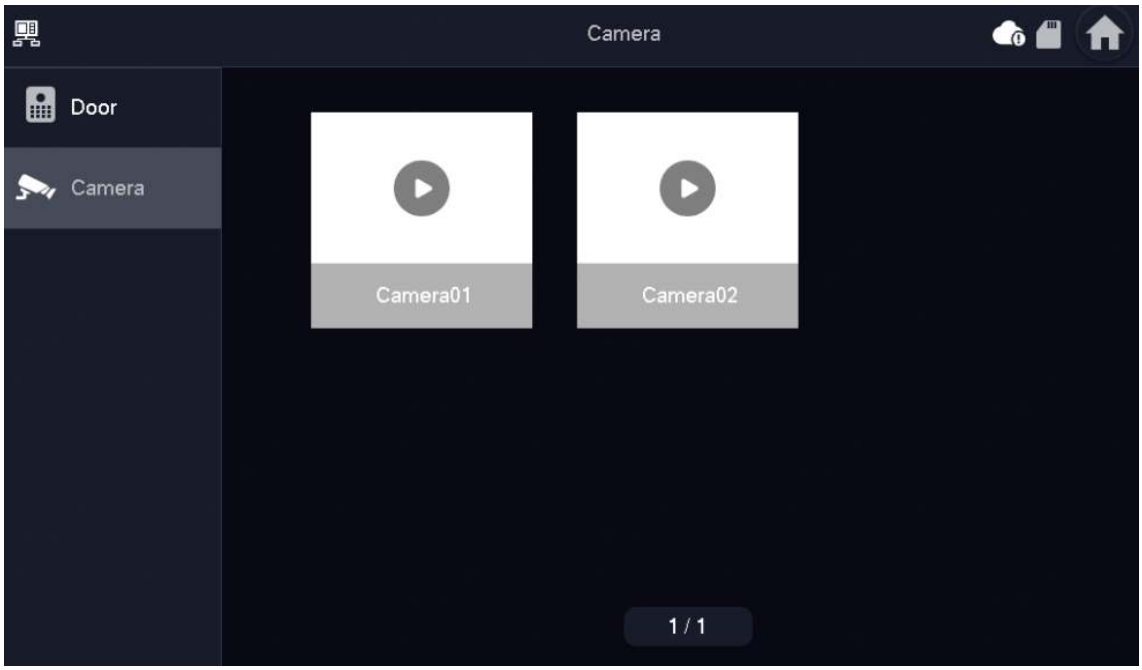
- **Delete**: To delete the selected VTOs.

6.4.2 Monitoring Camera

Procedure

Step 1 Select **Monitor** > **Camera**.

Figure 6-14 Camera



Step 2 Tap to monitor the camera you selected.

6.5 Setting

6.5.1 Ring Settings

Set VTO ring, alarm ring and other rings.

- There is an SD card on the VTH, and users can import ring tones to the SD card.
- Ring tones must be stored in the /Ring folder at the root directory of the SD card.
- Audio files must be .pcm files (audio files of other formats cannot be played if you change their extension names).
- Audio file size must be less than 100 KB.
- Ring tone format: .pcm.
- You can only customize 10 ring tones. Other ring tones will not be displayed at the VTH.

6.5.1.1 VTO Ring

Background Information

Set a ring for the connected VTO, and support to set maximum 14 VTOs.

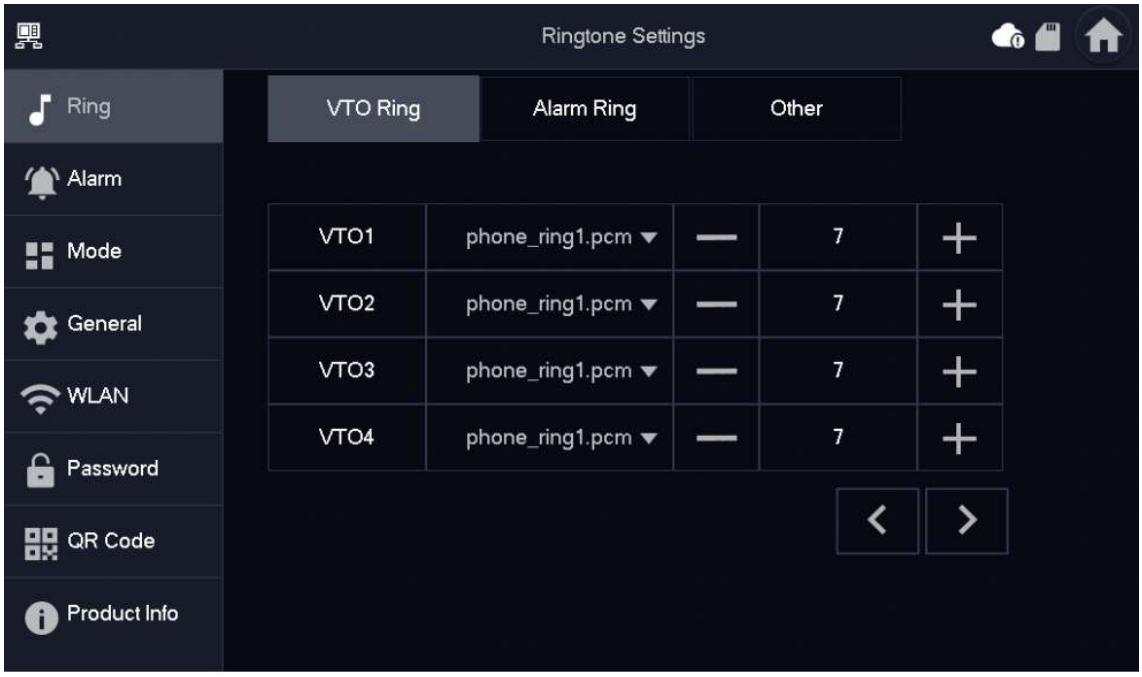
Procedure

Step 1 Tap **Setting**.

Step 2 Select **Ring** > **VTO Ring**.

- or : Tap the icons to page up and down.
- or : Tap the icons to adjust the VTO ring volumes.

Figure 6-15 VTO ring



6.5.1.2 Alarm Ring

Set the ring when the VTH gives an alarm.

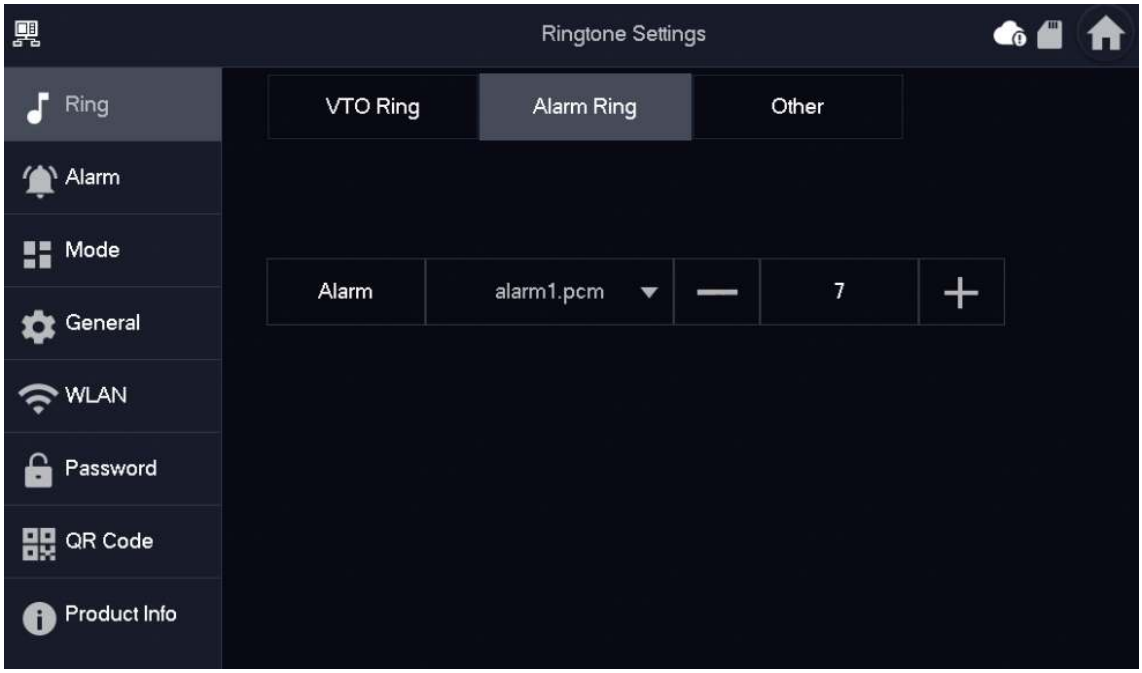
Procedure

Step 1 Tap **Setting**.

Step 2 Select **Ring** > **Alarm Ring**.

or : Tap the icons to adjust the VTO ring volumes.

Figure 6-16 Alarm ring



6.5.1.3 Other Ring

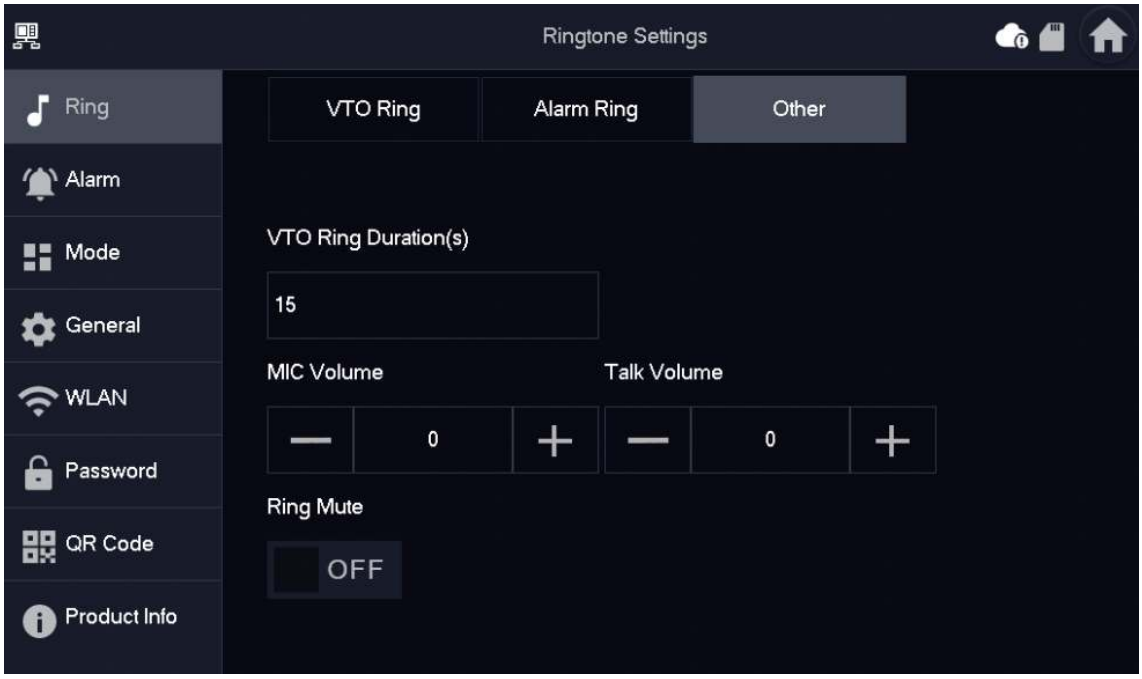
Set VTO ring time, MIC volume, talk volume and ring mute setting.

Procedure

Step 1 Tap **Setting**.

Step 2 Select **Ring** > **Other**.

Figure 6-17 Other ring



Step 3 Tap + and — to set the time or volume. Tap to enable **Ring Mute**.

VTO ring time: ring time when a VTO calls this VTH.

6.5.2 Alarm Setting

6.5.2.1 Wired Zone

Set zone type, NO/NC, alarm status and delay. You can set 6 zones at most.

Procedure

Step 1 Tap **Setting**.

Step 2 Select **Alarm** > **Wired Zone**.

Figure 6-18 Wired zone

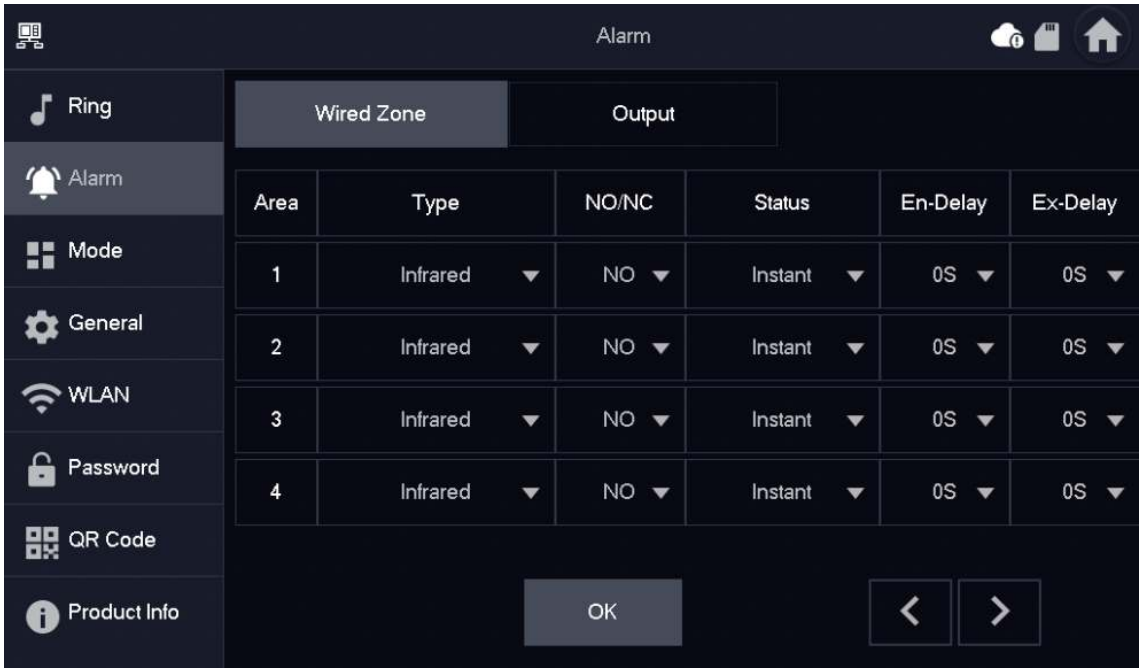


Table 6-4 Parameter description

Parameter	Description
Area	The number cannot be modified.
NO/NC	Select NO (normally open) or NC (normally closed) according to detector type. It shall be the same as detector type.
Type	Select corresponding type according to detector type, including IR, gas, smoke, urgency button, door, burglar alarm, perimeter and doorbell.
Status	• **Instant Alarm** : After armed, if an alarm is triggered, the device produces siren at once and enters alarm status. • **Delay Alarm** : After armed, if an alarm is triggered, the device enters alarm status after a specified time, during which you can disarm and cancel the alarm. • **Bypass** : Alarm will not be triggered in the area. After disarmed, this area will restore to normal working status. • **Remove** : The area is invalid during arm/disarm. • **24 Hour** : Alarm will be triggered all the time in the area regardless of arm or disarm. A zone in **Remove** status cannot be bypassed.

Parameter	Description	
Enter Delay	After entering delay, when armed area triggers an alarm, entering armed area from non-armed area within the delay time period will not lead to linkage alarm. Linkage alarm will be produced if delay time comes to an end and it is not disarmed.	Delay is only valid to the areas of **Delay Alarm**.
Exit Delay	After arm, **Delay Alarm** area will enter arm status at the end of **Exit Delay**. If multiple areas set the exit delay, interface prompt will conform to maximum delay time.	

6.5.2.2 Alarm Output

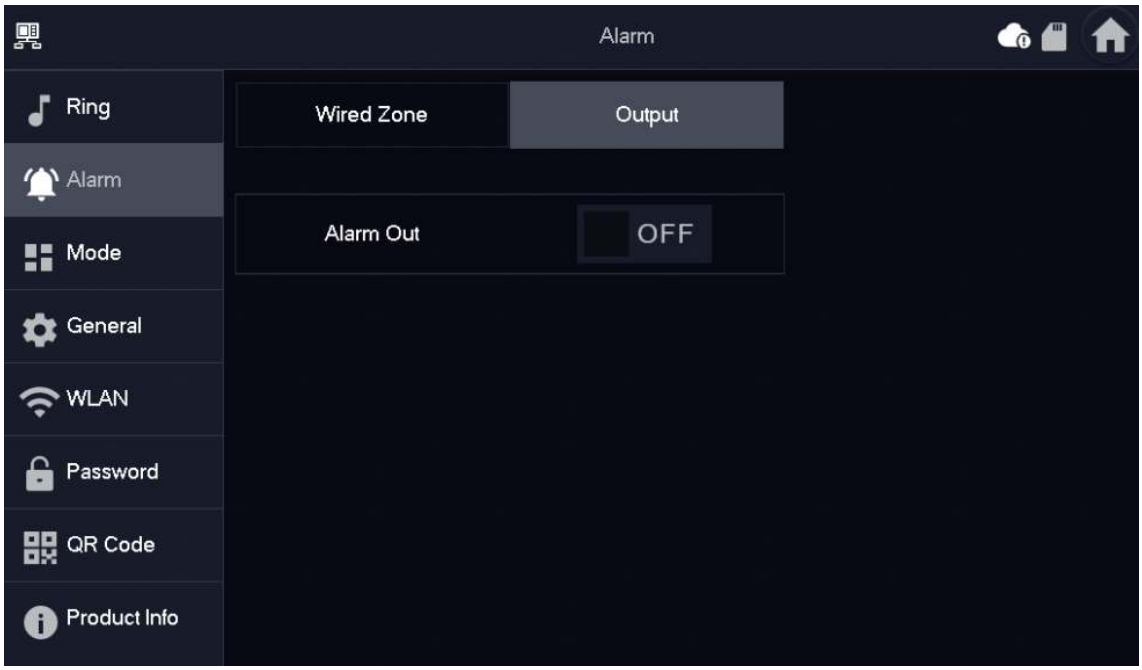
After enabling alarm output, when other devices call this VTH, the alarm output device will output alarm information.

Procedure

Step 1 Tap **Setting**.

Step 2 Select **Alarm** > **Output**.

Figure 6-19 Alarm output



Step 3 Tap OFF to enable the alarm output function.

6.5.3 Arm Mode Setting

Set area on/off status under different modes.

Area mode can only be set in disarm status.

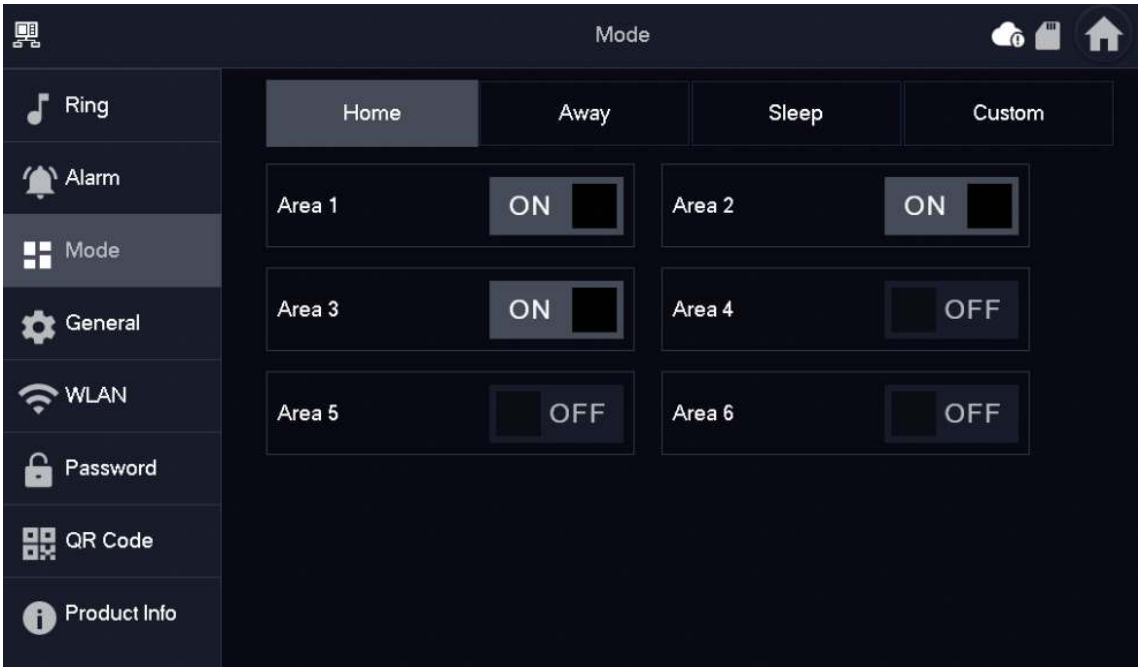
Procedure

Step 1 Tap **Setting**.

Step 2 Select **Mode**.

- **Home**: An arming mode that allows you to arm the system when inside the area of the alarm system.
- **Away**: Arm the system when you leave the area of the alarm system.
- **Sleep**: An alarming mode that allows you to arm the system in the sleep time.
- **Custom**: Arm the system based on your customized needs.

Figure 6-20 Mode setting



Step 3 Select the arm mode you want to configure in the tabs.

Step 4 Tap OFF in every area to add it into arm mode.

Multiple areas can be added into one arm mode at the same time, and one area can be added into different modes.

6.5.4 General Setting

6.5.4.1 Time and DND

Set VTH system time and time zone.

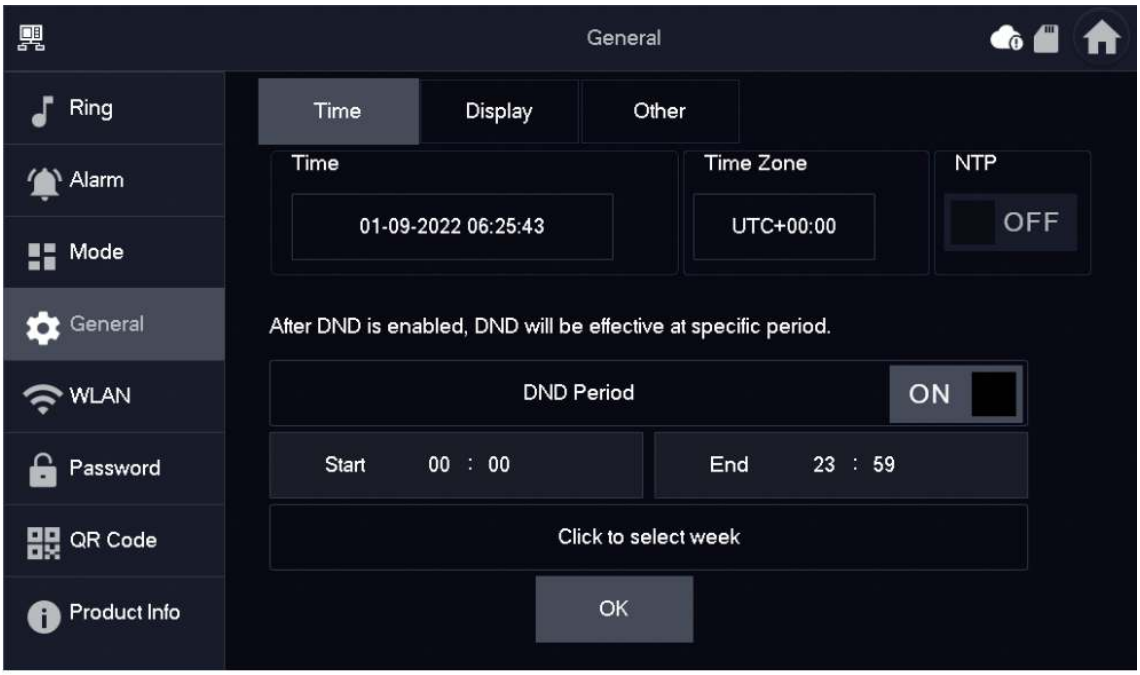
Parameters at this screen can be set on both main VTH and extensions.

Procedure

Step 1 Tap **Setting**.

Step 2 Select **General** > **Time**.

Figure 6-21 Set time and time zone



Step 3 Set time parameter.

- Enable **NTP**, the VTH will synchronize time with the NTP server automatically; turn it off to set time or time zone manually.
- Enable **DND period** , set start and end time or tap **Click to select week** to select the day(s), and you will not receive any call or message during this period, and then tap **OK**.

Figure 6-22 DND period

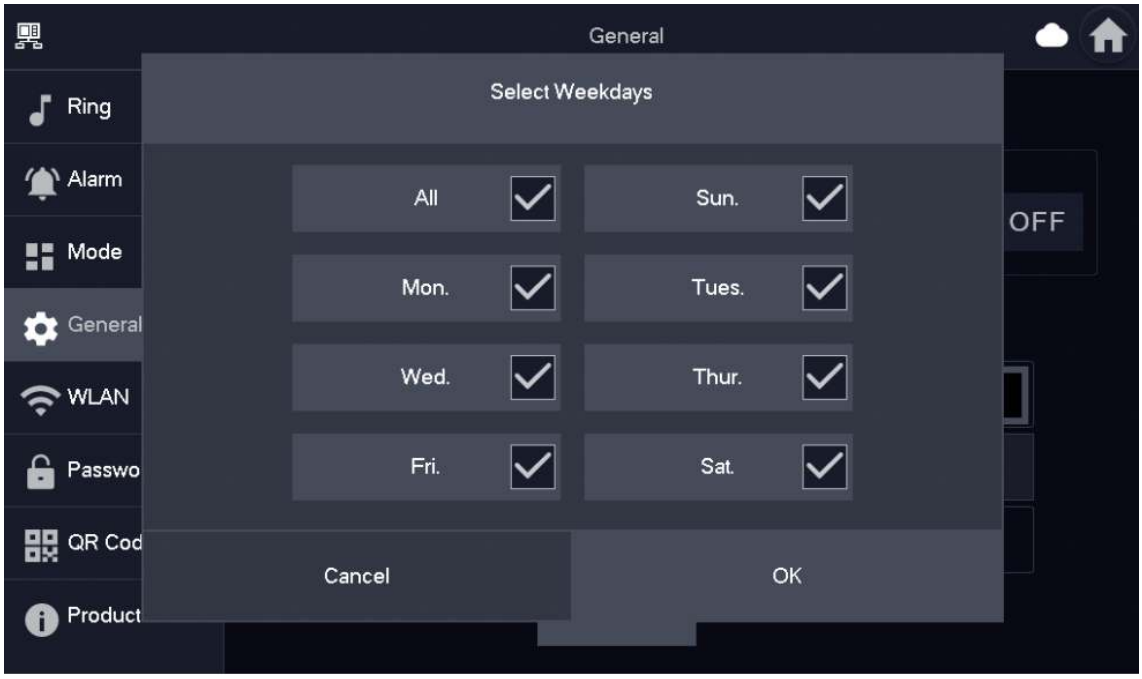
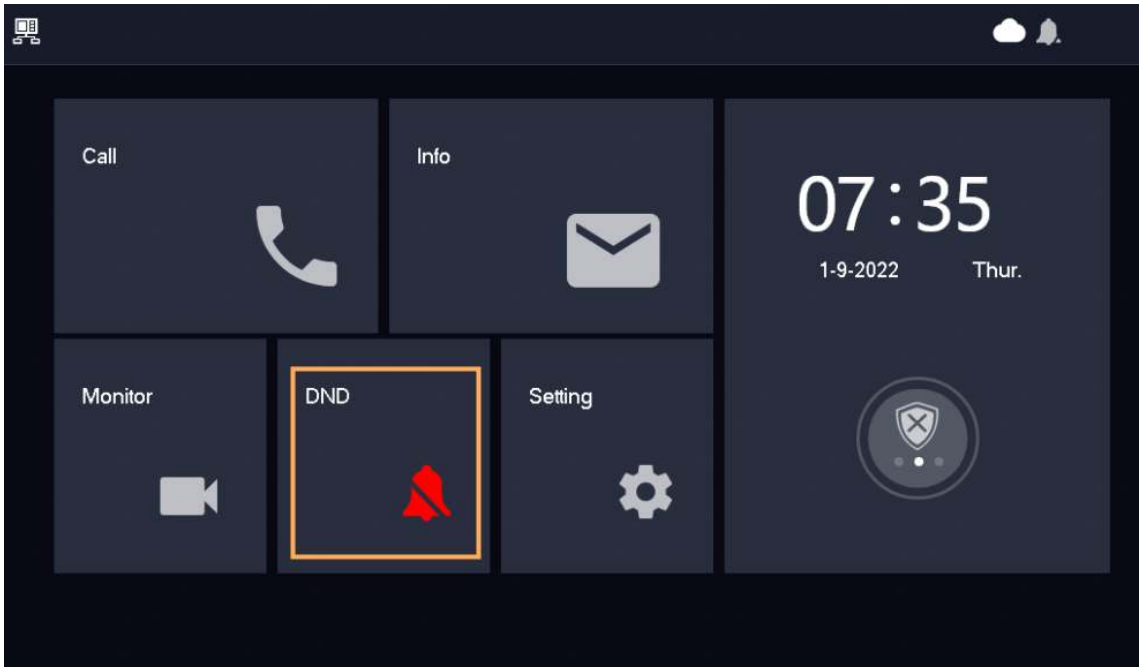


Figure 6-23 DND enabled



6.5.4.2 Display

Set VTH screen brightness, screenclose time and clean the screen.

The snapshots are for reference only, and might differ from the actual screen.

Procedure

Step 1 Tap **Setting**.

Step 2 Select **General** > **Display**.

Figure 6-24 Display

Step 3 Set parameters.

- **Brightness**: The brightness of the VTH screen. If the screen display is brighter or darker than your expectation, you can adjust the brightness by taping + or −.
- **Screenclose Time**: The screen will automatically turn off when it reaches the time limit for being idle. If it is longer or shorter than your expected time limit, you can adjust the time by taping + or −.
- **Clean** : Tap the icon, and then the screen will be locked for 30 seconds. During the period, clean the screen.

6.5.4.3 Other

You can configure the monitoring time, recording time, VTO message time, VTO call time, auto capture and touch sound.

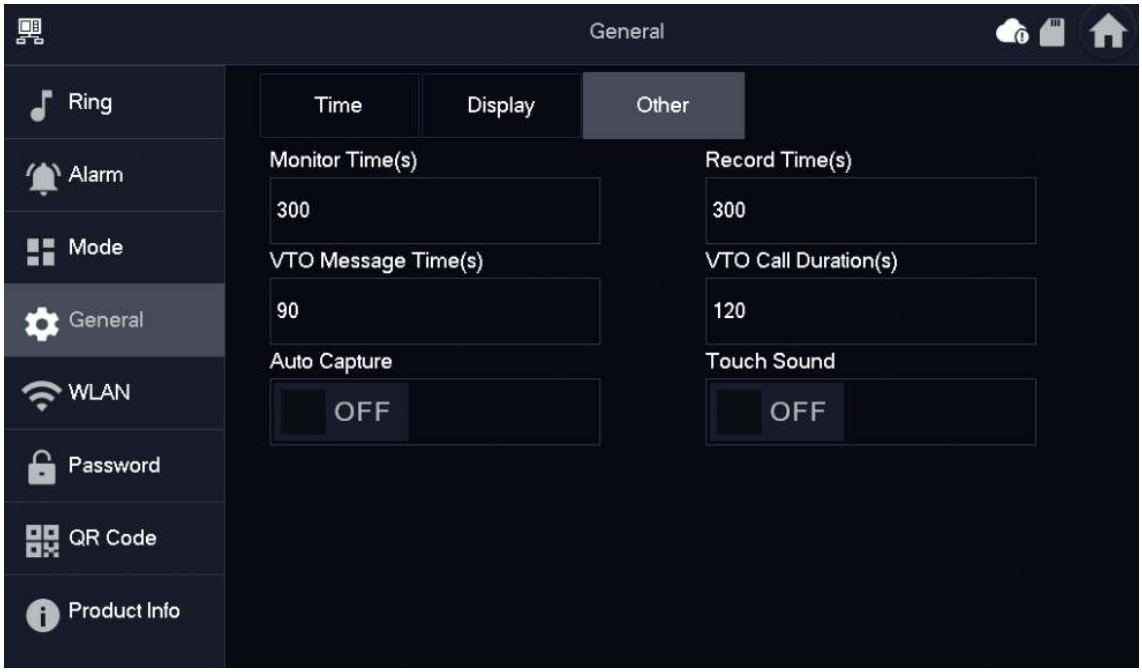
For Sub VTHs, you can configure Auto Capture, Touch Sound, Record Time, VTO Call Duration and Touch Sound. But VTO Message Time cannot be configured, it is 90 seconds by default. All the parameters can be configured for the main VTH.

Procedure

Step 1 Tap **Setting**.

Step 2 Select **General** > **Other**.

Figure 6-25 Other



Step 3 Configure parameters.

Table 6-5 Parameter description

Parameter	Description
Monitor Time	The maximum time to monitor VTOs and HDCVI cameras.
Record Time	The maximum time for recording videos during calls and monitoring. The system stop recording when it reaches the end of the recording time.
VTO Message Time	• When **VTO Message Time(s)** is not 0: ◇ If the main VTH has an SD card and the call from the VTO is not answered, the VTH will allow the caller to leave a message, saving the message to the SD card. ◇ If the VTH does not have an SD card, calls from the VTO will be automatically hung up on. • When **VTO Message Time(s)** is 0: Regardless of the situation, calls from the VTO will be automatically hung up on.
VTO Call Duration	The maximum time for a call between the VTO and VTH.
Auto Capture	Enable for 3 snapshots to be automatically taken when the VTO calls the VTH. Tap **Info** > **Record and Picture** to view them. • An SD card is needed for this function. • After enabling auto capture, **Answer and Delete Snapshots** will be displayed. Turn it on for snapshots to be deleted automatically when the VTH answers the call.
Touch Sound	Enable touch sound to allow the screen to make a clicking sound whenever you tap it.

6.5.5 WLAN

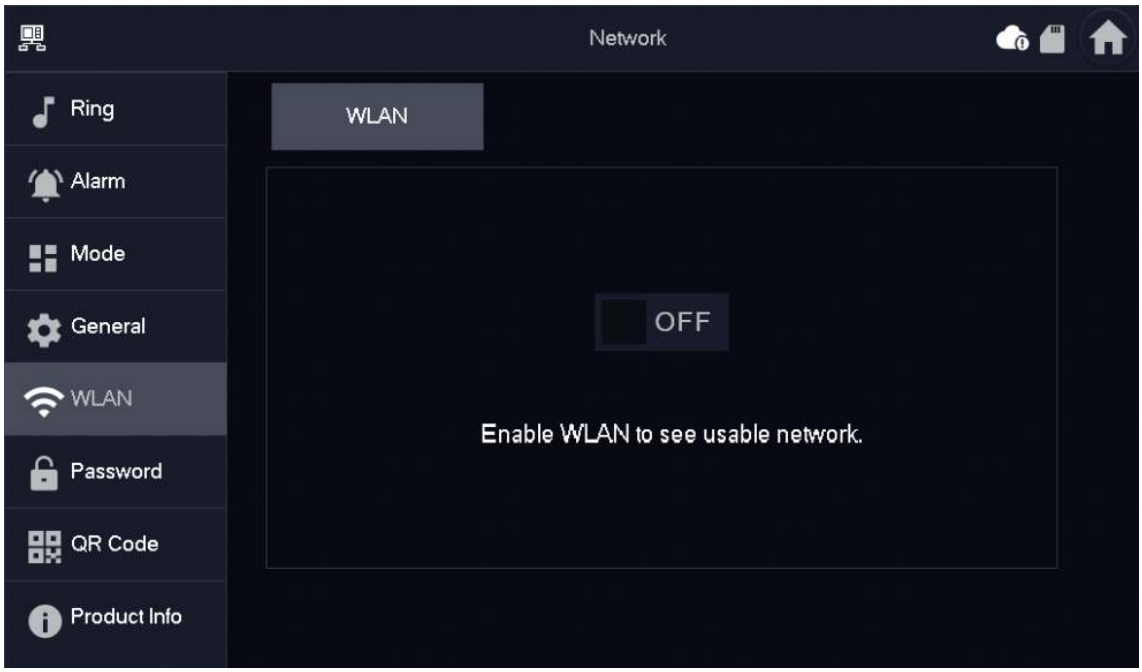
6.5.5.1 WLAN Configuration

Procedure

Step 1 On the main screen, select **Setting** > **WLAN**.

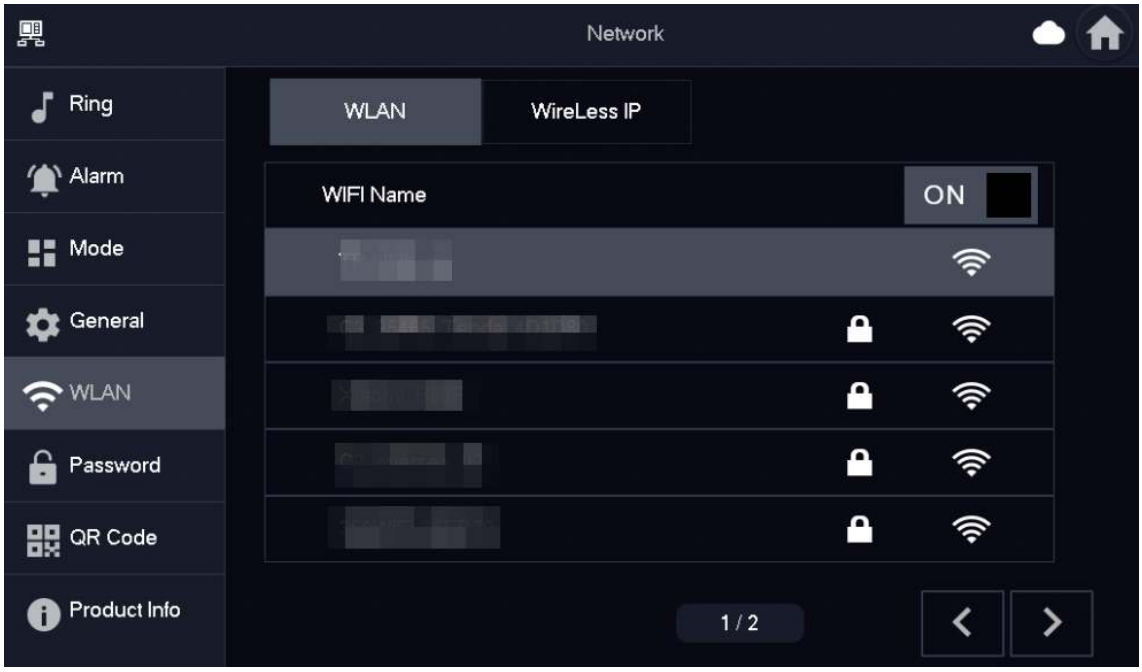
Step 2 Tap **WLAN** screen, and tap to see all of the available Wi-Fi services.

Figure 6-26 Enable Wi-Fi



Step 3 Tap a Wi-Fi, and then enter the password to connect to the Wi-Fi.

Figure 6-27 Wi-Fi list



6.5.5.2 Wireless IP

Procedure

Step 1 On the main screen, select **Setting** > **WLAN**.

Step 2 Tap **Wireless IP**, and enter **Local IP**, **Subnet Mask** and **Gateway**, and then tap **OK**.

You can also tap **Wireless IP**, and turn on **DHCP** to obtain the information automatically.

Figure 6-28 Wireless IP

6.5.6 Password Management

6.5.6.1 User Password

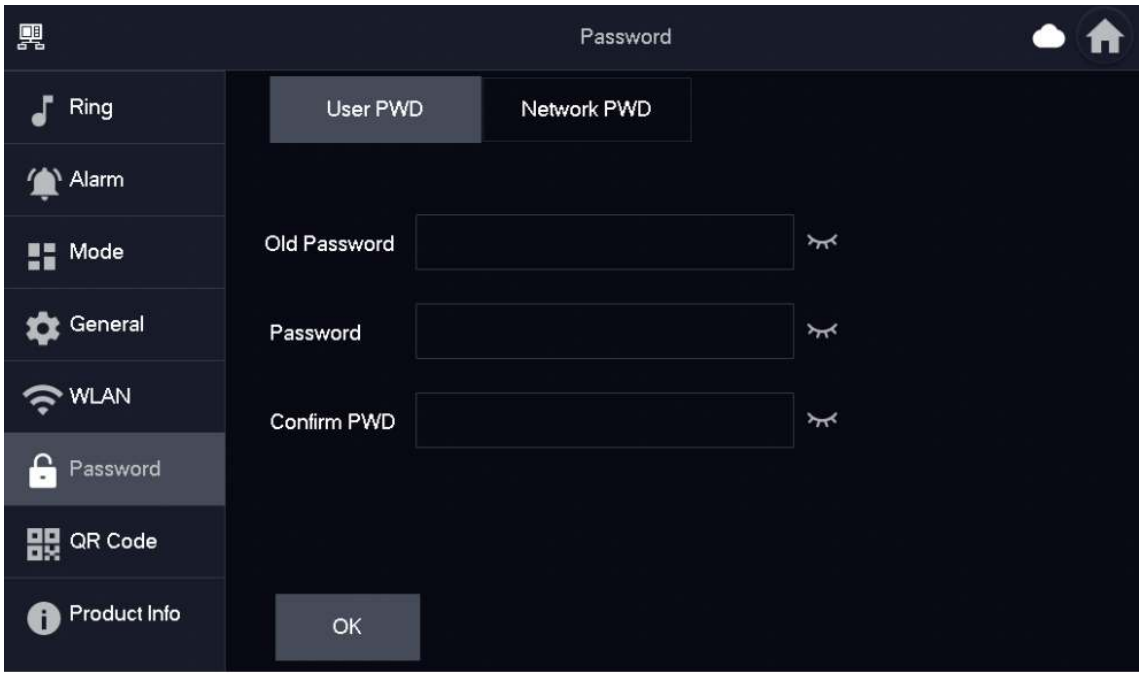
The user password is used to enter the arm and disarm mode. You can revise your user password based on your needs. The default password is 123456.

Procedure

Step 1 On the home screen, select **Setting** > **Password** > **User PWD**.

Step 2 Enter the old password, new password and conform it.

Figure 6-29 Change user password



Step 3 Tap **OK** to save the configuration.

6.5.6.2 Network Password

The network password is used when adding the VTH to the DMSS app.

6.5.6.2.1 Creating Network Password

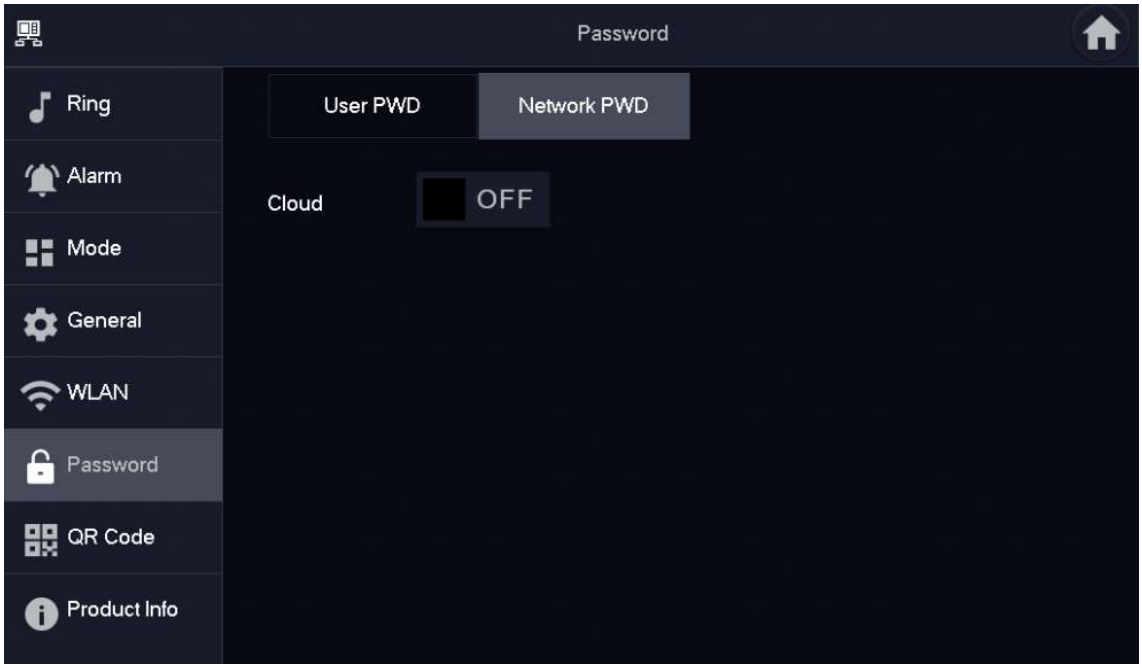
The network password is used to add the VTH to the DMSS app.

Procedure

Step 1 On the home screen, select **Setting** > **Password** > **Network PWD**.

Step 2 Tap OFF to enable the cloud function.

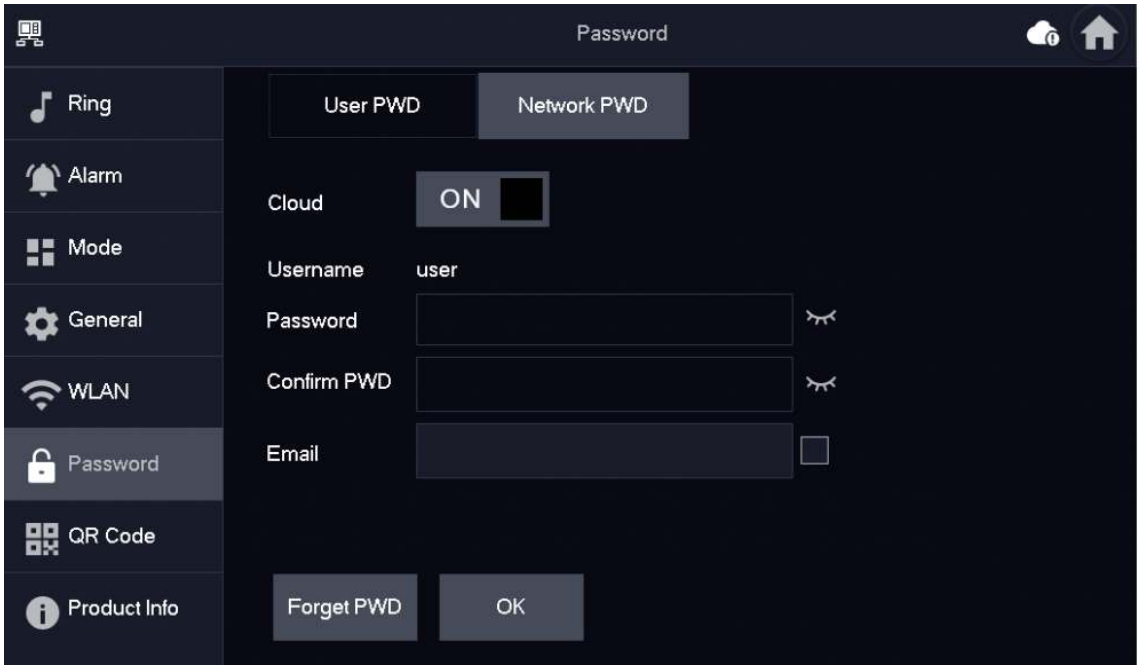
Figure 6-30 Enable cloud



Step 3 Create a user account and then enter the password you planned and then confirm it.

The **Username** is **user** by default.

Figure 6-31 Create network password



Step 4 Tap **OK**.

Results

The VTH would automatically generate a QR code that contains the **User** account. When you scan the DMSS QR code in the **Setting** > **QR Code**, the DMSS App would synchronize the device information of the VTH.

When going to the QR Code screen for the first time, the **DMSS** QR code would not appear. Only after you set the network password, this module would be displayed.

Figure 6-32 DMSS QR code

6.5.6.2.2 Modifying Network Password

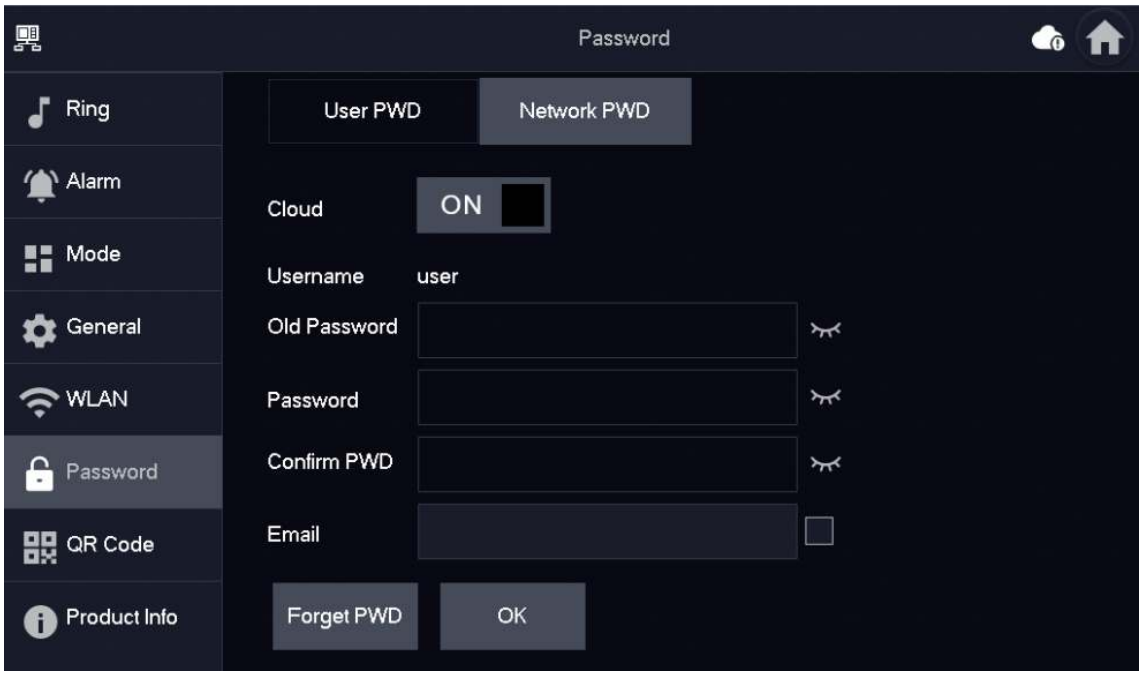
This section applies to the situation when you know your current network password and you want to change it to another one.

Procedure

Step 1 On the home screen, select **Setting** > **Password** > **Network PWD**.

Step 2 Enter the old password, new password and then confirm the new one.

Figure 6-33 Change password



Make sure that you have created a strong password. Otherwise, there will be onscreen prompt appeared.

Step 3 Tap **OK**.

6.5.6.2.3 Resetting Network Password

This section applies to the situation when you forget your network password and you can reset it to create a new one.

Procedure

Step 1 On the home screen, select **Setting** > **Password** > **Network PWD**.

Step 2 Tap **Forget PWD** , and enter the new password in the **Password Verification** window, and then tap **OK**.

6.5.7 QR Code

Scan the QR code using your DMSS App so you can obtain the device information, such as SN, IP address of VTH.

Procedure

Step 1 Tap **Setting**.

Step 2 Select **QR Code** .

Figure 6-34 QR code

6.5.8 Product Information

Restart the system and format SD card.

If SD card is not inserted into the device, SD format function is invalid.

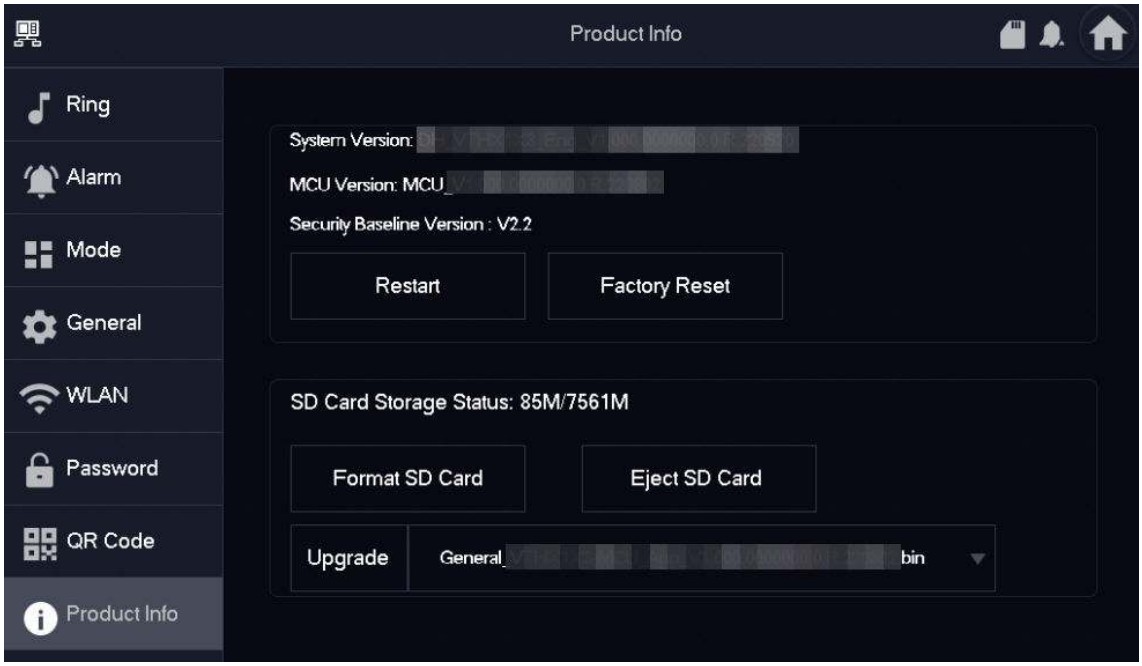
Procedure

Step 1 Tap **Setting**.

Step 2 Select **Product Info**.

- **Restart** : Restart the device.
- **Factory Reset** : Reset the device to factory setting.

Figure 6-35 Upgrading the device



6.5.9 Upgrading the Program

Prerequisites

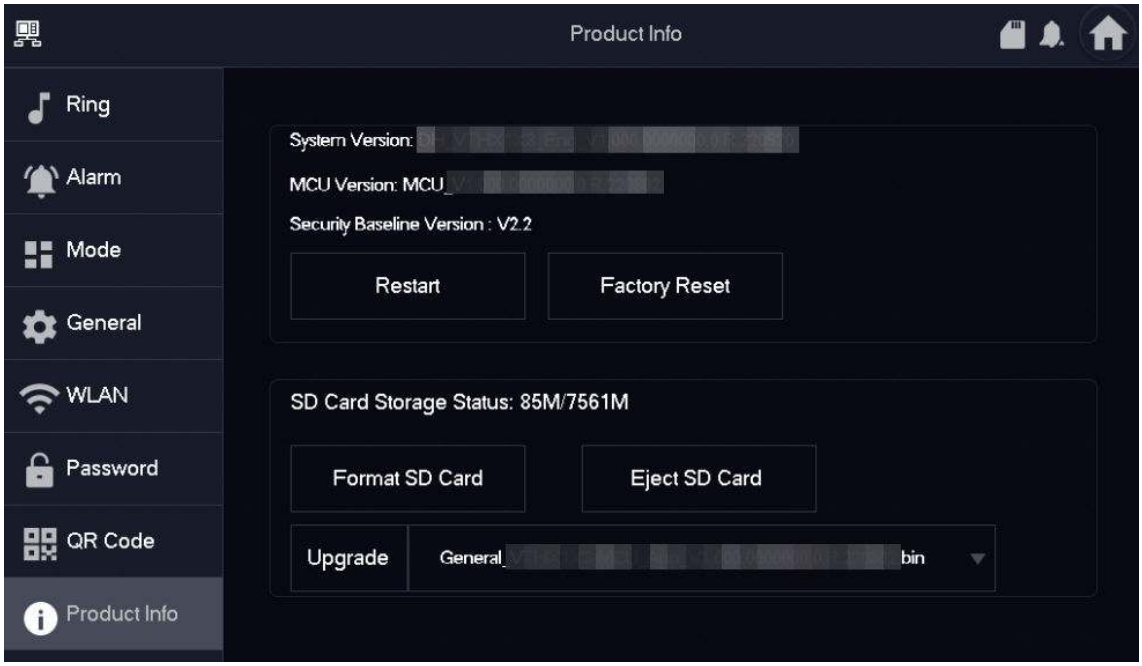
- Make sure that you have uploaded the software for upgrading under the **Upgrade** directory of the SD card.
- Make sure that you have inserted the SD card into the VTH.

Procedure

Step 1 Select **Setting** > **Product Info**.

Step 2 Tap to select the upgrading program, and then tap **Upgrade** to upgrade the software.

Figure 6-36 Upgrade the device



Related Operations

- **Format SD Card** : Tap the icon to format the data stored in the SD card.
- **Eject SD Card** : Tap the icon to eject the SD card that inserted in the VTH.

6.6 Arming and Disarming

6.6.1 Arming

In case of triggering alarm after arm, produce linkage alarm and upload alarm information.

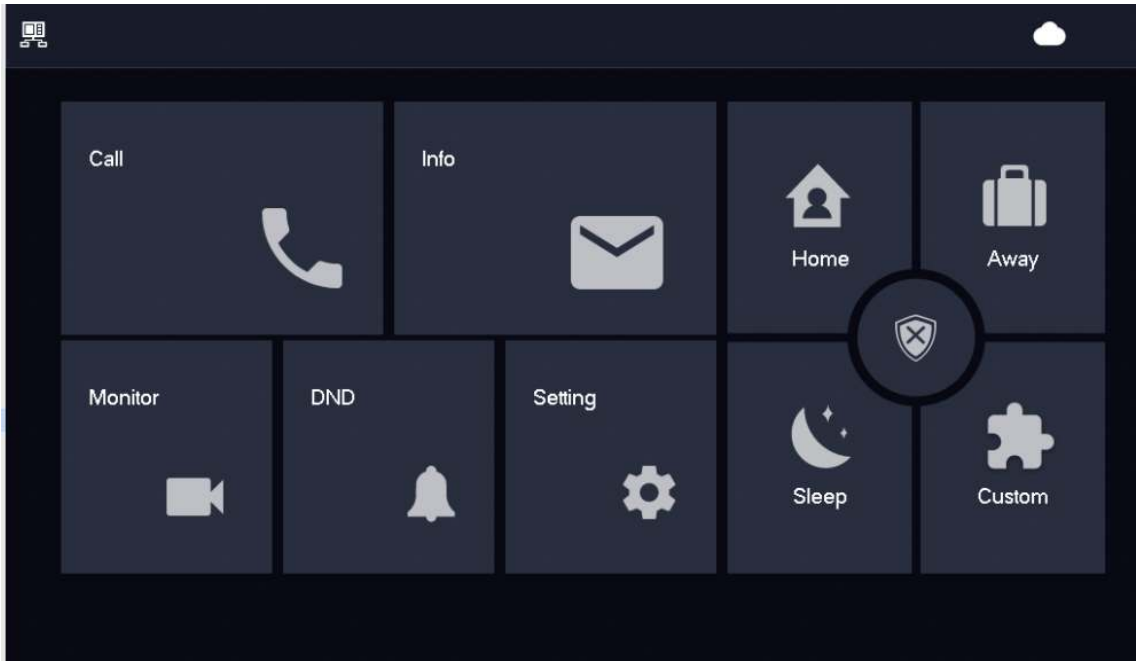
- Please ensure that the area has been added into arm mode. Otherwise, there will be no alarm triggering after arm.
- Please ensure that it is in disarmed status. Otherwise, arm will fail.

Procedure

Step 1 Tap on the home screen to view all the arm modes.

- **Home**: Arm the system when inside the area of the alarm system.
- **Away**: Arm the system when you leave the area of the alarm system.
- **Sleep**: An alarming mode that allows you to arm the system in the sleep time.
- **Custom**: Arm the system based on your customized needs.

Figure 6-37 Arm mode



Step 2 Enter arm password in the **In Mode Arm**, and then tap **OK**.

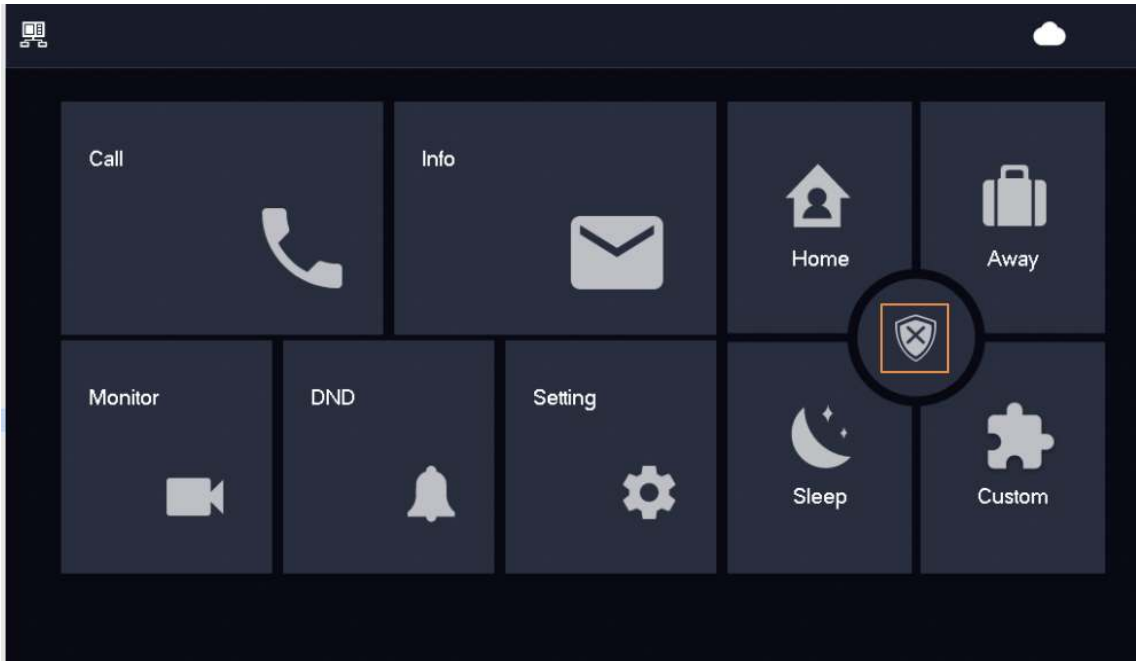
- Default password of arm is 123456. If you want to modify the password, please refer to "6.5.6.1 User Password" for details.
- If delay alarm is set in the area, the device will beep continuously at the end of exit delay time.

6.6.2 Disarming

Procedure

Step 1 In the arm mode, tap .

Figure 6-38 Disarm



Step 2 Enter the disarm password in the **In Mode Disarm** window, and then tap **OK**.

Default password of disarm is 123456. Please refer to "6.5.6.1 User Password"for details.

7 DMSS App

7.1 Downloading DMSS App

You can download the DMSS App in the APP Store (iOS) or Google Play (Android) by searching for **DMSS**.

7.2 Registration and Login

For first-time use, you need to create an account. This user manual uses the operations for iOS as an example

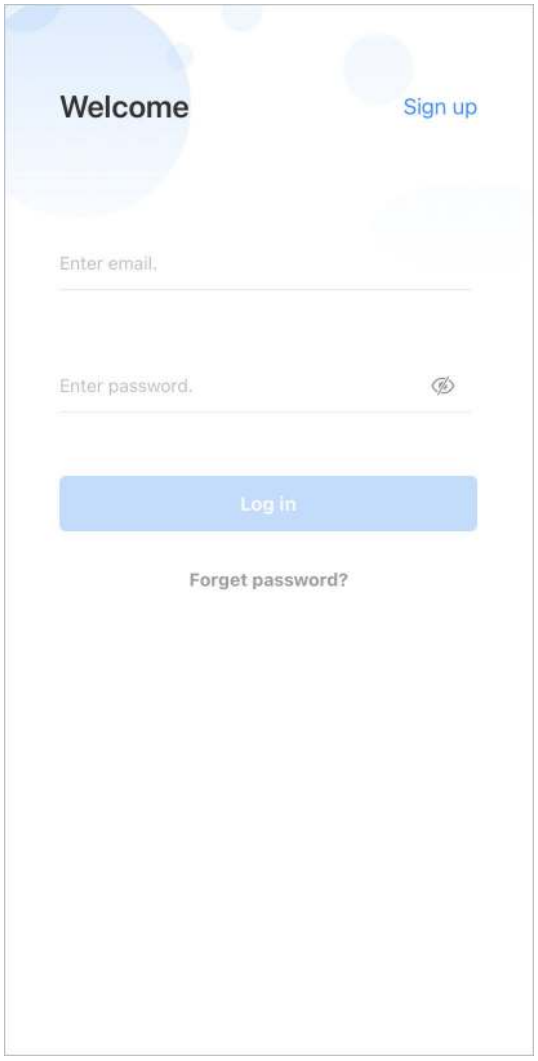
Procedure

Step 1 Tap to start the App.

Step 2 Create an account.

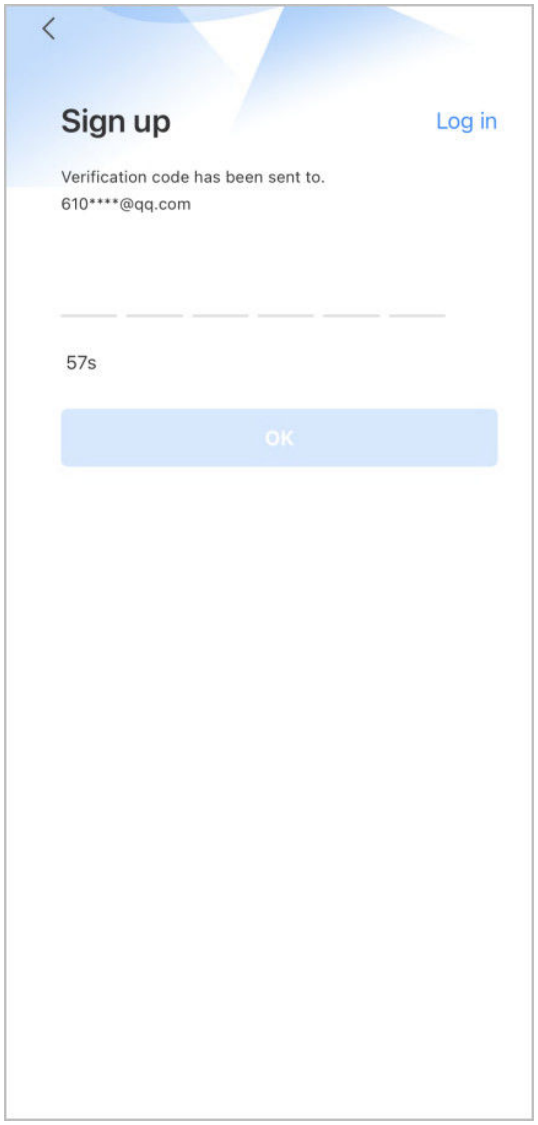
1. On the **Login** screen, tap **Sign up**.

Figure 7-1 Sign up



2. Enter your email address and password.
3. Read the **User Agreement and Privacy Policy**, and then select the **I have read and agree to** checkbox.
4. Tap **Get verification code**, check your email box for the verification code, and then enter the code.

Figure 7-2 Verification code



5. Tap **OK**.

Step 3 On the **Login** screen, enter your email and password, and then tap **Log in**.

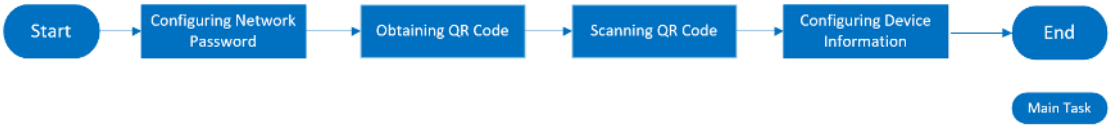
You can modify the password through **Me** > **Account Management** > **Modify Password**.

7.3 Adding VTH to DMSS

Background Information

Before adding VTH to DMSS, see the configuration flow below to help you familiarize the process.

Figure 7-3 Configuration flow



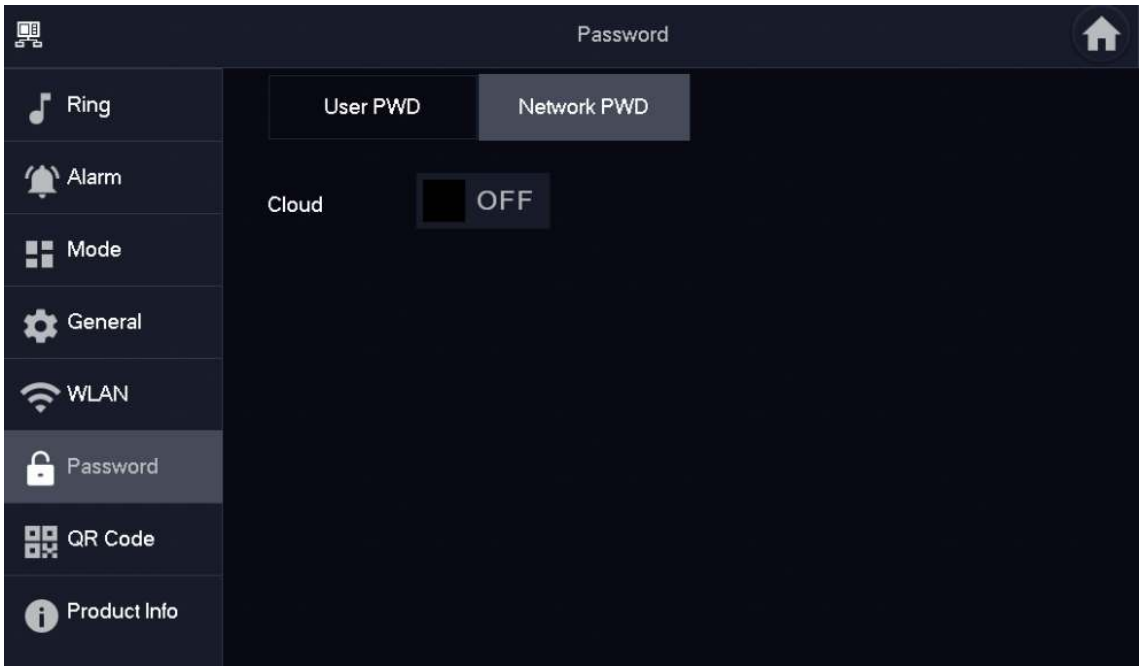
Procedure

Step 1 Power on the VTH.

Step 2 Configure network password on the VTH.

1. Select **Setting** > **Password** > **Network PWD**.
2. Tap OFF to enable the cloud function.

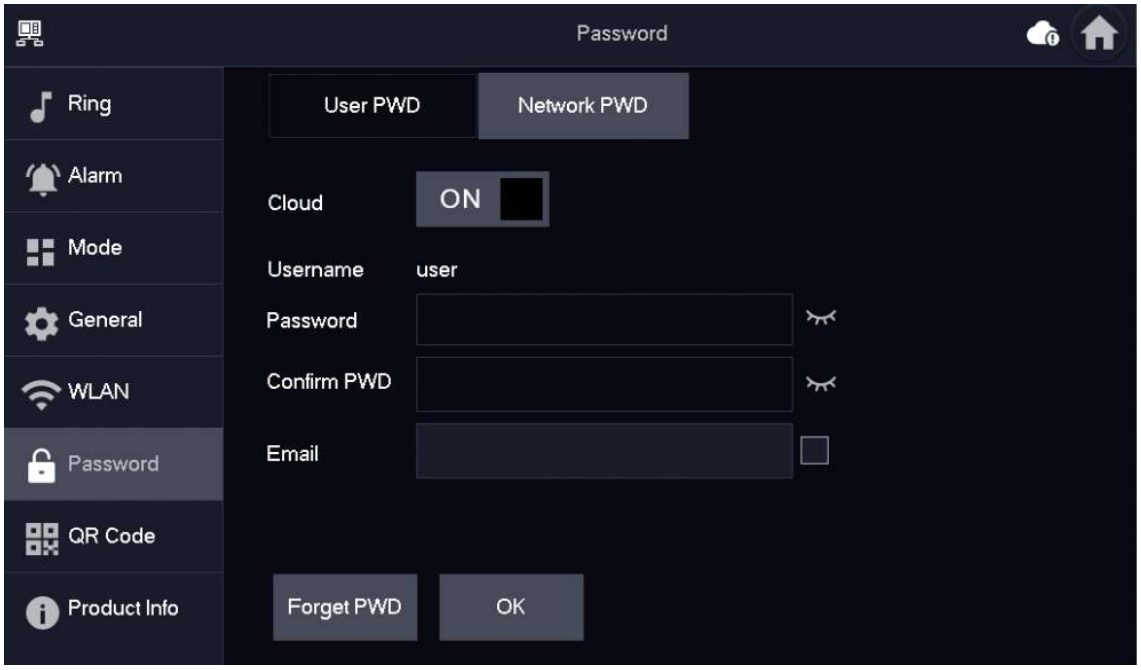
Figure 7-4 Enable Cloud



3. Create a user account, and then enter the password you planned and then confirm it.

The **Username** is **user** by default.

Figure 7-5 Create network password



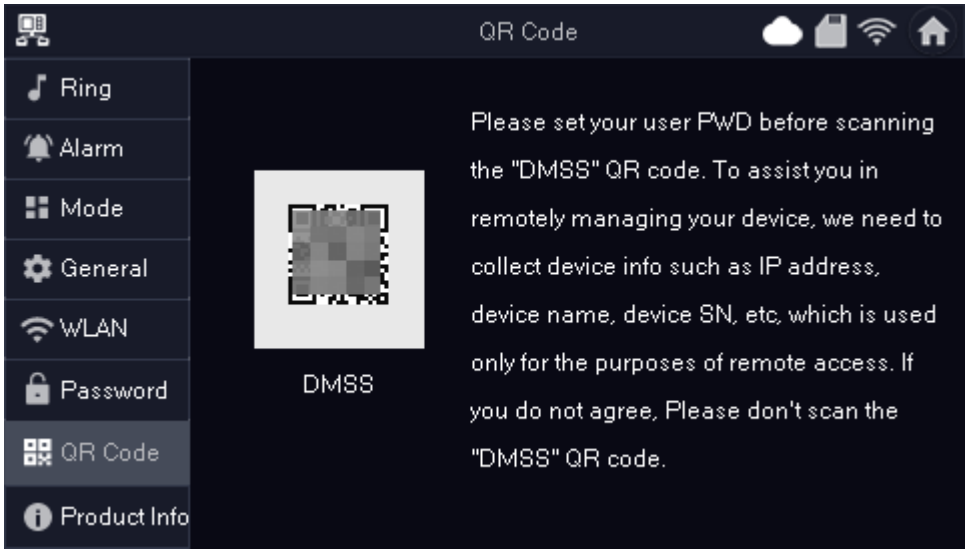
Step 3 Connect to the Wi-Fi.

1. Select **Setting** > **WLAN**.
2. Tap **WLAN** screen, and then tap OFF to see all of the available Wi-Fi services.
3. Tap a Wi-Fi, and then enter the password to connect to the Wi-Fi.

Figure 7-6 Connect to the Wi-Fi

Step 4 Obtain QR Code. Select **Setting** > **QR Code** to obtain the latest QR code of the VTH, which contains its device information.

Figure 7-7 Obtain DMSS QR code

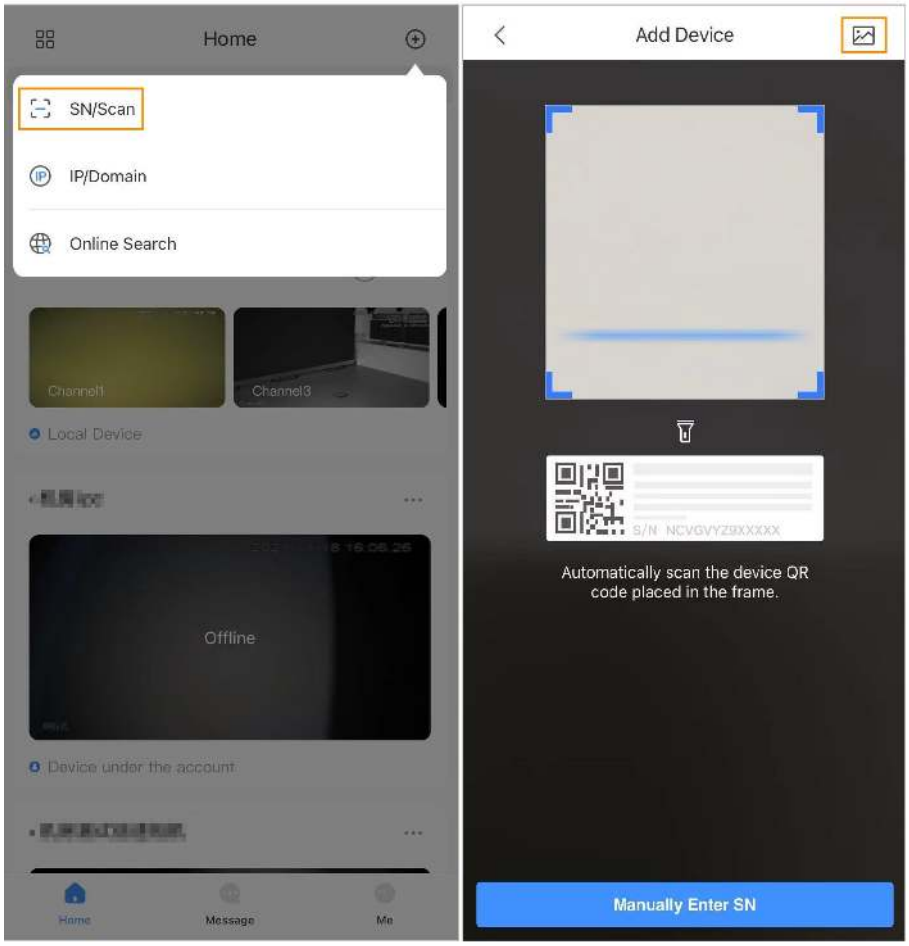


Step 5 Scan the QR code.

1. On the **Home** screen of the app, tap ⊕, and then select **SN/Scan**.
2. Scan the DMSS QR code you obtained in **Setting** > **General** > **QR Code** on the VTH to obtain the device information of the VTH.

When there is a main VTH and extension(s), make sure that you only scan the QR code of the main VTH.

Figure 7-8 Add VTH

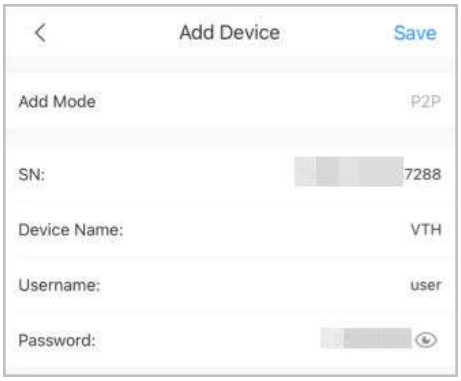


The illustration is for reference only and might differ from the actual one.

Step 6 Configure device information. On the **Add Device** screen, enter the device name of the VTH, username and password of the VTH, and then tap **Save**.

- **Device Name** : customized.
- **Username** : Enter **user**.
- **Password** : Enter the network password of the VTH you configured in "6.5.6.1 User Password".

Figure 7-9 Add device



Step 7 Configure the time zone, and then tap **Done**.

7.4 Configuring Arm and Disarm

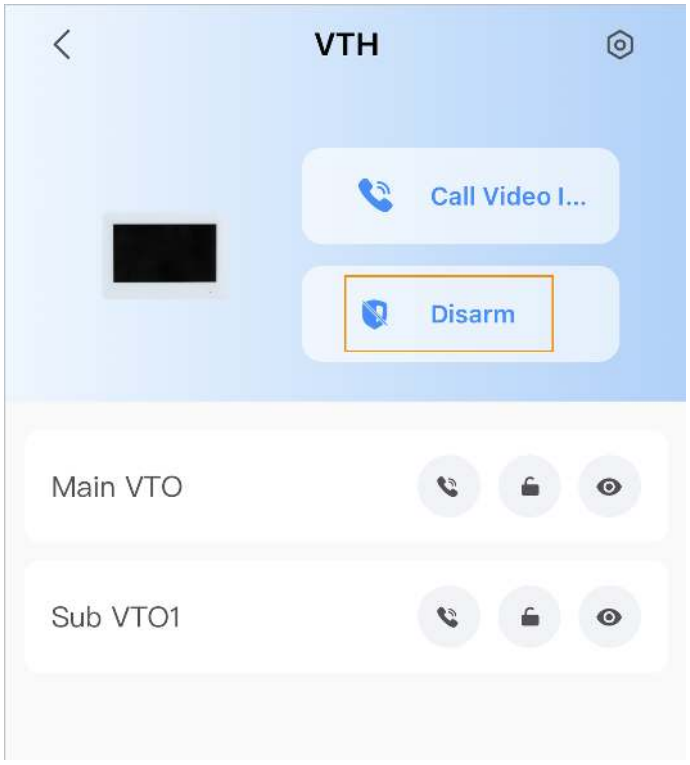
Make sure that the VTH and VTO are properly connected.

Procedure

Step 1 On the **Home** screen, tap ···, select the VTH you have just added, and then tap **Device Details** to go to the function screen.

Step 2 Tap **Disarm** or **Arm** to disarm or arm the VTH.

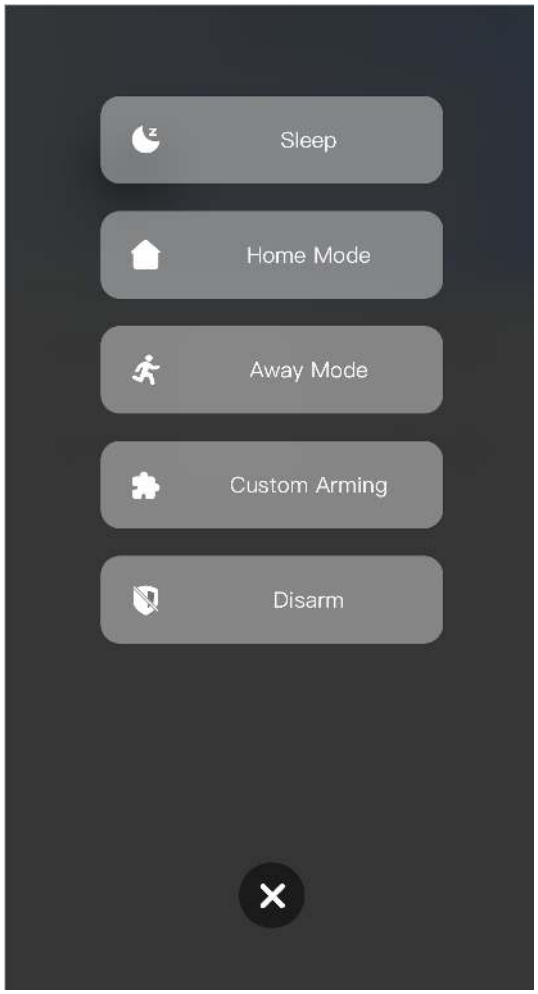
Figure 7-10 Disarm VTO



Step 3 Select from the arm/disarm mode list, and the arm/disarm configuration would take effect on the VTH after you completed the setting.

- **Sleep**: Arm the system in the sleep time.
- **Home Mode**: Arm the system when inside the area of the alarm system.
- **Away Mode**: Arm the system when you leave the area of the alarm system.
- **Custom Arming**: Arm the system based on your customized needs.
- **Disarm**: Turn the security system off. The opposite of arming.

Figure 7-11 Arm and disarm mode



7.5 DMSS Monitoring VTO

Make sure that the VTH and VTO are properly connected.

Procedure

Step 1 On the **Home** screen, tap ···, select the VTH you have added, and then tap **Device Details** to go to the function screen.

Step 2 Tap to view the monitoring video of the VTO.

Figure 7-12 View monitoring video

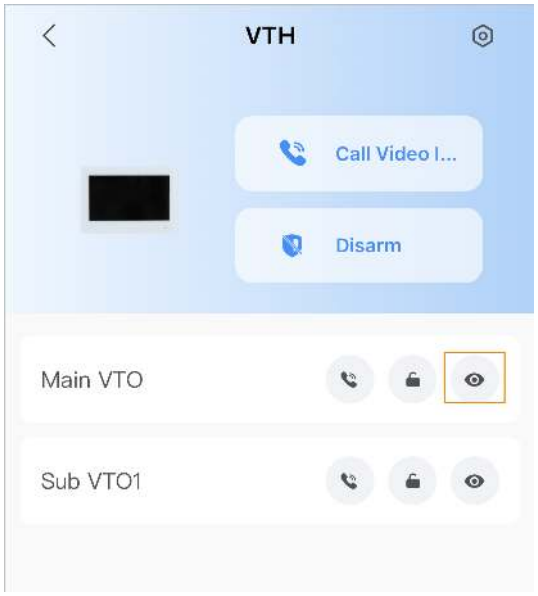


Figure 7-13 Viewing monitoring video

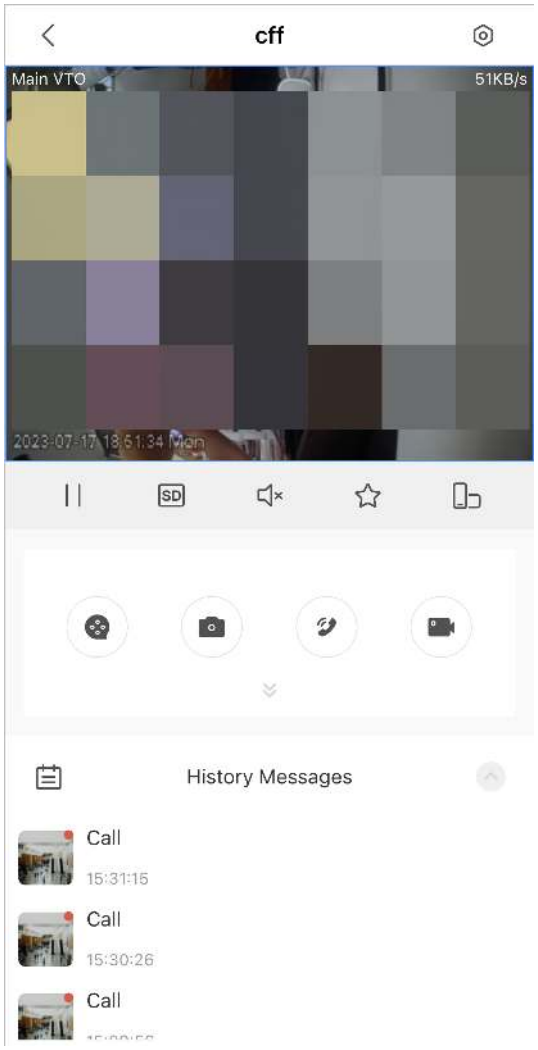


Table 7-1 Video call function icons

Function	Description
	Play/Pause.
/	Mute/Unmute.
	Change the image orientation to landscape.
	Favorites. Select a video, tap , and then select an existing file that you want to save the video to.
/	Video stream. Tap the icon to switch between SD and HD video quality.
	Video playback.
	Take snapshot.
	Video recording.
/	Answer/End the call.

7.6 DMSS Calling VTO

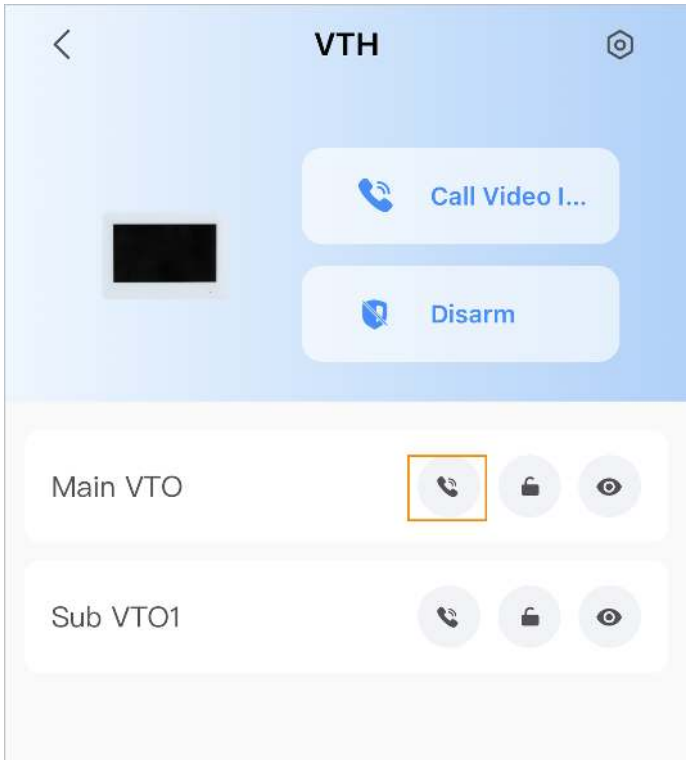
Procedure

Step 1 On the **Home** screen, tap , select the VTH you have just added, and then tap **Device Details** to go to the function screen.

Step 2 Tap to call the VTO you added to the DMSS.

If there are more than one VTO, you can call the main VTO and sub VTO respectively.

Figure 7-14 Call VTO



7.7 DMSS Calling VTH

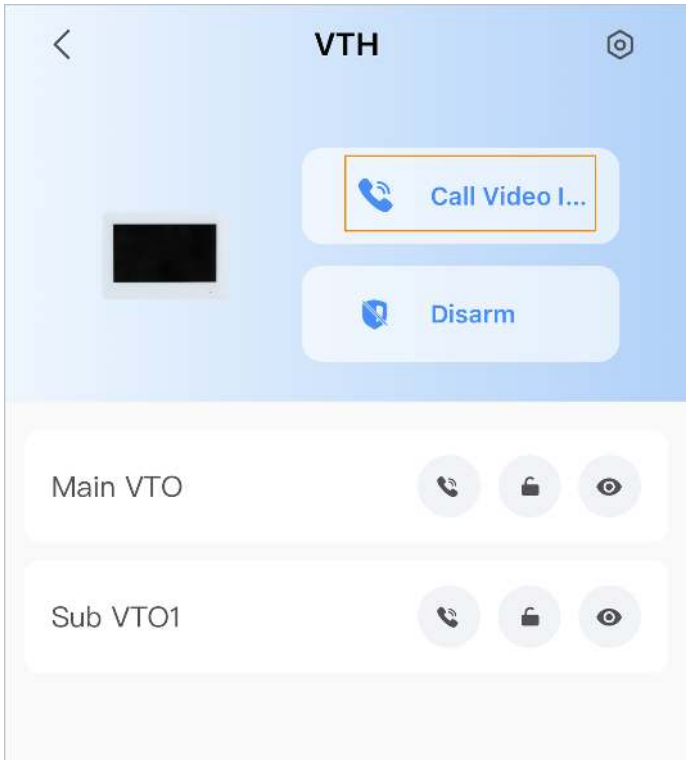
Make sure that the VTH and VTO are properly connected.

Procedure

Step 1 On the **Home** screen, tap ···, select the VTH you have just added, and then tap **Device Details** to go to the function screen.

Step 2 Tap **Call Video Intercom** to call the VTH you added to the DMSS.

Figure 7-15 Call VTH



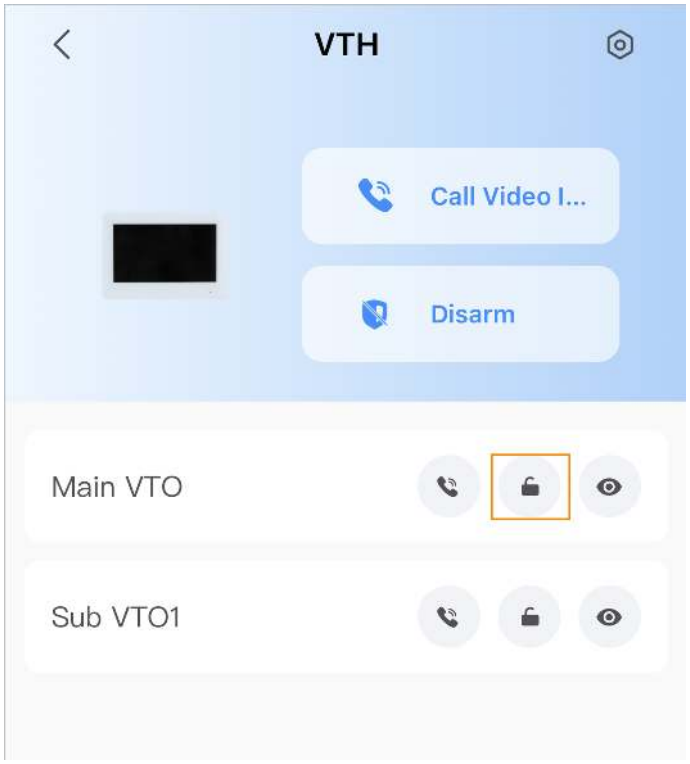
7.8 DMSS Unlocking Door

Procedure

Step 1 On the **Home** screen, tap ···, select the VTH you have just added, and then tap **Device Details** to go to the function screen.

Step 2 Tap to unlock the door.

Figure 7-16 Unlock the door



7.9 Device Sharing

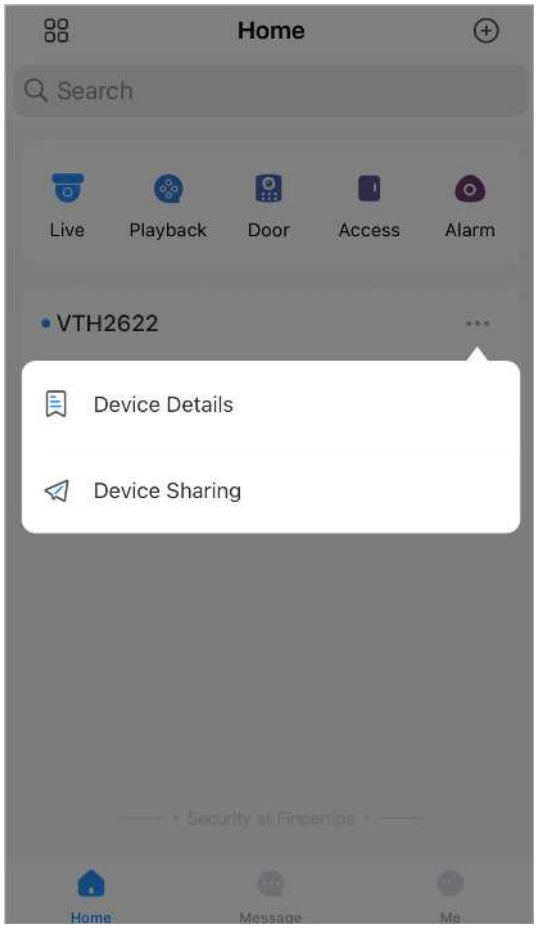
Once one user has added the VTH, the user can share the binding relationship with other users.

Procedure

Step 1 On the **Home** screen, select the VTH you have just added, and tap the ⋯.

Step 2 Select **Device Sharing**.

Figure 7-17 Device sharing (1)



Step 3 On the **Device Sharing** screen, tap to scan the QR code of the users you want to share the device.

Figure 7-18 Device sharing (2)

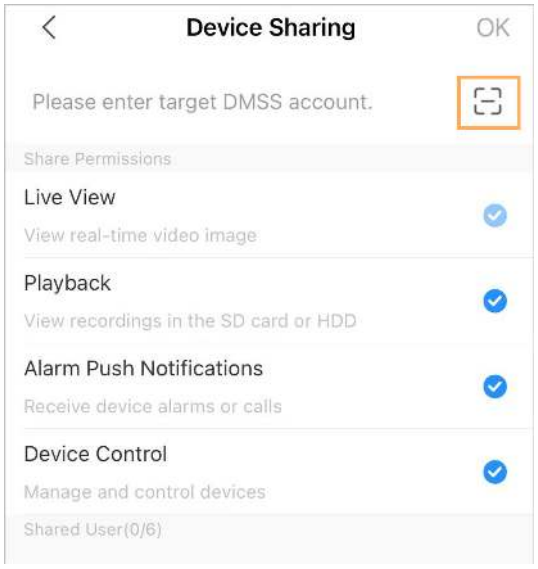


Figure 7-19 Scan QR code of the user you want to share

Step 4 After scanning the QR code, the user that receives the sharing has to refresh the **Home** screen to update the sharing information. Otherwise, the shared device information would be not synchronized automatically.

Related Operations

To obtain the QR code of the user that receives the sharing

1. Log in to the DMSS account of the user that to receive the sharing.
2. Tap **Me**, and tap the QR code icon at the top of the screen.

Figure 7-20 Obtain the QR code

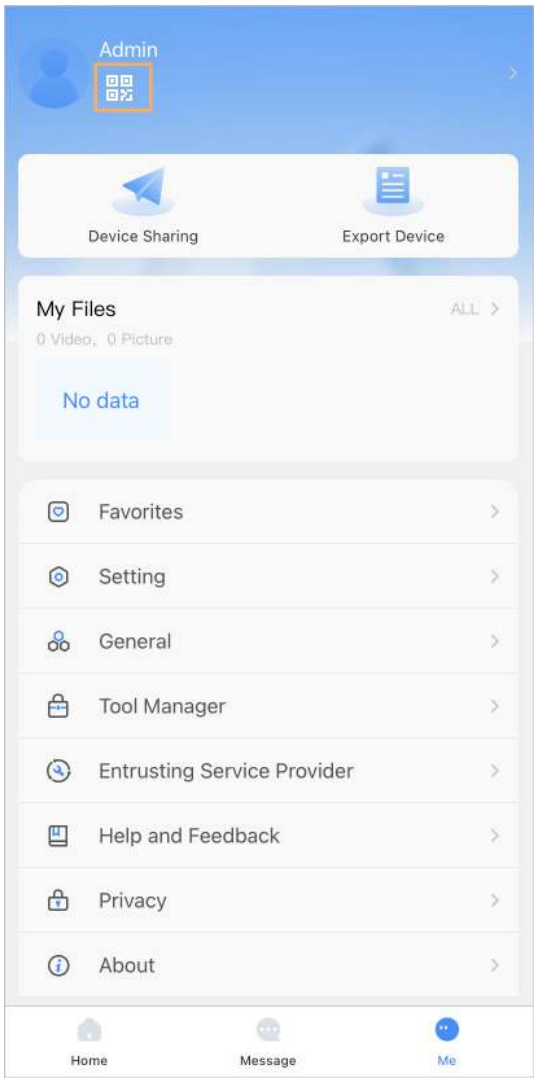
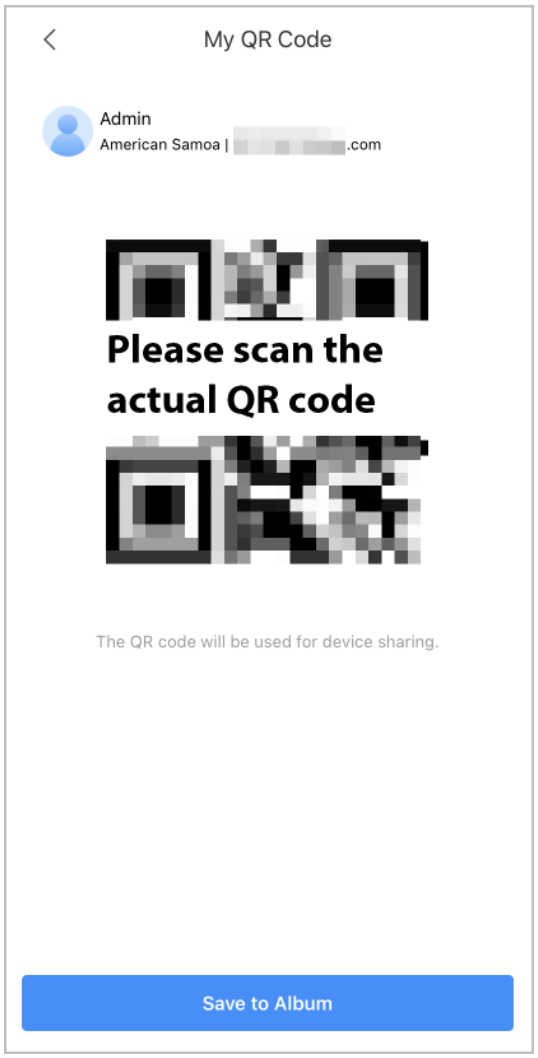


Figure 7-21 Obtain the QR code (2)



Appendix 1 Security Recommendation

Account Management

1. **Use complex 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: 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 repeating characters, such as 111, aaa, etc.
2. **Change passwords periodically**

   It is recommended to periodically change the device password to reduce the risk of being guessed or cracked.
3. **Allocate accounts and permissions appropriately**

   Appropriately add users based on service and management requirements and assign minimum permission sets to users.
4. **Enable account lockout function**

   The account lockout function is enabled by default. You are advised to keep it enabled to protect account security. After multiple failed password attempts, the corresponding account and source IP address will be locked.
5. **Set and update password reset information in a timely manner**

   The device supports password reset function. To reduce the risk of this function being used by threat actors, if there is any change in the information, please modify it in time. When setting security questions, it is recommended not to use easily guessed answers.

Service Configuration

1. **Enable HTTPS**

   It is recommended that you enable HTTPS to access web services through secure channels.
2. **Encrypted transmission of audio and video**

   If your audio and video data contents are very important or sensitive, it is recommended to use encrypted transmission function in order to reduce the risk of your audio and video data being eavesdropped during transmission.
3. **Turn off non-essential services and use safe mode**

   If not needed, it is recommended to turn off some services such as SSH, SNMP, SMTP, UPnP, AP hotspot etc., to reduce the attack surfaces.

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

   - SNMP: Choose SNMP v3, and set up strong encryption and authentication passwords.
   - SMTP: Choose TLS to access mailbox server.
   - FTP: Choose SFTP, and set up complex passwords.
   - AP hotspot: Choose WPA2-PSK encryption mode, and set up complex passwords.
4. **Change HTTP and other default service ports**

   It is recommended that you change the default port of HTTP and other services to any port between 1024 and 65535 to reduce the risk of being guessed by threat actors.

Network Configuration

1. **Enable Allow list**

   It is recommended that you turn on the allow list function, and only allow IP in the allow list to access the device. Therefore, please be sure to add your computer IP address and supporting device IP address to the allow list.
2. **MAC address binding**

   It is recommended that you bind the IP address of the gateway to the MAC address on the device to reduce the risk of ARP spoofing.
3. **Build a secure network environment**

   In order to better ensure the security of devices and reduce potential cyber risks, the following are recommended:

   - Disable the port mapping function of the router to avoid direct access to the intranet devices from external network;
   - According to the actual network needs, partition the network: if there is no communication demand between the two subnets, it is recommended to use VLAN, gateway and other methods to partition the network to achieve network isolation;
   - Stablish 802.1x access authentication system to reduce the risk of illegal terminal access to the private network.

Security Auditing

1. **Check online users**

   It is recommended to check online users regularly to identify illegal users.
2. **Check device log**

   By viewing logs, you can learn about the IP addresses that attempt to log in to the device and key operations of the logged users.
3. **Configure network log**

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

Software Security

1. **Update firmware in time**

   According to the industry standard operating specifications, the firmware of devices needs to be updated to the latest version in time in order to ensure that the device has the latest functions and security. If the device is connected to the public network, it is recommended to enable the online upgrade automatic detection function, so as to obtain the firmware update information released by the manufacturer in a timely manner.
2. **Update client software in time**

   It is recommended to download and use the latest client software.

Physical Protection

It is recommended that you carry out physical protection for devices (especially storage devices), such as placing the device in a dedicated machine room and cabinet, and having access control

and key management in place to prevent unauthorized personnel from damaging hardware and other peripheral equipment (e.g. USB flash disk, serial port).