

2-Wire Analog Indoor Monitor

User Manual



V1.0.6

Foreword

General

This manual introduces the structure, functions, and operations of the EACH indoor monitor (hereinafter referred to as "the VTH"). Read carefully before using the device, and keep the manual safe for future reference.

Symbols

The following symbols might appear in the manual.

Symbol	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
V1.0.6	Added a new model.	April 2026
V1.0.5	Revised network diagram.	December 2025
V1.0.4	Revised network diagram.	February 2025
V1.0.3	● Revised DIP configuration. ● Revised network diagram.	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, you might collect the personal data of individuals such as their names, email addresses, face images, audio and fingerprints. You shall be fully responsible for any activities associated with processing personal data. You commit to comply with your local privacy protection laws and regulations to protect the legitimate rights and interests of individuals, and shall implement measures which are required by applicable law, including but not limited to, providing clear and comprehensive information to individuals before processing their personal data, obtaining consent from individuals when necessary, informing individuals of the existence of the surveillance area, and providing required contact information.

Intelligent Product Usage Statement

Intelligent products utilize AI technology to effectively enhance security. The intelligent recognition and alarm functions of the product might be affected by factors such as environmental lighting, camera angles, object obstructions, and network delays, potentially leading to false alarms, missed alerts, or response delays. This intelligent product is solely intended to be used as a security assistance tool. The results from performing identification are for reference only and do not constitute absolute guarantee of personal or property safety. Users need to combine these products with necessary physical security measures to enhance overall protection. Except as otherwise provided by laws or in the event of intentional or gross negligence on the part of the company, the company shall not be liable for any losses caused by the aforementioned factors not attributable to the company.

About the Manual

- This manual is provided for general reference only. Discrepancies might exist between the product and this manual, including but not limited to printed, electronic, or any other editions.
- The manual will be updated according to the latest laws and regulations of related jurisdictions. Specifications and documentation are subject to change without prior notice. For the latest versions, as well as legal notices, consult the printed manual, the product webpage, our official website, or scan the QR code to access the electronic edition.
- The manual will be updated as necessary to reflect product changes and applicable legal requirements. These updates will not diminish your statutory rights, nor will they remove or weaken the safety information or essential instructions provided at the time of purchase.
- Although we make every effort to ensure accuracy, errors or deviations in descriptions of functions, operations, or technical data might occur. If there is any uncertainty or controversy, we reserve the right of final explanation.
- All trademarks, registered trademarks and company names referenced in this manual are the property of their respective owners.

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



- Strictly comply with the local electrical safety code and standards. Make sure that the ambient voltage is stable and meets the power supply requirements of the device.
- The power supply must meet the rated voltage requirements as indicated on the device label.
- If the device uses a power adapter, ensure it meets the following requirements:
 - ◇ If a power adapter was shipped with your device, we recommend you use it. If you need to buy a separate adapter, make sure it meets the following requirements.
 - 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.
 - ◇ Do not connect the power adapter to the device while the adapter is powered on.



- 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.
- The device must be installed at a height of 2 meters or below.

Operation Requirements



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.



Power supply must be certified by our company.

1.2 Function

2-Wire Communication

Supports the 2-wire communication system.

Video and Voice Call

Makes video and voice calls to other VTOs.

Monitoring

Monitors VTOs and HDCVI cameras.

Snapshot

Takes snapshot or records the video when monitoring the VTO or the HDCVI camera.

DND (Do Not Disturb)

Mutes call notifications.

Remote Unlock

Unlocks doors remotely.

Playback

Displays videos and pictures from the SD card.

Custom Function

You can customize the function for buttons. For example, press the configured button to directly monitor the VTO or the HDCVI camera, and enable DND mode or unlock the door.

2 Network Diagram

2.1 Network Diagram for Villa Scenario

The network diagram below displays all the networking scenarios.

The following images are for reference only. Different devices might differ according to the actual models.



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.

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 for VTH10X3J (without line termination terminal and branch terminal)

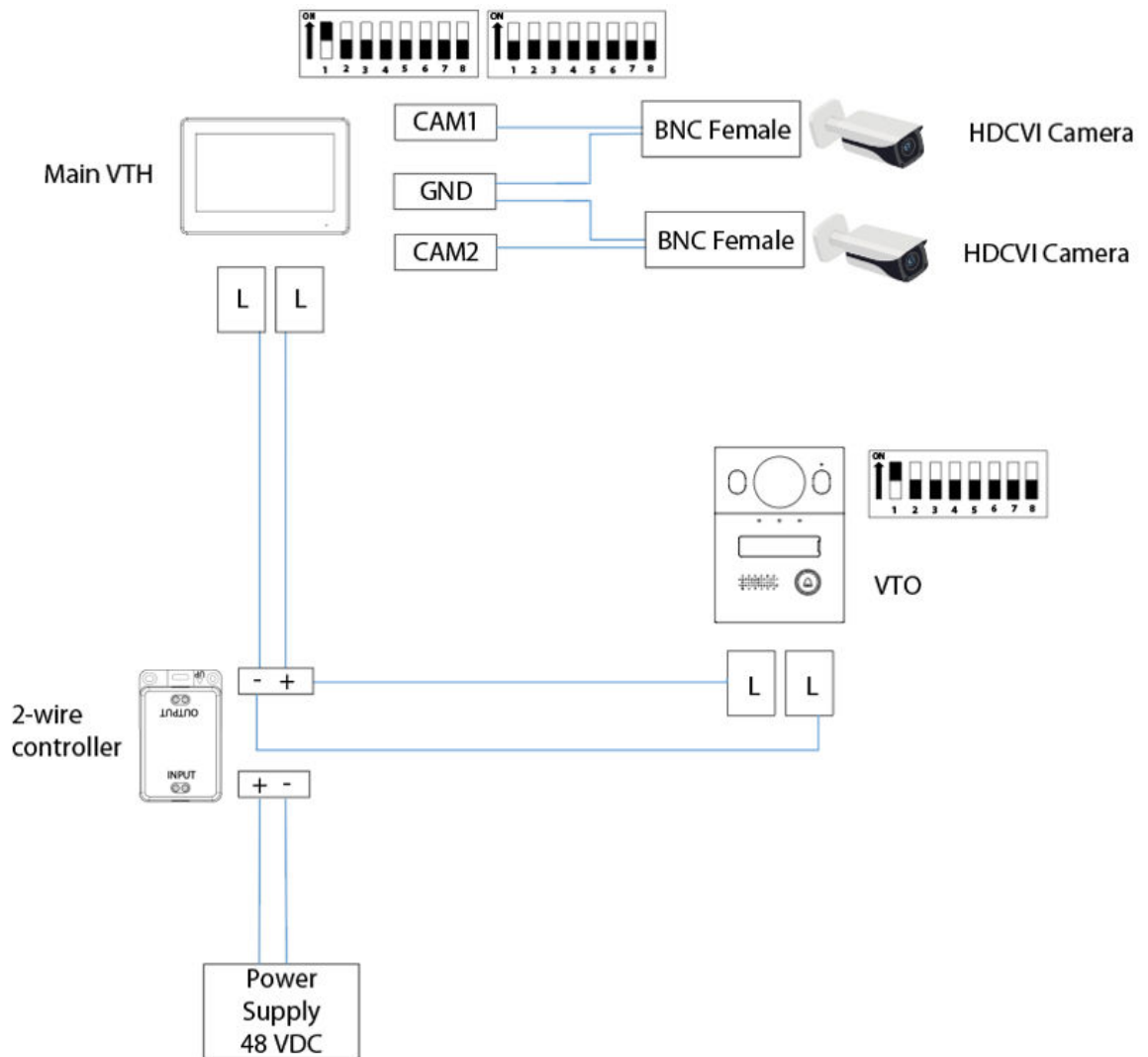


Figure 2-2 Network diagram for VTH10X3J-S2 (without line termination terminal and branch terminal)

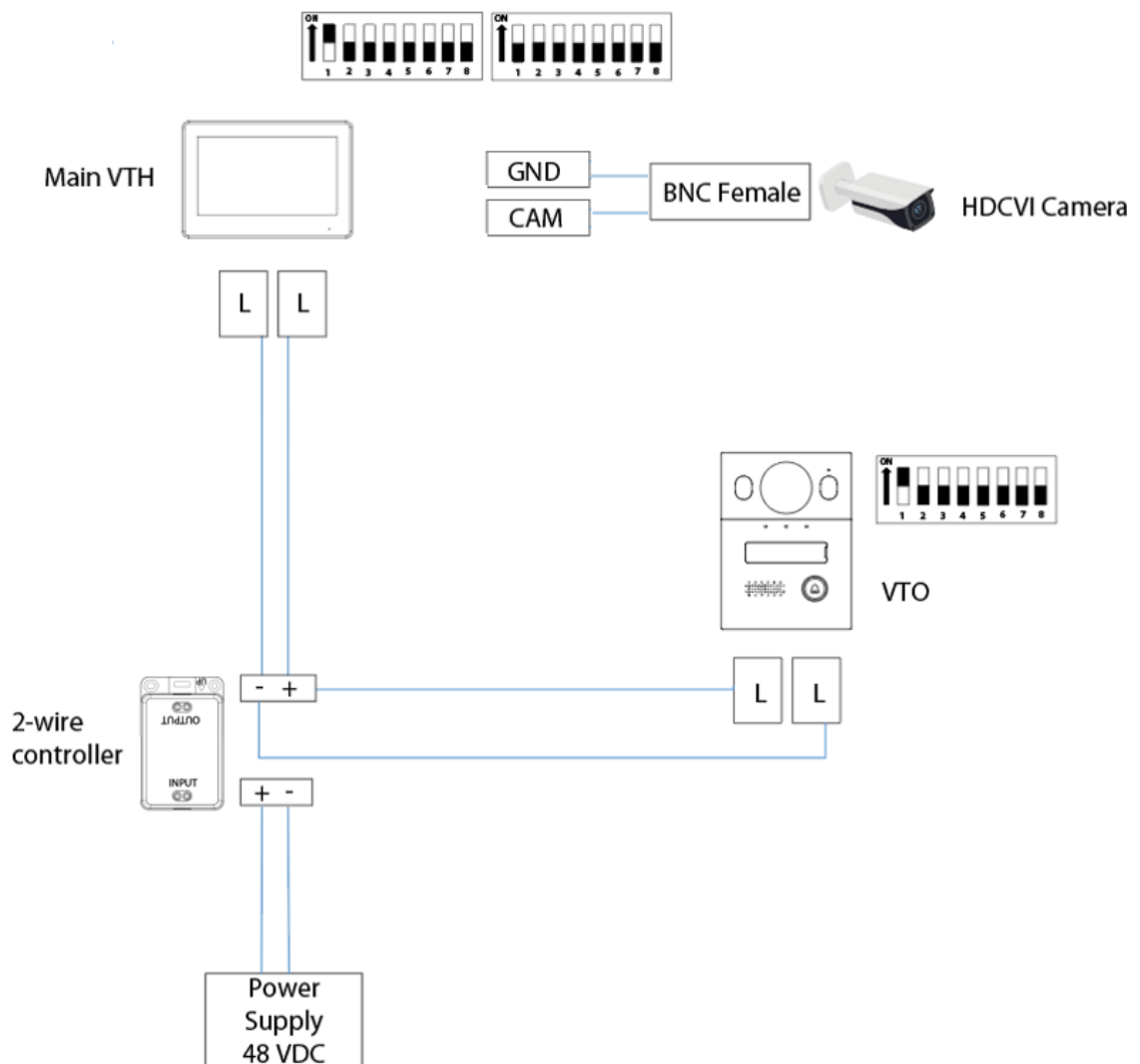


Figure 2-3 Network diagram for VTH10X3J (with line termination terminal and branch terminal)

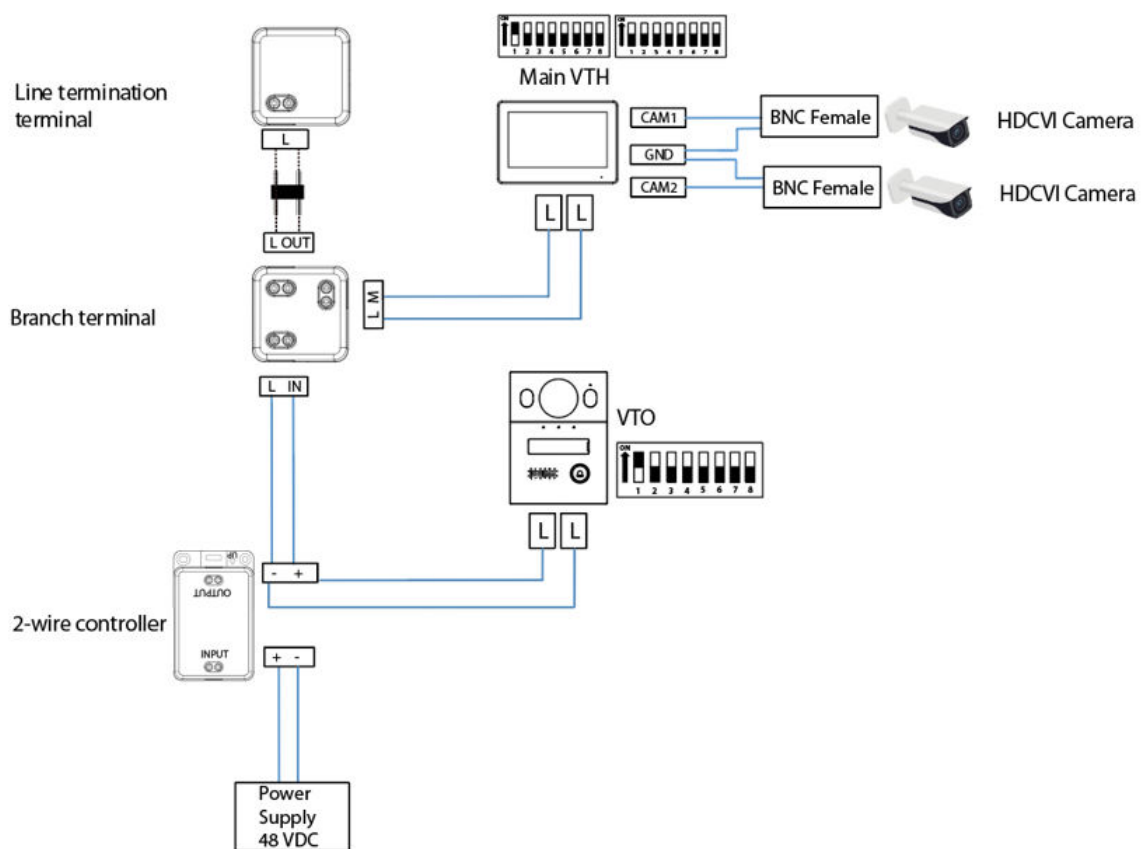
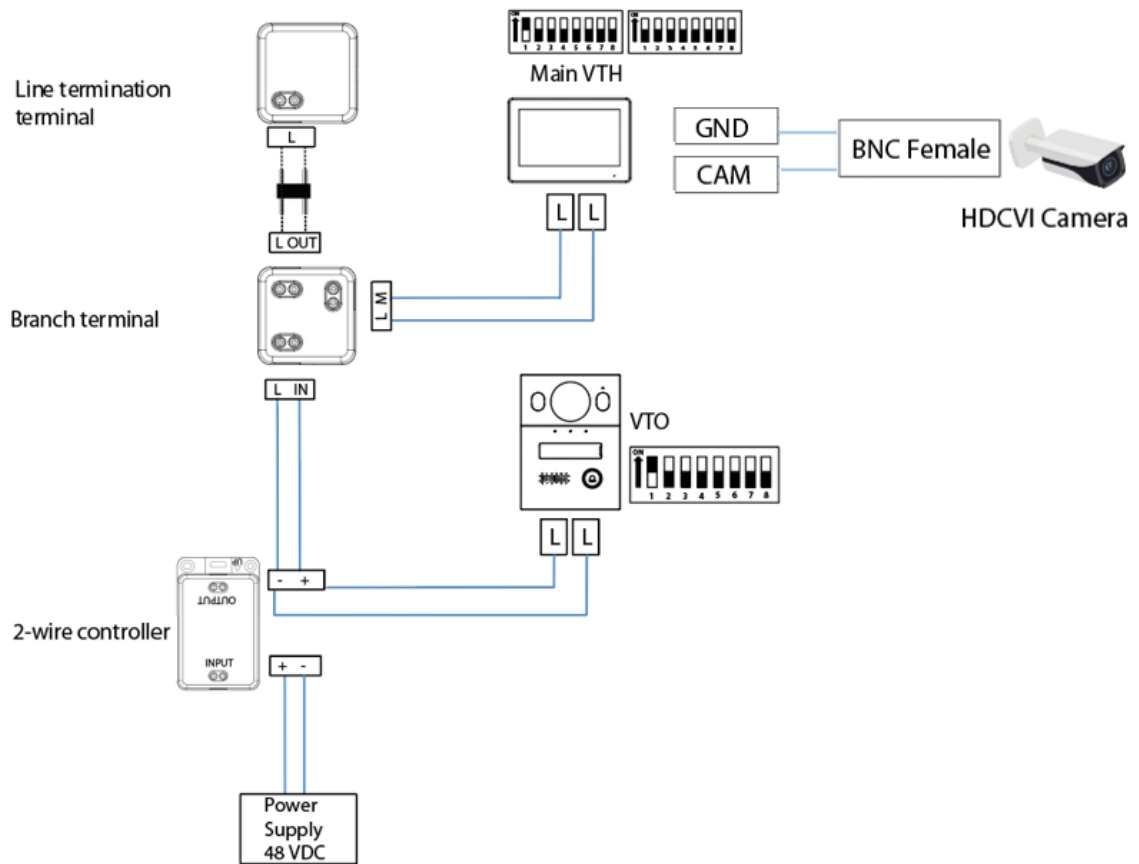


Figure 2-4 Network diagram for VTH10X3J-S2 (with line termination terminal and branch terminal)



Wiring 1 VTO and 2 VTHs (Cascade Connection)

Figure 2-5 Network diagram for VTH10X3J

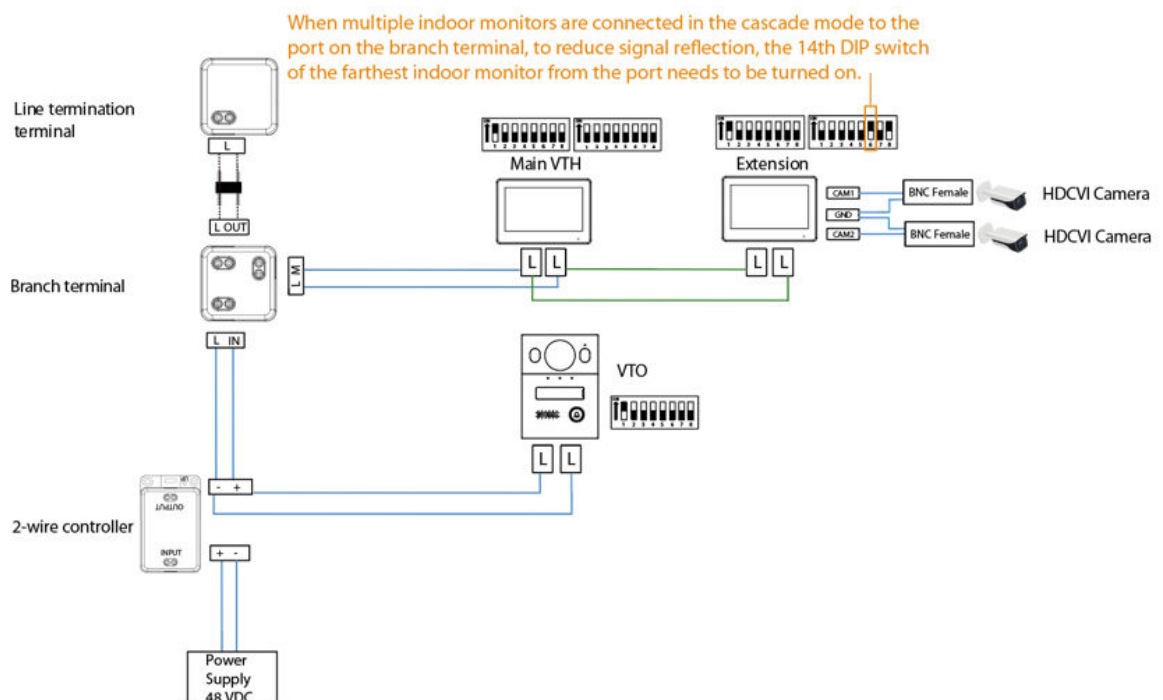
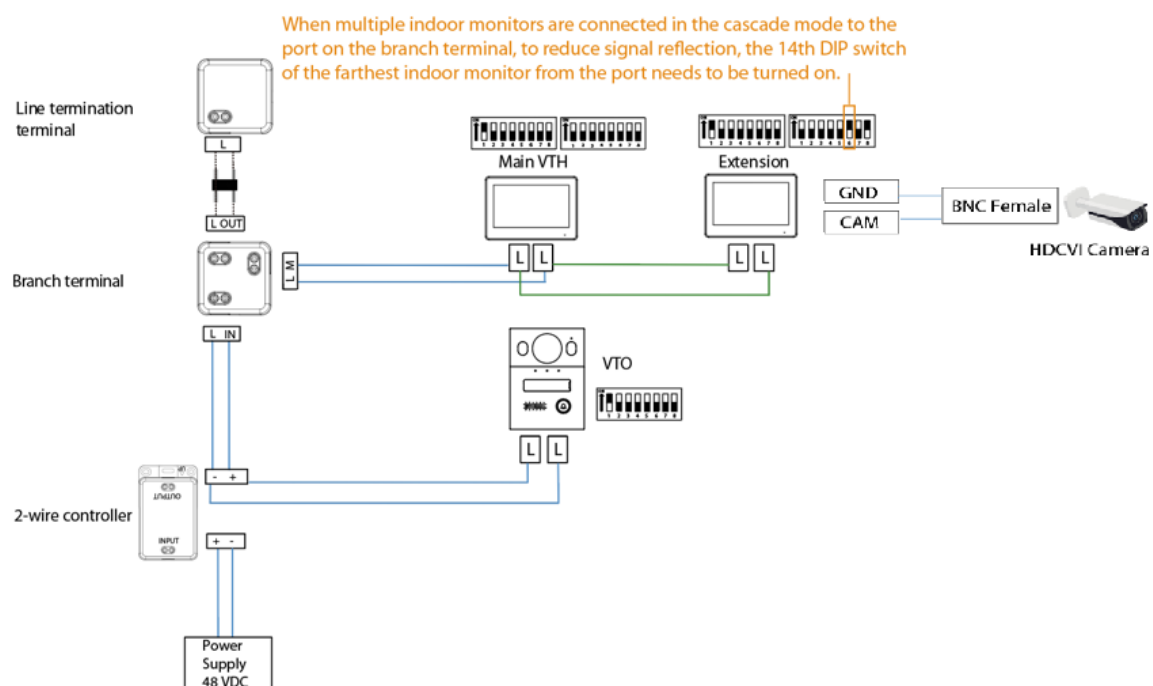


Figure 2-6 Network diagram for VTH10X3J-S2



Wiring 1 VTO and 2 VTHs (Parallel Connection)

Figure 2-7 Network diagram for VTH10X3J

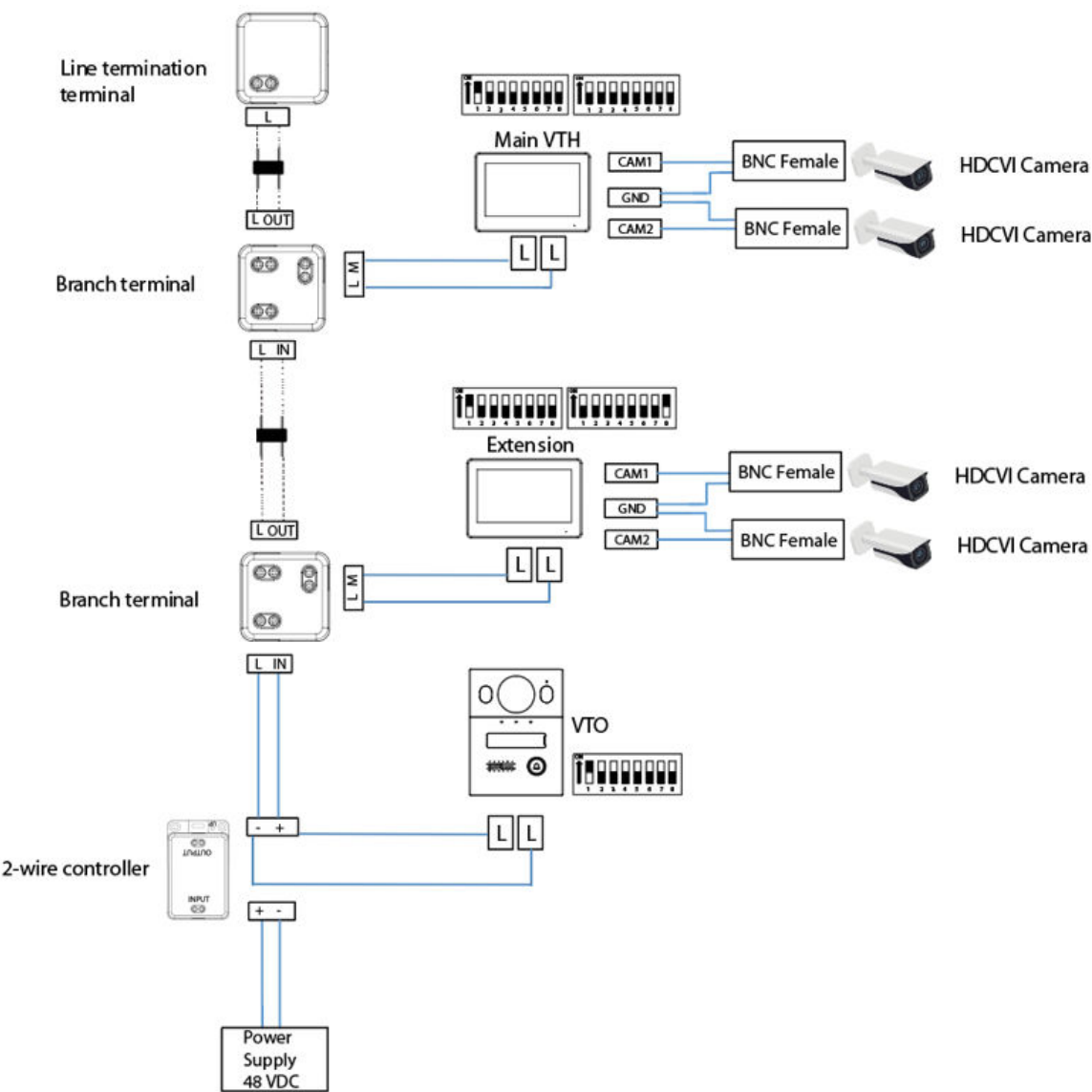
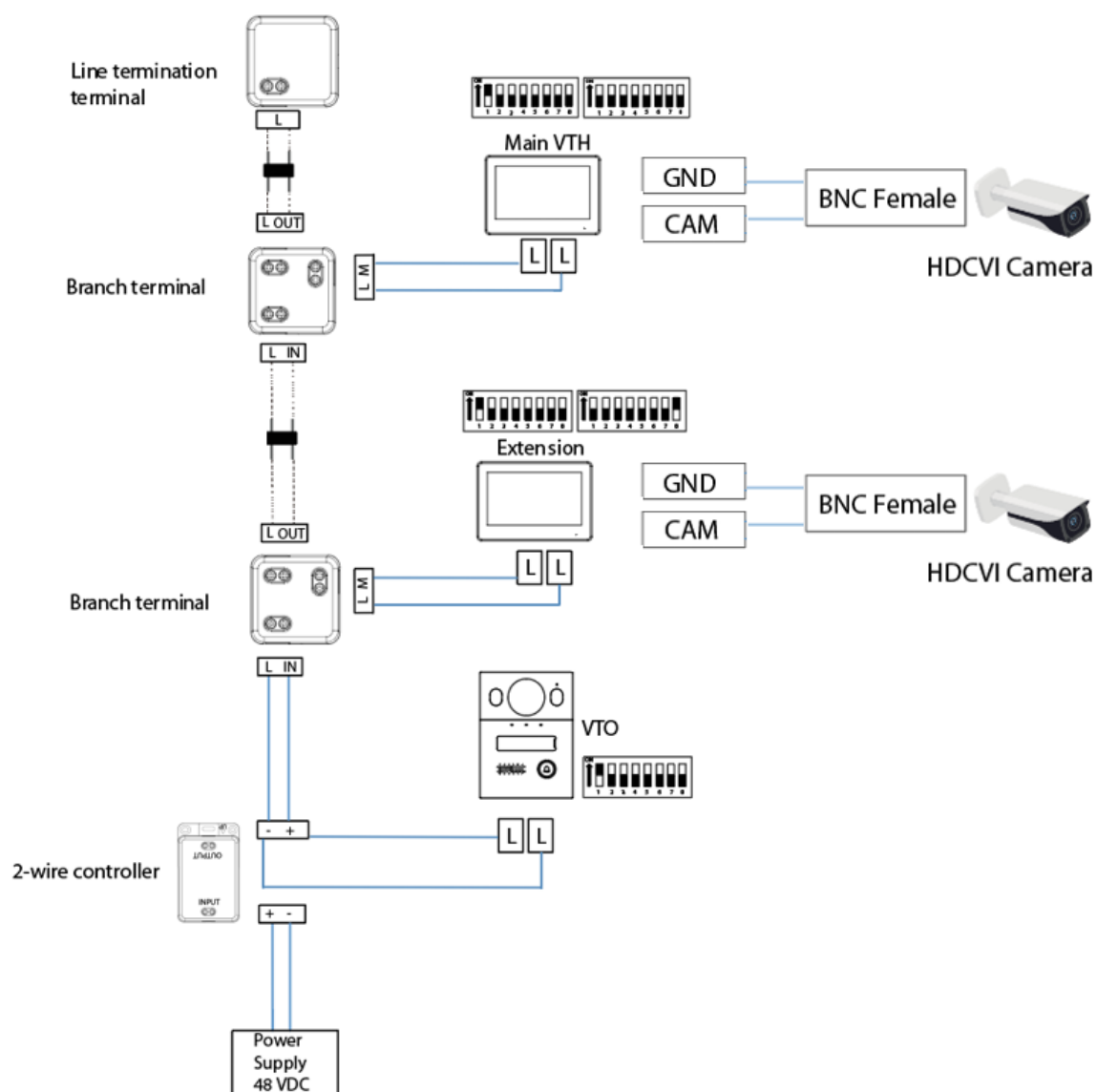


Figure 2-8 Network diagram for VTH10X3J-S2



Wiring 2 VTOs and 4 VTHs



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

Figure 2-9 Network diagram for VTH10X3J

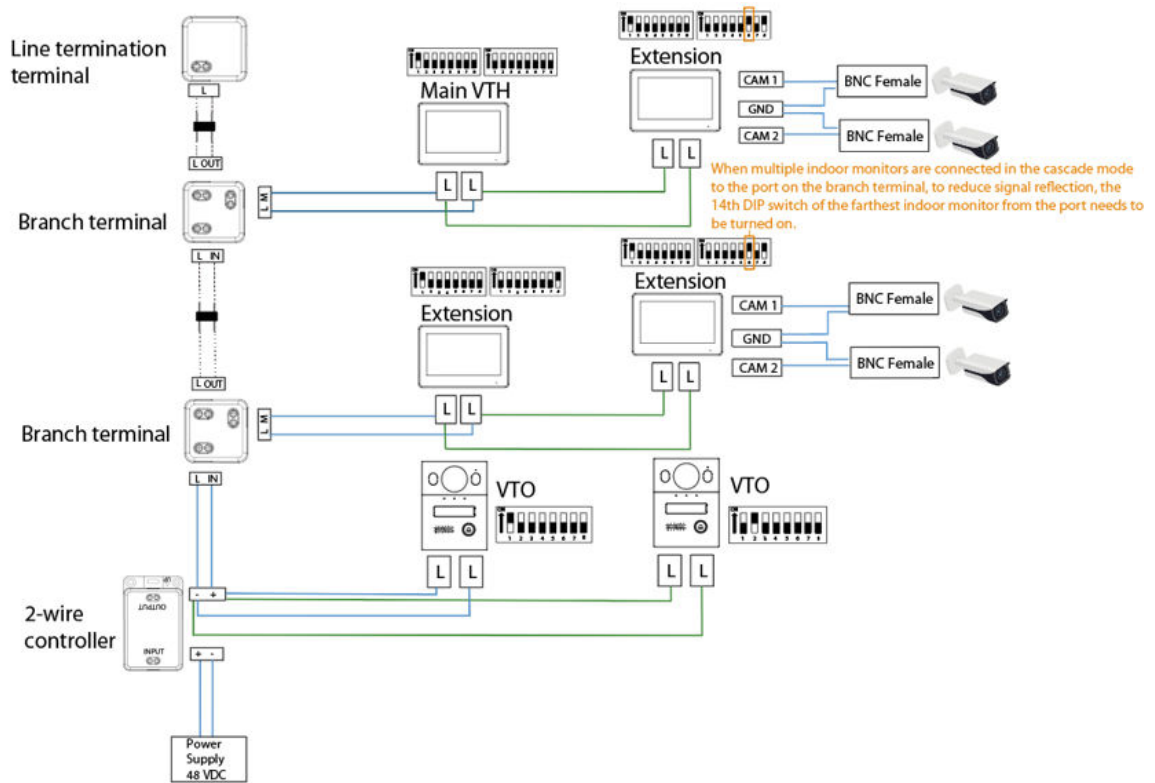
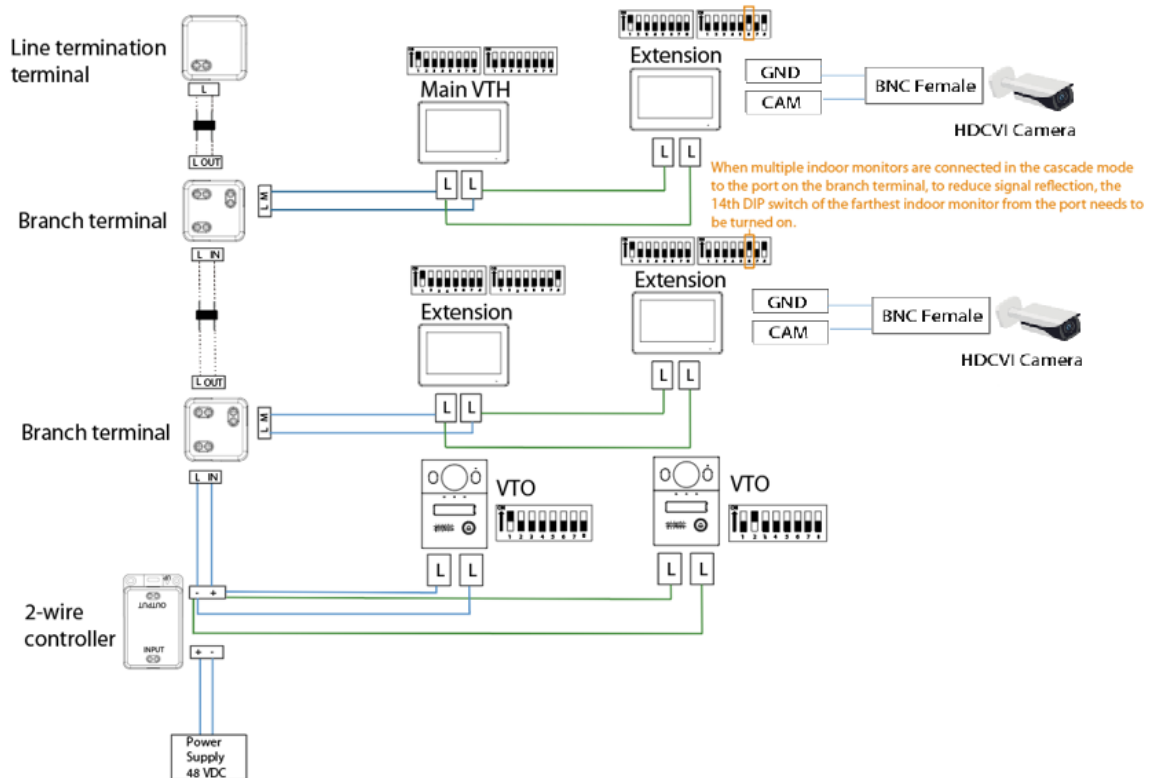


Figure 2-10 Network diagram for VTH10X3J-S2



Wiring Distance Between the VTH and VTO



- We recommend 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 2-11 Max distance for VTH10X3J

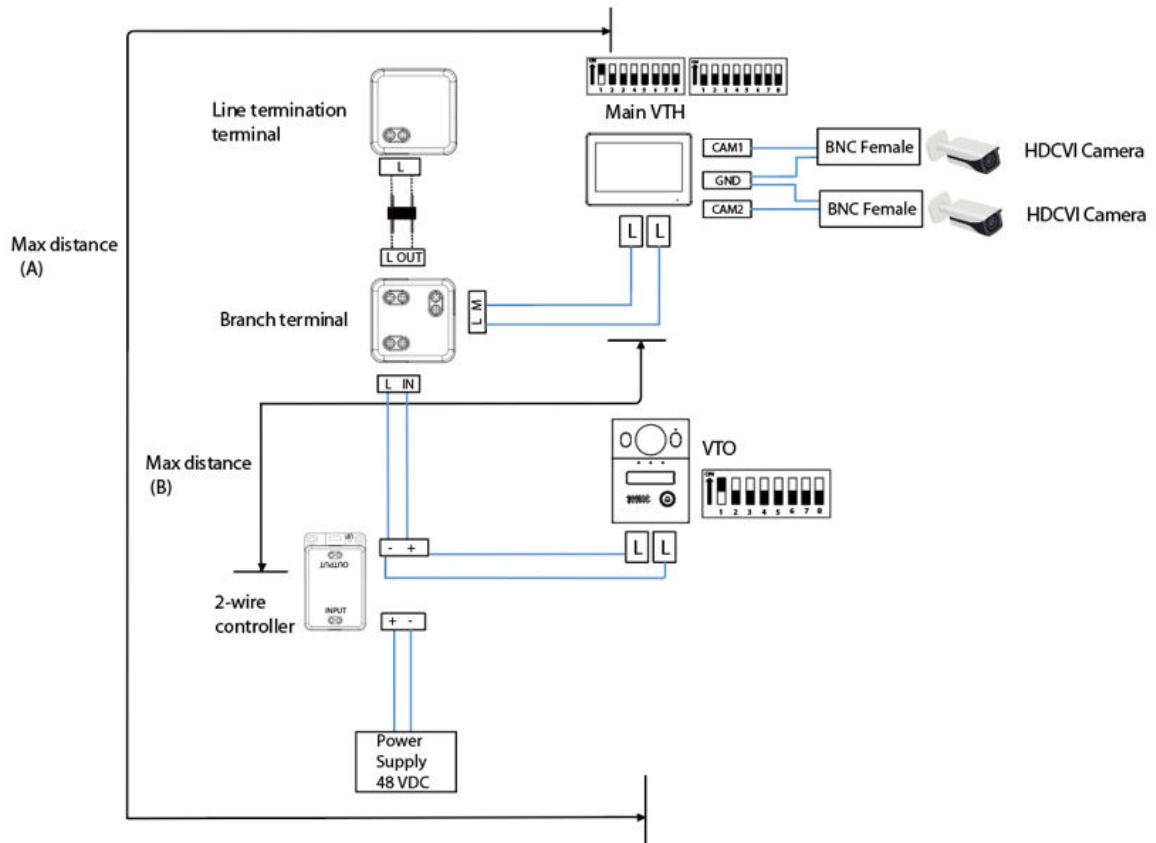


Figure 2-12 Max distance for VTH10X3J-S2

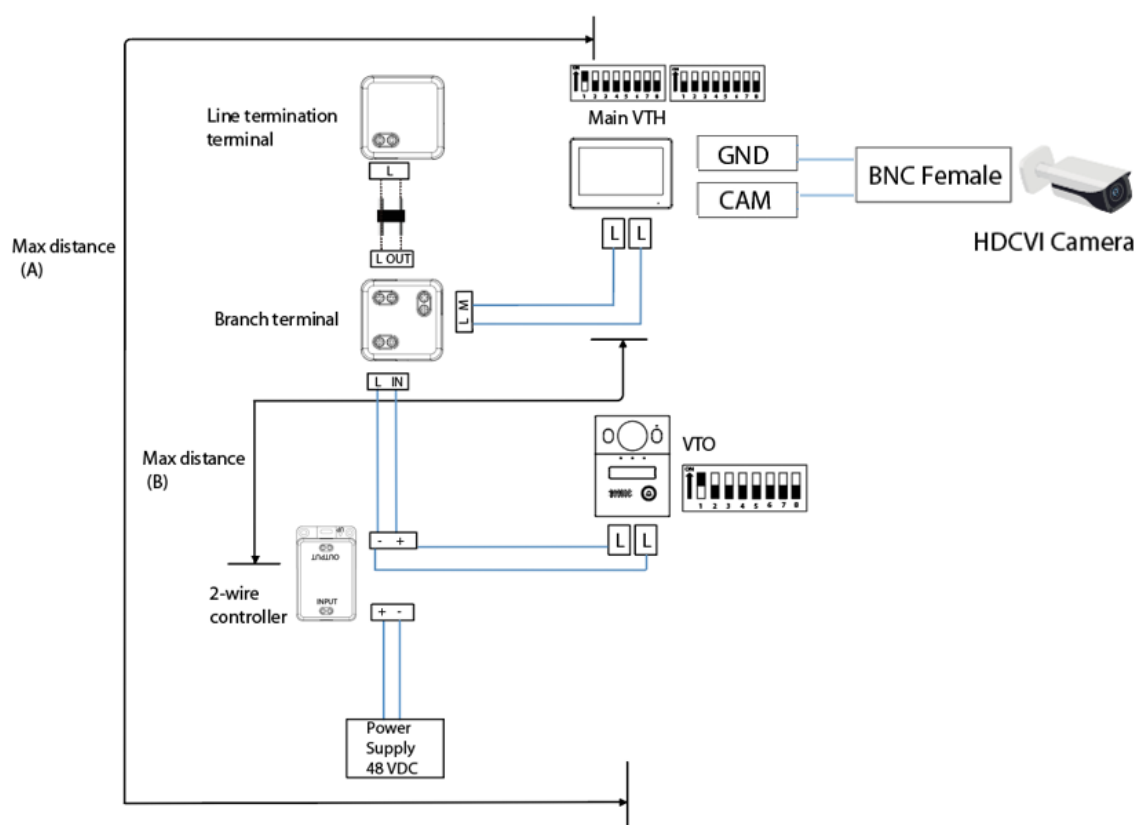


Table 2-1 Wiring distance

RVW Cable	AWG	Max. Distance (A)	Max. Distance (B)	Max. Quantity of Terminals
$2 \times 0.5 \text{ mm}^2$ (Recommended)	20	180 m	100 m	6
$2 \times 1.5 \text{ mm}^2$	15	180 m	100 m	6

Table 2-2 Wiring distance

RVVP Cable	AWG	Max. Distance (A)	Max. Distance (B)	Max. Quantity of Terminals
$2 \times 0.5 \text{ mm}^2$	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

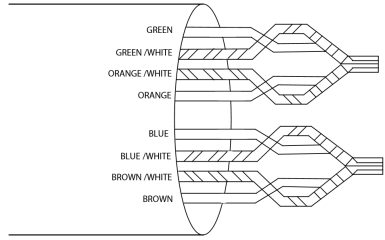
Network Cable	AWG	Max. Distance (A)	Max. Distance (B)	Max. Quantity of Terminals
Multi Pair Cable 	24	200 m	100 m	6

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

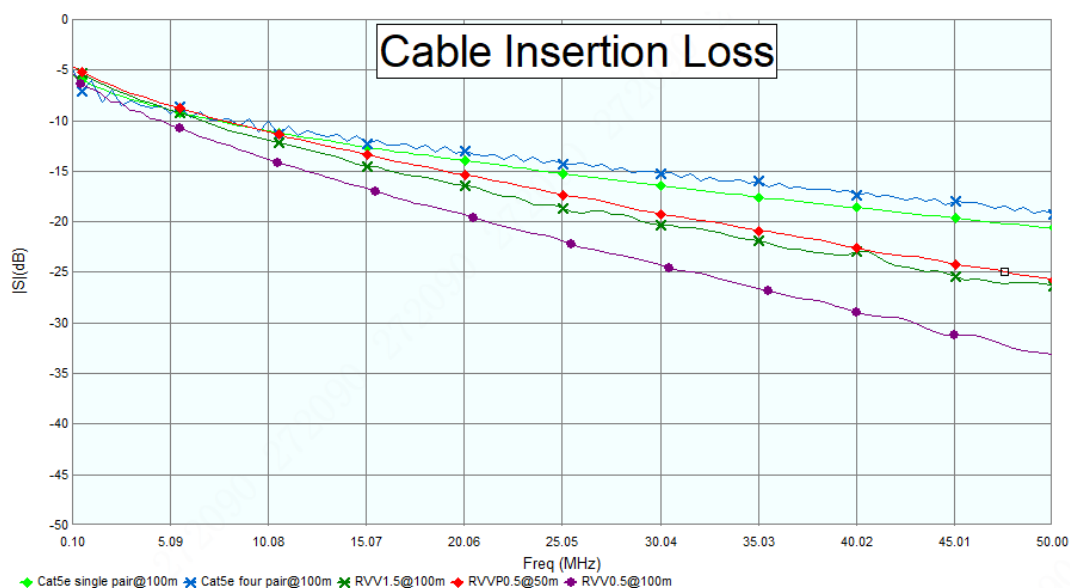
Insertion loss refers to the situation of sending a signal from one end of the cable and receiving the signal at the other end of the cable.

The calculation of cable insertion loss is as follows: $\text{Insertion Loss} = 20 \times \log(\text{signal received}/\text{signal sent})$



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 2-13 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.

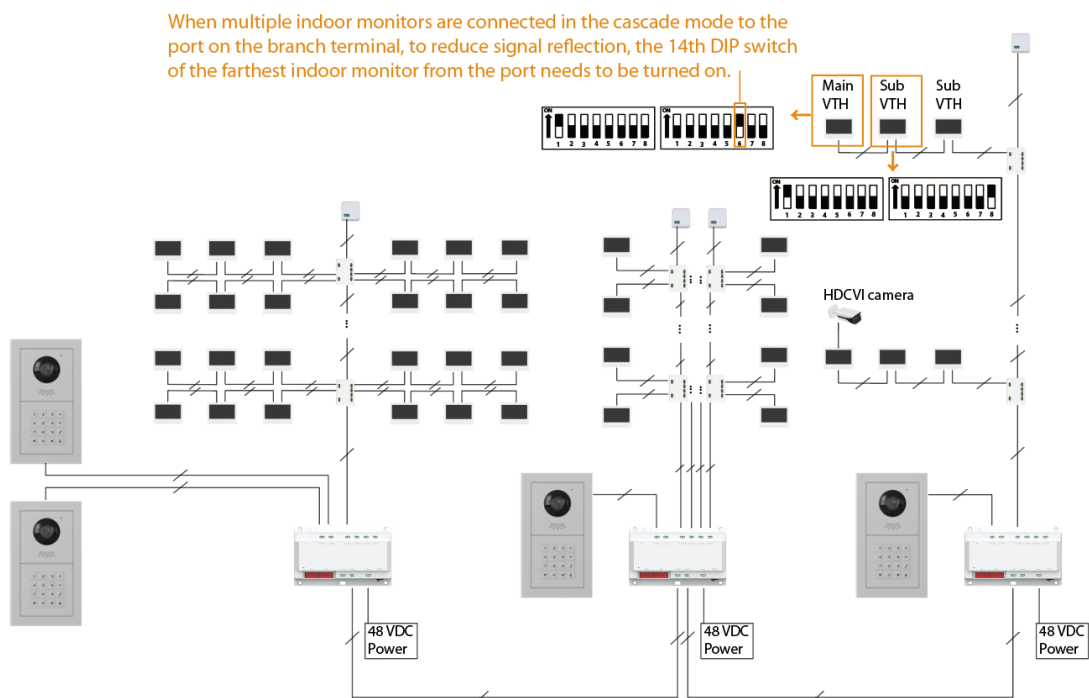
Refer to the following image to configure the DIP switch of the device in the cascade. The DIP switch of ID should be configured according to the actual situation.



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

Network Diagram

Figure 2-14 Network diagram

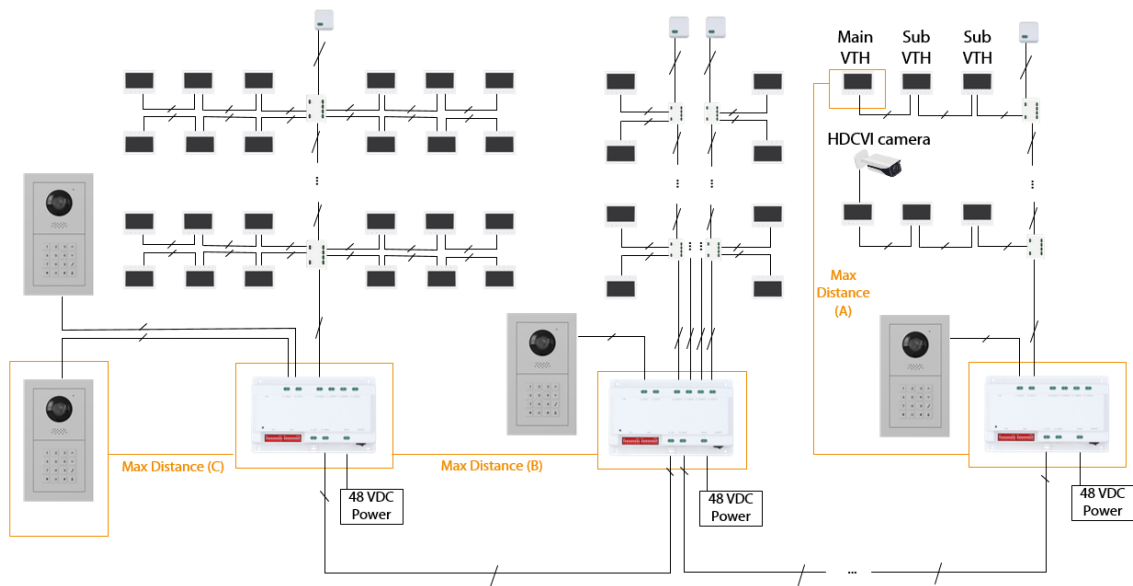


Wiring Distance between the Controller, VTH and the VTO



- Max distance (A) refers to the distance between the 2-wire controller and the VTH. $A \leq 100$ m.
- Max distance (B) refers to the distance between the cascading 2-wire controllers. $B \leq 100$ m.
- Max distance (C) refers to the distance between the 2-wire controller and the VTO. $C \leq 100$ 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 2-15 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.



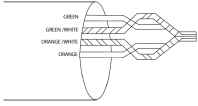
- The 2-wire VTHs with the Wi-Fi function can work at the same time. The number of 2-wire VTHs without the Wi-Fi function that work at the same time is 5% of the maximum capacity according to different cable specifications and distances.
- The capacity values are based on the default settings for voice 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 mm ² (Recommended)	AWG 15	With Wi-Fi	22	22	22	17
			Without Wi-Fi	100	100	100	100
	RVV 2 × 1 mm ²	AWG 17	With Wi-Fi	22	22	18	13
			Without Wi-Fi	100	100	100	100
	RVV 2 × 0.5 mm ²	AWG 20	With Wi-Fi	22	17	11	8

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	91	68
Network cable  Connect the cables according to the cable color.	Cat5e Double Pair 	AWG 24	With Wi-Fi	22	14	9	7
			Without Wi-Fi	100	100	75	56
	Cat5e Single Pair	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 24	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

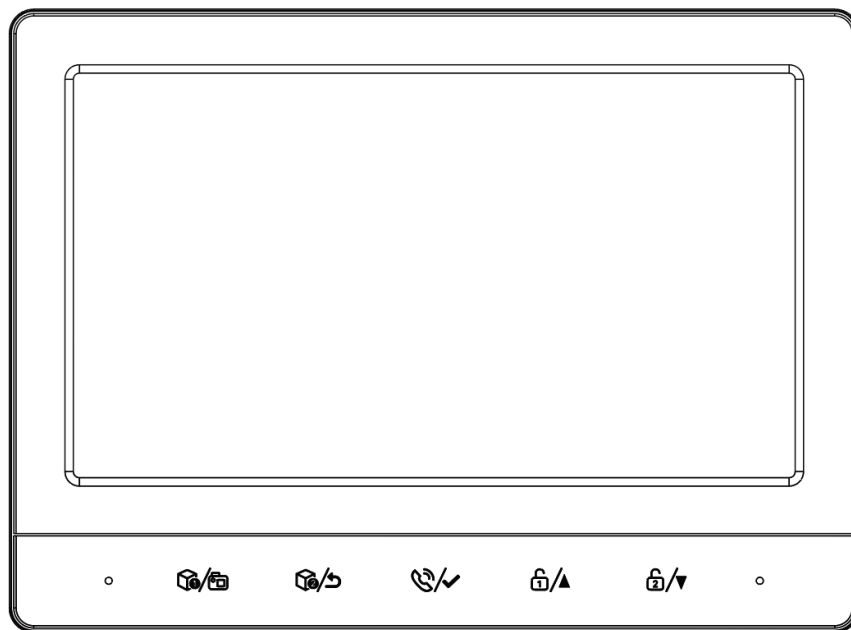
Cable Type	Cable Specification	AWG	C=0–25 m	C=26–50 m	C=51–75 m	C=76–100 m
	RVV 2 × 0.5 mm ²	AWG 20	2	2	2	2
Network cable	Double-pair network cable	AWG 24	2	2	2	2
	Single-pair network cable	AWG 24	2	2	1	1

3 Structure

3.1 Front Panel

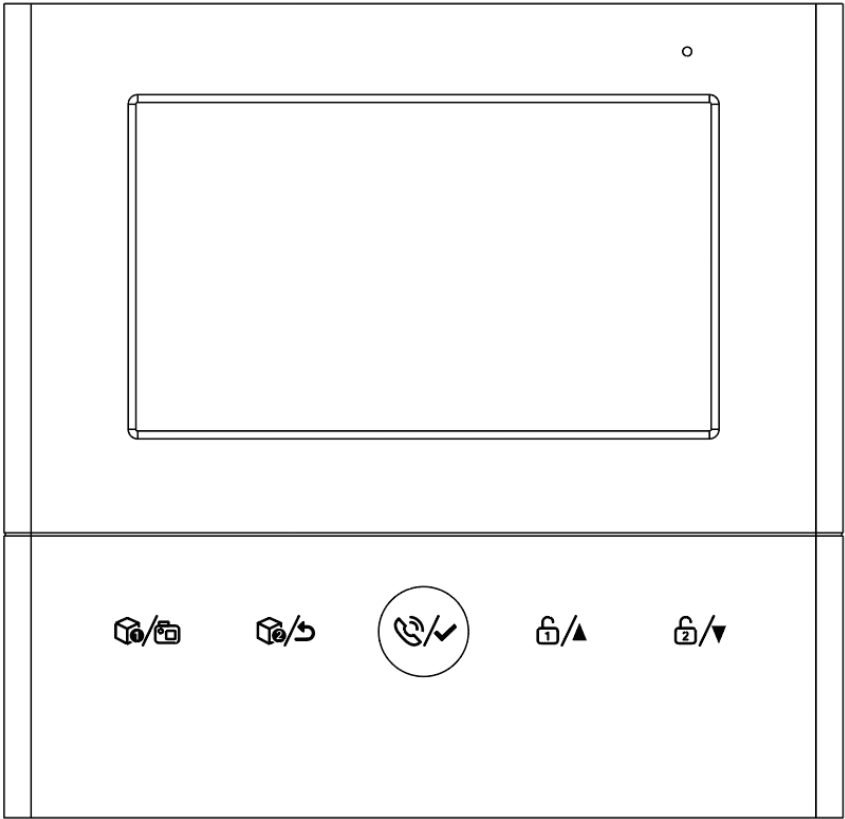
VTH with 7-inch screen

Figure 3-1 Front panel



VTH with 4.3-inch screen

Figure 3-2 Front panel



3.2 Rear Panel

VTH with 7-inch screen

Figure 3-3 Rear panel

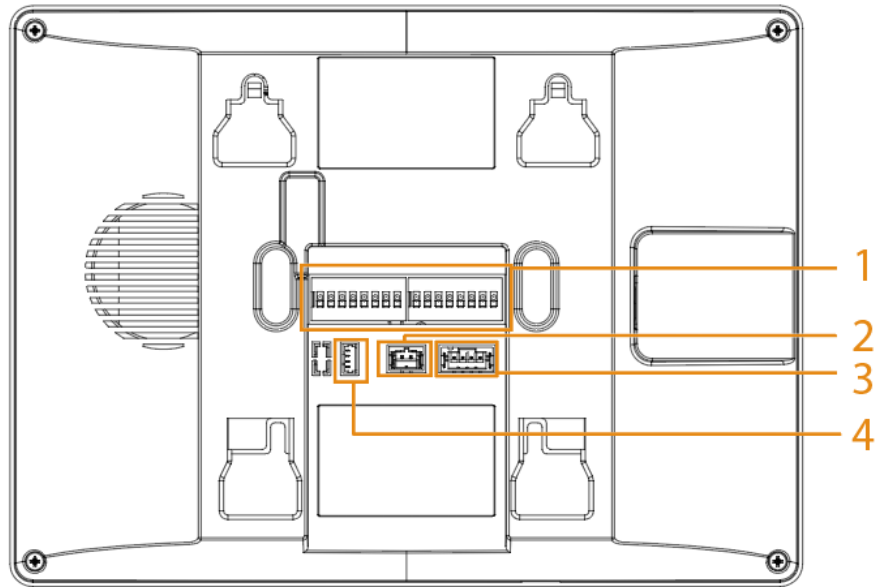


Table 3-1 Rear panel description

No.	Name	Description
1	Dual In-line Package (DIP) switch	Manually change the position of the actuator to the position that is 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	2-wire port	—
3	- For VTH10X3J model, it is 2-channel analog camera port. - For VTH10X3J-S2 model, it is 1-channel alarm input, and 1-channel analog camera port.	
4	Debugging port	—

VTH with 4.3-inch screen

Figure 3-4 Rear panel

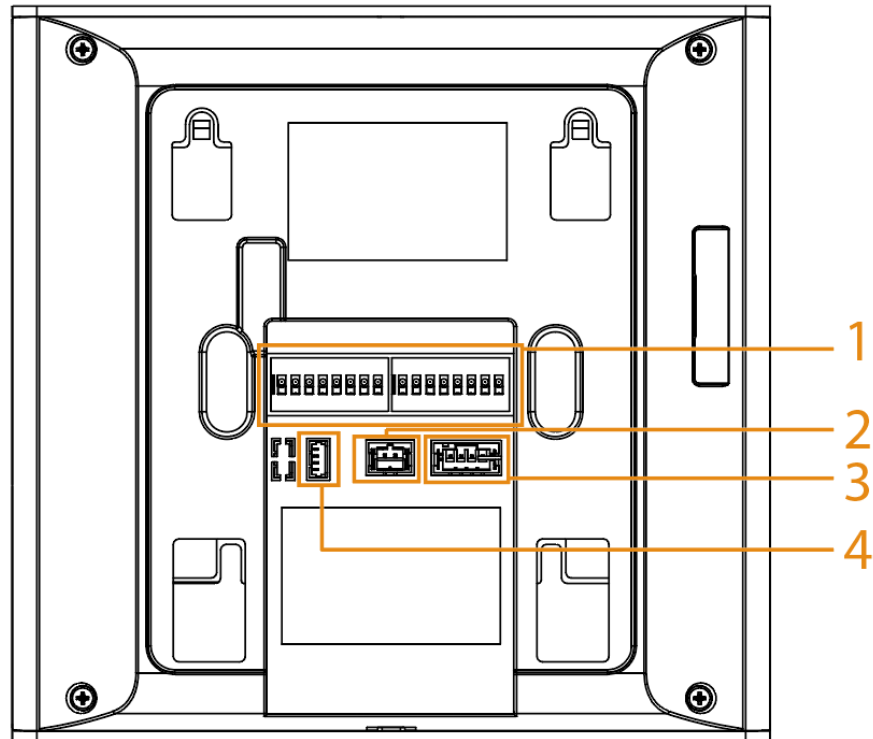


Table 3-2 Rear panel description

No.	Name	Description
1	Dual In-line Package (DIP) switch	Manually change the position of the actuator to the position that is 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	2-wire port	—
3	- For VTH10X3J model, it is 2-channel analog camera port. - For VTH10X3J-S2 model, it is 1-channel alarm input, and 1-channel analog camera port.	
4	Debugging port	—

4 Installation and Wiring

This chapter introduces the wiring of the device.



- 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.

Figure 4-1 Wiring port for VTH10X3J

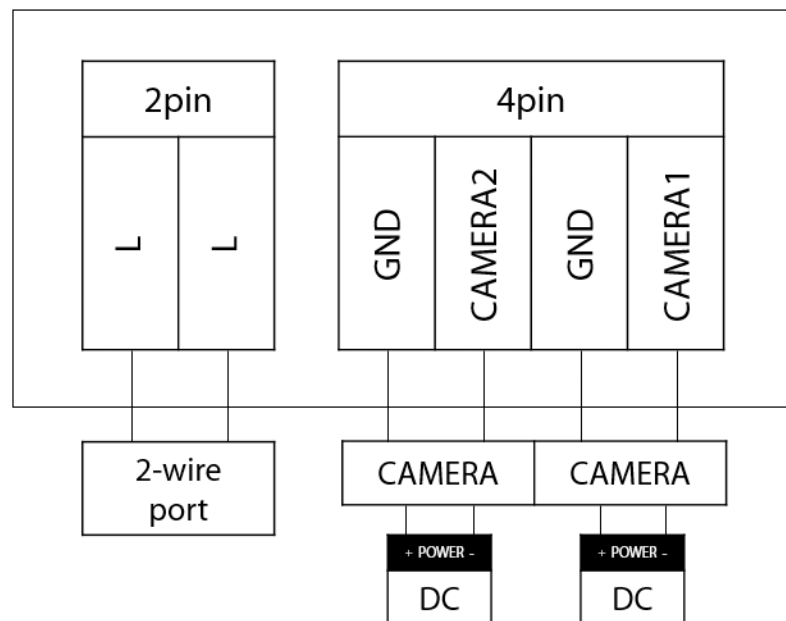
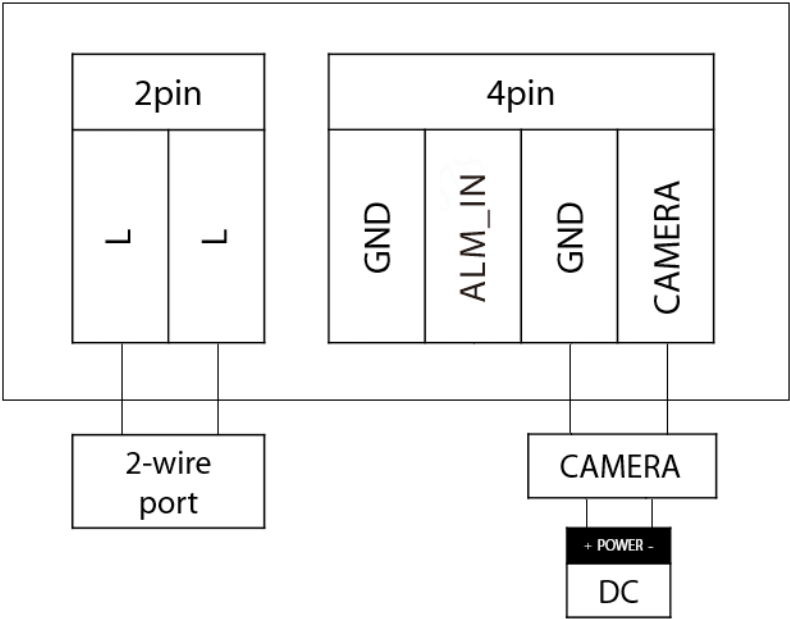


Figure 4-2 Wiring port for VTH10X3J-S2



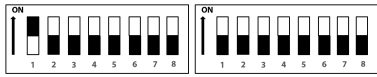
5 DIP Configuration

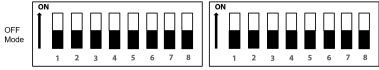
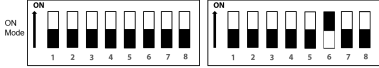
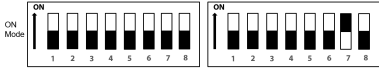
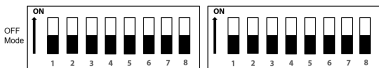


Move the actuator completely to the top or bottom position. If the actuator is in the middle position, it is considered to be in the top position.

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		—	Reserved

DIP Switch No.		Corresponding Address No.	Function
DIP 13		—	Reserved
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 ID 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.

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

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

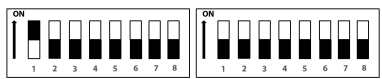
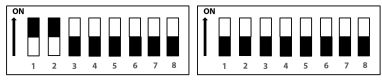
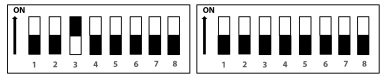
- Manually move the actuators corresponding to the DIP switches to the **ON** status, so that the ID of the VTH can be configured.

For example, if you want to set your VTH ID as 4, you need to first find the mapping relationship (DIP 3 equals to the ID 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 ID 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 ID 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 ID (1-20) and their corresponding DIP switch number combinations.

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

VTH ID	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
12		DIP 4 + DIP 3

VTH ID	DIP Switch Combination	Coding Rule
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 Button Description

The buttons on the VTH have different functions in different screens. This section introduces all the functions.

Table 6-1 Button description

Button	Description
	- You can customize the function for this button. After configuration, you can directly monitor the VTO or HDCVI camera. - Take snapshot or record the video when monitoring or receiving the call.
	- You can customize the function for this button. After configuration, you can directly monitor the VTO or HDCVI camera. - Back to previous screen.
	- Receive the call. - Hang up the call during the call. - Save the configurations.
	- You can customize the function for 2 buttons. After configuration, press  to unlock the local lock and press  to unlock the RS-485 lock of the configured door. - The selected option can be shifted in upward or downward directions on the screen.
	

6.2 Home Screen

After powering up, the VTH is in the low-consumption status. Press any button to go to the home screen to operate or configure the VTH.

Figure 6-1 Home screen

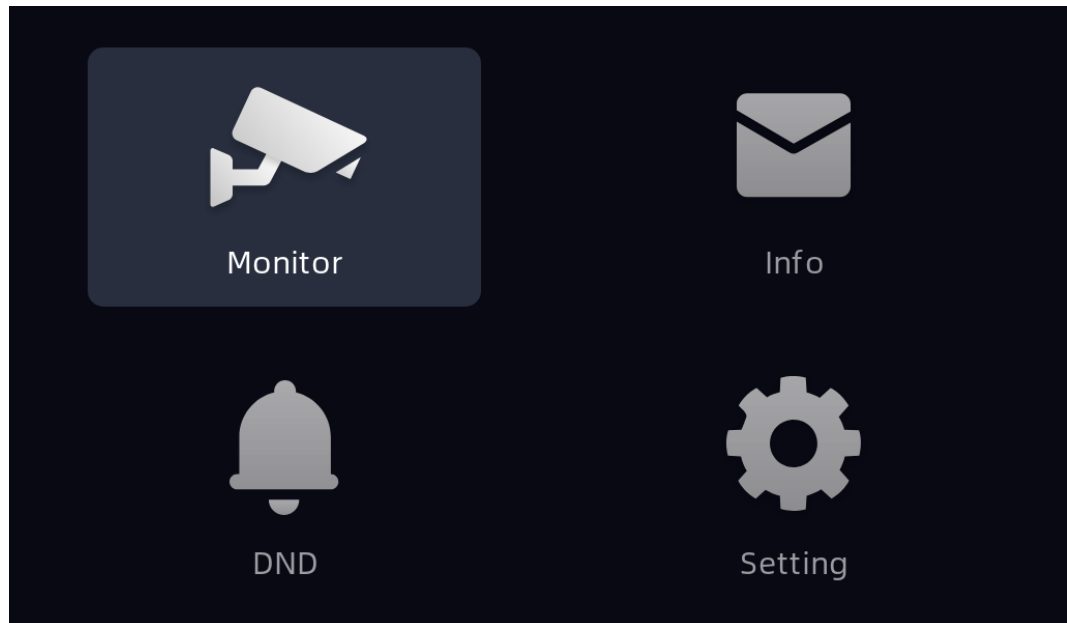


Table 6-2 Home screen description

Name	Description
Monitor	Monitor VTOs and HDCVI cameras.
Info	• View and delete pictures and videos. • Up to 500 files can be stored. The files will be overwritten when the storage is full.
DND	Enable to not receive any calls.
Setting	Configure the settings for video intercom, screen brightness, ring, time, VTO numbers, language, update and more.

Press or to change the items you want to select, and then press to go to specific configurations screen.

6.3 Monitoring

Monitor VTO or HDCVI camera.

Go to the **Monitor** screen, press or to change the VTO or the camera you want to select, and then press to go to video screen.

Figure 6-2 Monitor for VTH10X3J

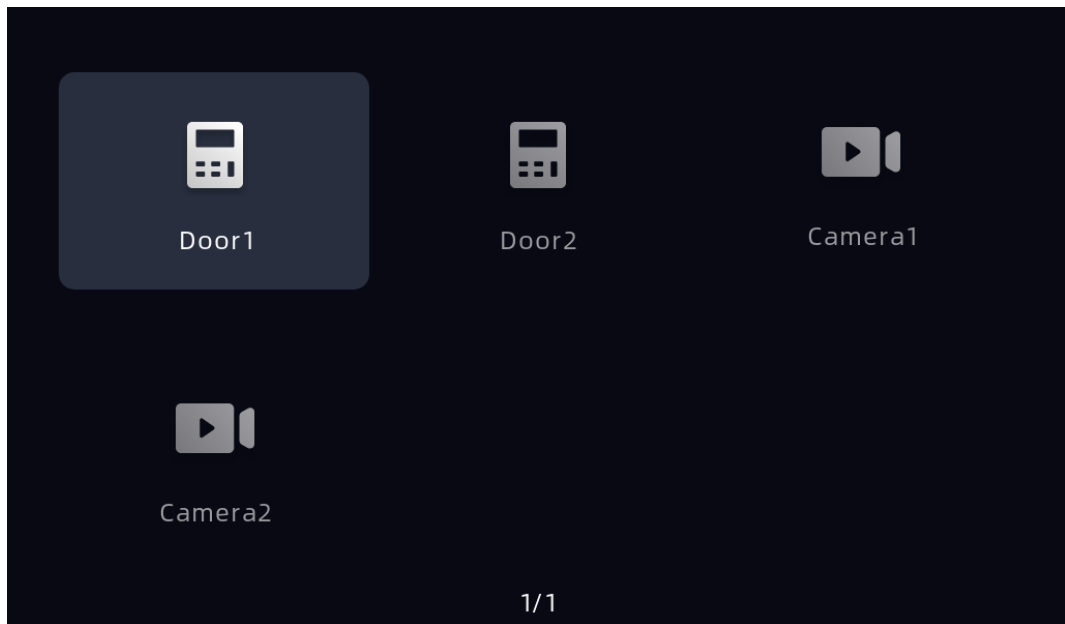
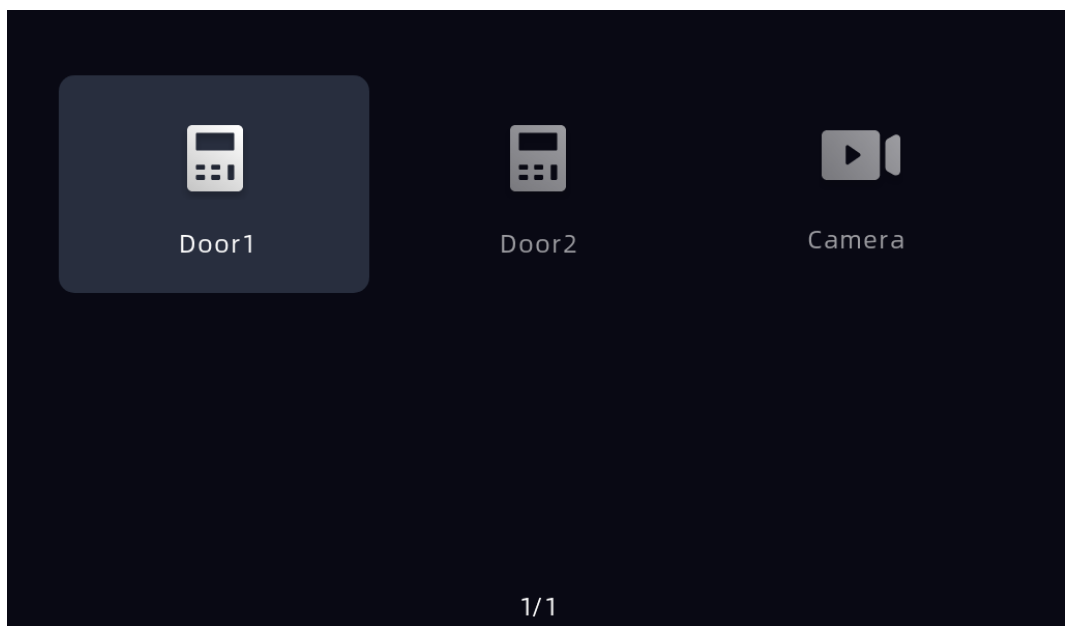


Figure 6-3 Monitor for VTH10X3J-S2



- Monitor the VTO.
 - ◇ Press  to take snapshot. Press and hold the button for 2 seconds, the VTH starts to recording the video, press the button again to stop recording. The recording file will be stored in **Info**.
 - ◇ Press  to speak to the VTO, and press again to stop.
 - ◇ Press  to exit monitoring.
 - ◇ Press  or  to unlock the lock 1 or lock 2 if 2 locks are connected.

Figure 6-4 Monitor the VTO



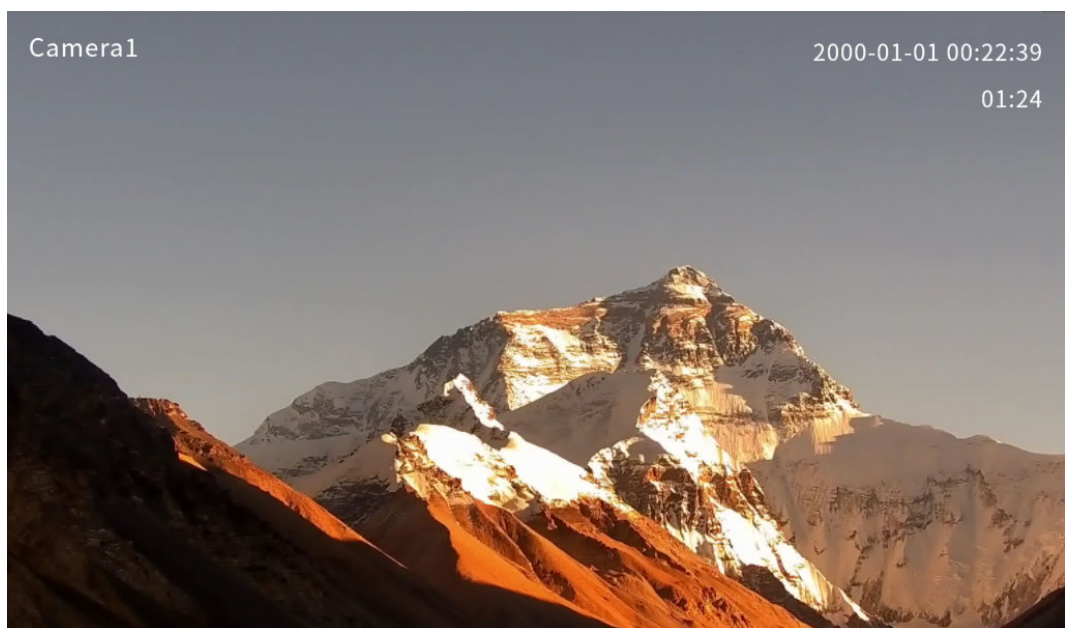
- You can monitor the HDCVI camera.



You need to configure the mode as CVBS on the camera.

- ◇ Press  to take snapshot. Press and hold the button for 2 seconds, the VTH starts to recording the video, press the button again to stop recording. The recording file will be stored in **Info**.
- ◇ Press  to exit monitoring.
- ◇ Press and hold  for 2 seconds to start the tour. The camera will be monitored one by one according to the default tour duration of 8 seconds.

Figure 6-5 Monitor the camera



6.4 Information

View and manage the information, including pictures and videos recorded from the VTO.



The functions of leaving message, recording and taking snapshot are available when the SD card is inserted.

Leave the Message

When the VTO calls the VTH, and the VTH does not answer, after the countdown is over, press the call button on the VTO to leave the message. The message is displayed as unread status on the homepage of the VTH.

During the message leaving process, press /✓ on the VTH to receive the call or press /✗ to hang up the call.

View the Information

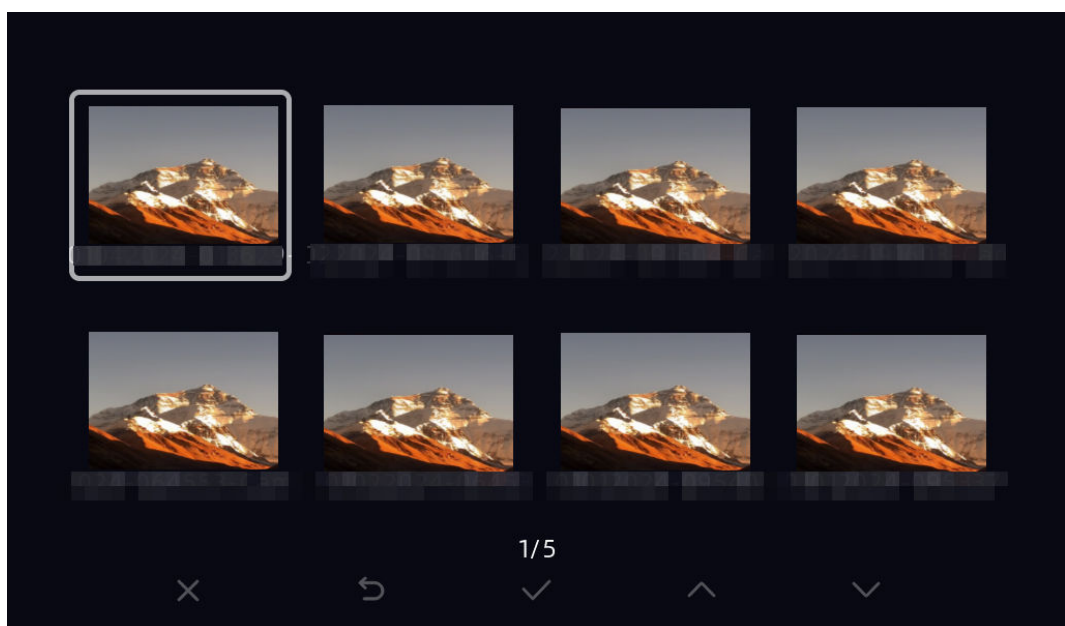


If there is no SD card or no recorded information, the corresponding prompt will be displayed on the screen.

Go to the **Info** screen, press /▲ or /▼ to change the picture or video, and then press /✓ to view the picture or play the video.

Press /✗ to delete the file. Press /⏮ to exit.

Figure 6-6 Information



6.5 Setting

Configure the basic parameters, intercom parameters and more.

Go to the **Setting** screen, press or to change the item you want to configure, and then press to start configuring.

Figure 6-7 Settings (1)

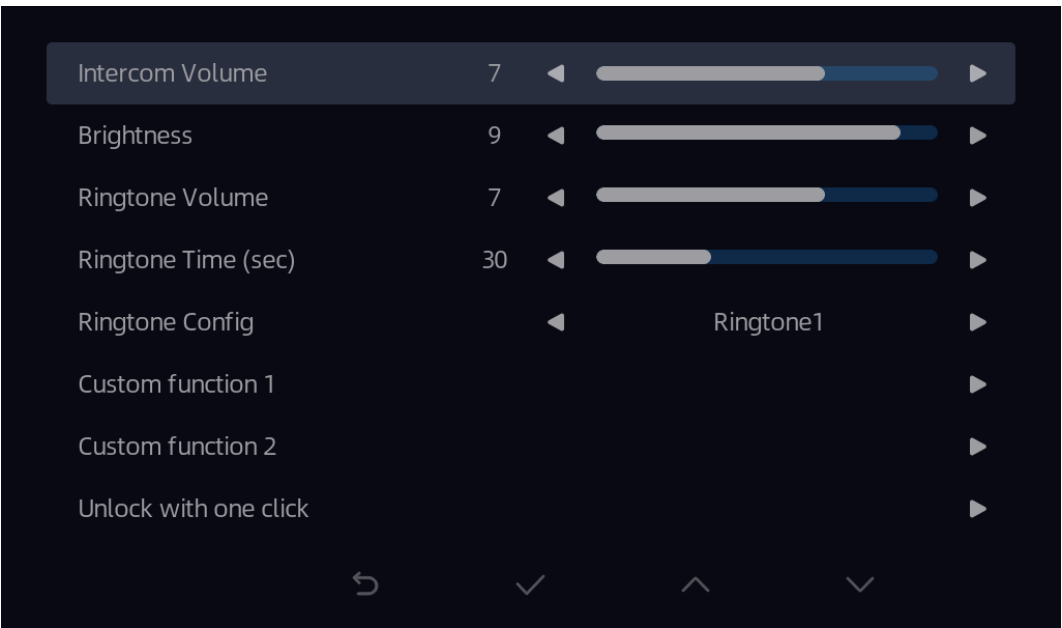


Figure 6-8 Settings (2)

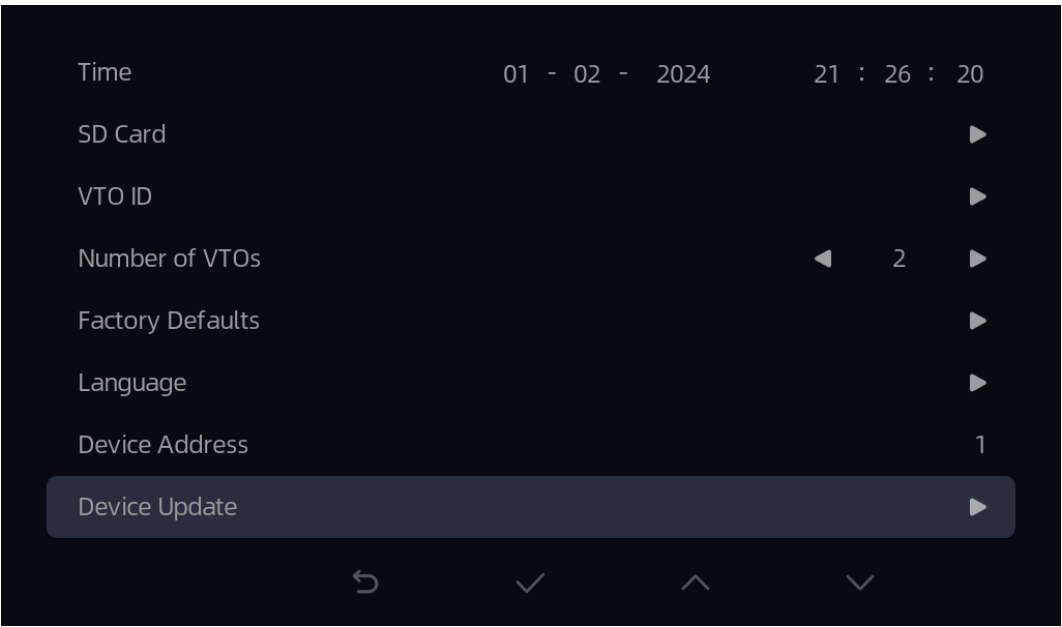


Table 6-3 Settings parameters description

Parameters	Description
Intercom Volume	Press  /▲ or  /▼ to configure the intercom volume, screen brightness, ringtone volume, ringtone time, and select the ringtone.
Brightness	
Ringtone Volume	
Ringtone Time (sec)	
Ringtone Config	 If the device works as the sub-device, the ringtone time is 60 seconds and cannot be edited.
Custom Function 1	Customize functions for  /🚪 and  /🚪. Press  /✓ to select the function that you want to configure. ● Disable: The button does not have extra function. ● Monitor: Select from door 1, door 2, camera (or camera 1 and camera 2). Press the button to directly monitor the configured device.  ◇ Camera is available on VTH10X3J-S2 model. ◇ Camera 1 and camera 2 are available on VTH10X3J model. ● DND: Press the button to turn on or turn off DND.
Custom Function 2	
Unlock with One Click	Customize functions for  /▲ and  /▼. Press  /✓ to select the function that you want to configure. ● Disable: The button does not have extra function. ● Door 1: Press /▲ to unlock the local lock and press /▼ to unlock the second lock of the door 1. ● Door 2: Press 2 buttons to unlock the local lock and the second lock of the door 2.  The door number depends on the connected VTOs and the configured parameter of Number of VTOs .
Time	Displays the system time. Press  /✓ to start configuring, press  /▲ or  /▼ to change the item, including date, month, year and time, and then press  /✓ to configure the values. The time format is month-date-year and hour: minute: second.
SD Card	You can view the capacity of the SD card, eject the SD card or format the SD card.  The SD card with FAT32 format is supported. If you use the card with other formats, you need to format it first before using it.

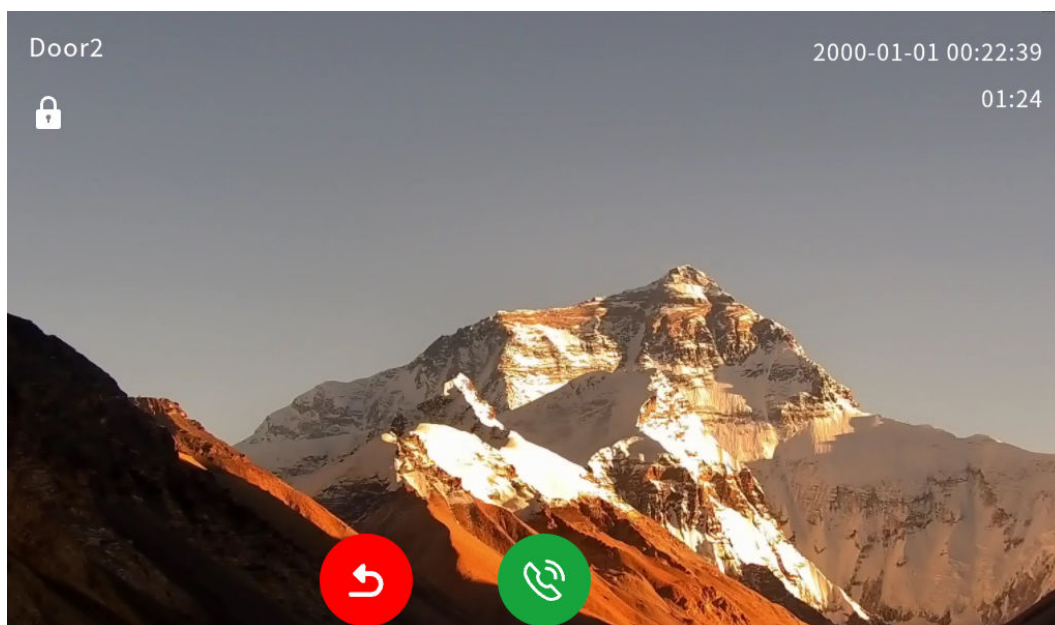
Parameters	Description
VTO ID	After configuring the number of VTOs, select VTO ID, press  to view the VTOs, and then press  again to configure the ID for each VTO. For example, if you assign ID 5 to Door1, when you select Door1 on Monitor screen, you can monitor the VTO whose ID is 5.
Number of VTOs	Configure the number of VTOs. After configuring, the corresponding VTOs will be displayed in the Monitoring screen and the VTO ID configurations screen.
Factory Defaults	Restore the device to its factory settings.  After you restore the device to its factory settings, all the information on the device will be cleared and the device will restart. You need to select the language first before using.
Language	Select the language. After changing the language, the VTH restarts.
Device Address	The DIP address of the VTH.
Product Material QR Code	Scan the QR code to view the product material.  This function is available on select models.
Device Update	View the current MCU version and the system version. If there are update files in the SD card, press  to update.  The update file must in the folder Upgrade in the SD card.

6.6 Receiving the Call

When there is a call from the VTO, the VTH receives the call and the screen is displayed.

- Press  to answer the call.
- Press  to hang up or end the call.
- Press /▲ or /▼ to unlock the corresponding locks during the call.

Figure 6-9 Receive the call



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 Allowlist**

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

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;
- Establish 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).