

Analog 4-Wire Intercom

User Manual



V2.0.0

Foreword

General

This manual mainly introduces structure, installation, wiring and menu operations of the analog 4-wire video intercom. 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.
 TIPS	Provides methods to help you solve a problem or save time.
 NOTE	Provides additional information as a supplement to the text.

Revision History

Version	Revision Content	Release Time
V2.0.0	Revised the user manual.	January 2026
V1.2.4	Revised Important Safeguards and Warnings.	December 2022
V1.2.3	Revised wiring description.	November 2022
V1.2.2	Revised wire color description.	January 2022
V1.2.1	Added the recommended installation height of the device.	January 2022
V1.2.0	Added new model 4.3-inch VTH.	October 2021
V1.1.0	- Added description of the functions of 7-inch VTH. - Added Factory Reset function.	March 2021
V1.0.0	First release.	August 2020

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 to: 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 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



- 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.
 - ◇ 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.
- 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 Overview

1.1 Introduction

The analog 4-wire video intercom consists of a door station (VTO) and an indoor monitor (VTH). It is applicable to buildings, such as residential buildings, for people to make voice and video calls. The VTO is installed outdoors and VTH is installed indoors. The VTHs (VTH1020J/VTH1020J-T/VTH1010J) should be used with the required VTO models (VTO1000J/VTO1000JM) to achieve intercom function.

1.2 Features

VTH

- Real-time video/voice communication.
- Supports being connected to 3 VTOs.
- Supports being connected to cameras (CVBS).
- Plug-and-play.

VTO

- Real-time voice communication.
- Self-adaptive IR illumination.

1.3 Front Panel

1.3.1 VTH

Figure 1-1 Front panel of the 7-inch VTH

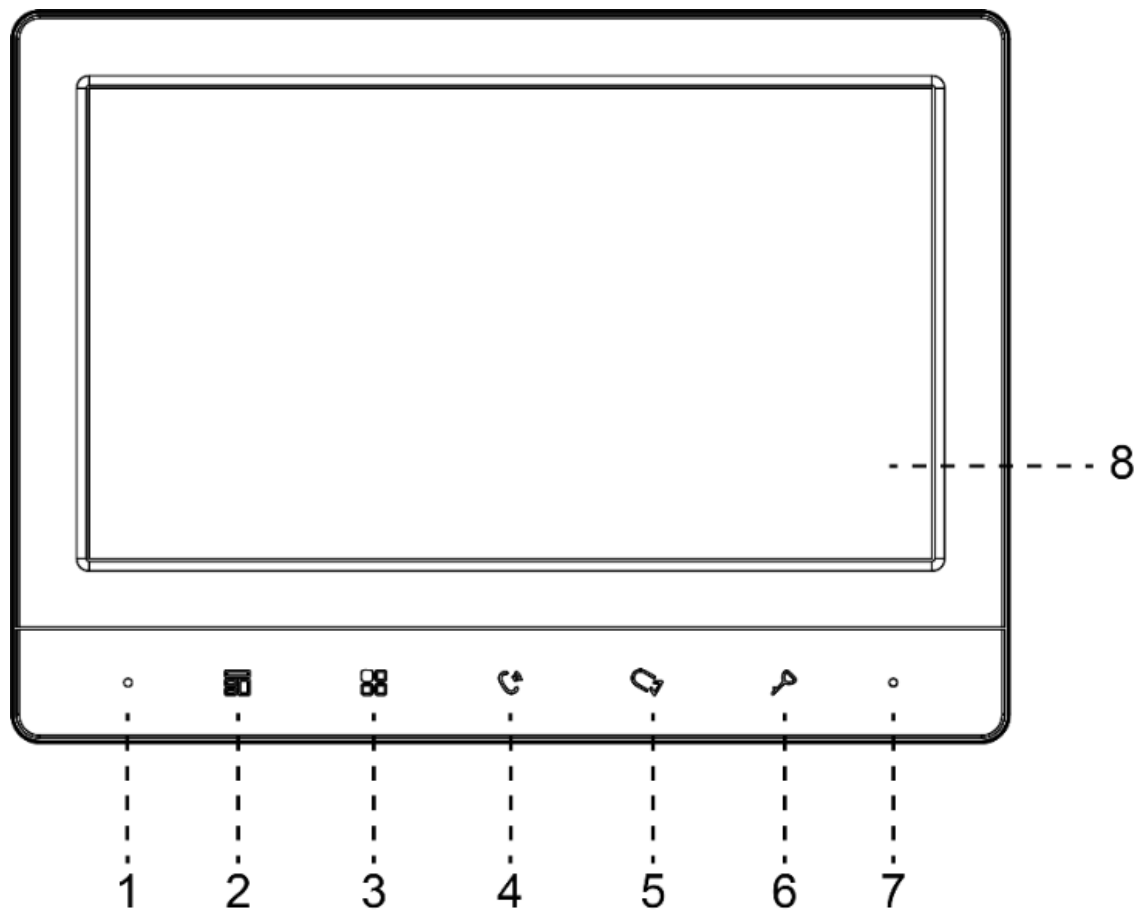


Figure 1-2 Front panel of the 4.3-inch VTH

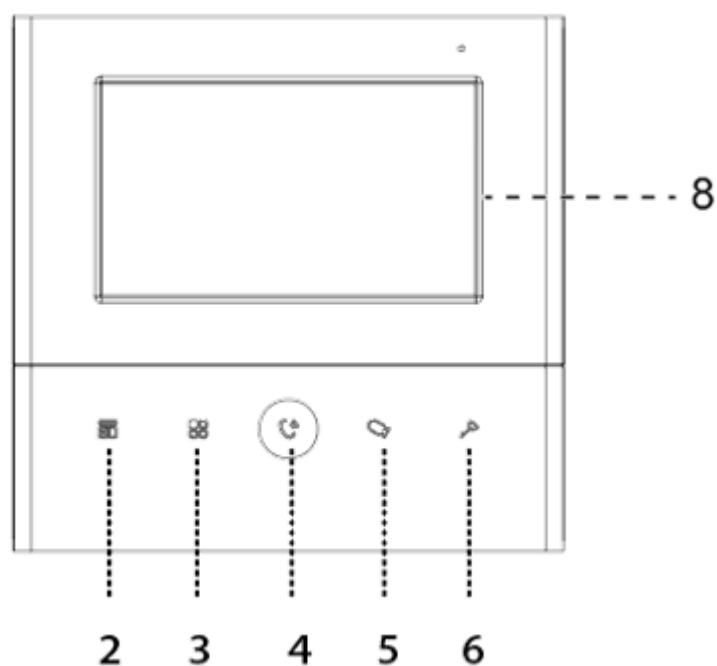


Table 1-1 Front panel description

No.	Icon	Description
1	—	Microphone.  The 4.3-inch VTH does not support microphone.
2		- Press the button to hang up the incoming call. - Take snapshots during monitoring.  This function is only available for VTH1020J-T.
3		Wake up the screen, and call out the menu.
4		When someone is calling from the VTO: - Press the button once to talk with the person. - Press the button twice quickly to hang up.

No.	Icon	Description
5		- When someone is calling from the VTO: - Press the button to talk to the person (only supported by VTH1020J). - Press the button to take snapshots (only supported by VTH1020J-T). - When no one is calling: - Press the button once, twice, three times and four times to view live video of: VTO1, VTO2, analog camera 1 and analog camera 2 respectively. - On the live video page, press the button to take snapshots (only supported by VTH1020J-T).
6		When someone is calling, press the button to unlock the door where the VTO is installed.
7	—	Power indicator.
8	—	LCD screen.

1.3.2 VTO

Figure 1-3 Front panel

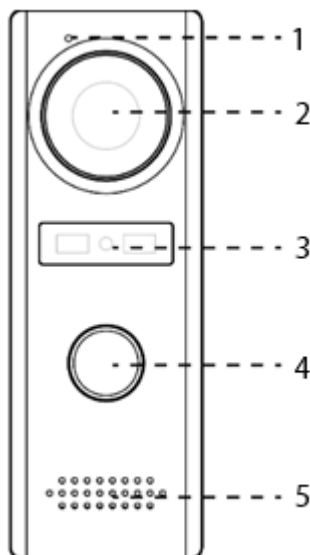


Table 1-2 Front panel description

No.	Description
1	Microphone.
2	Built-in camera.
3	Power indicator.

No.	Description
4	Call button. • Press once to call the VTH. • Press and hold for 10 seconds to change the bell type of the VTO. The power indicator will flash. • Press and hold for 15 seconds to turn up the bell volume of the VTO. The power indicator will flash. When the volume reaches maximum, this step will set it to minimum. Repeat this step to set appropriate volume. • Press and hold for 20 seconds to change between DWDR and normal mode for the VTO. The power indicator will flash.
5	Speaker.

1.4 Rear Panel

1.4.1 VTH

There might be slight differences in the real panel among different models, but they have the same function ports.

Figure 1-4 Rear panel

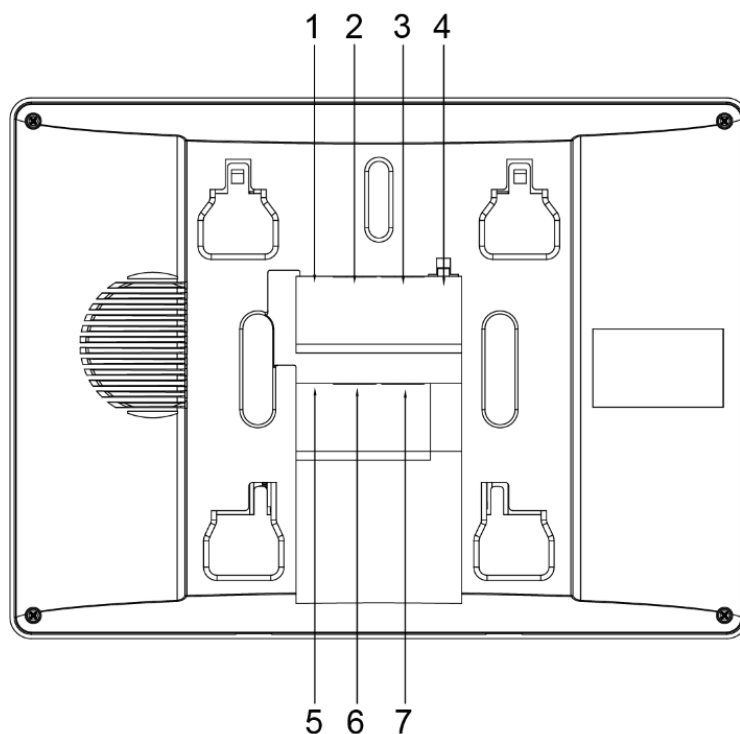


Table 1-3 Rear panel description

No.	Description	No.	Description
1	Analog camera port 1.	5	Analog camera port 2.
2	VTO port 1.	6	VTH cascading port 1.

No.	Description	No.	Description
3	VTO port 2.	7	VTH cascading port 2.
4	Power input.	—	

1.4.2 VTO

There might be slight differences in the real panel among different models, but they have the same function ports.

Figure 1-5 Rear panel

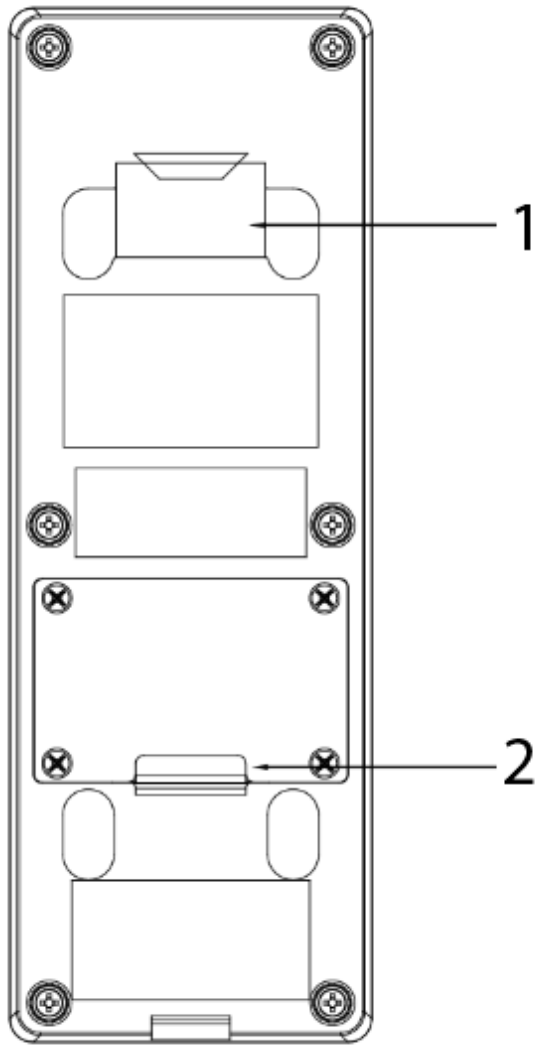


Table 1-4 Rear panel description

No.	Description
1	VTO hanging slot.

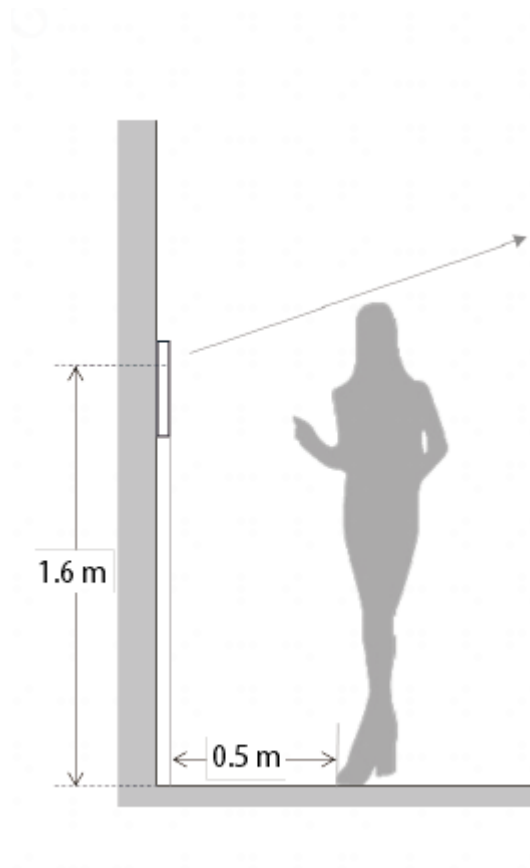
No.	Description
2	Wire port: The color of the wires represents different port functions. ● Red: power. ● Yellow: video. ● White: audio. ● Black: GND. ● Green: exit button. ● Orange: feedback. ● Purple: NO. ● Blue: COM. ● Brown: NC.

2 Installation



- Do not install devices in harsh environment with condensation, high temperature, dust, corrosive substance and direct sunlight.
- Installation should be done by professional teams. Do not dismantle or repair the device by yourself in case of device failure. Contact after-sales service if you need any help.

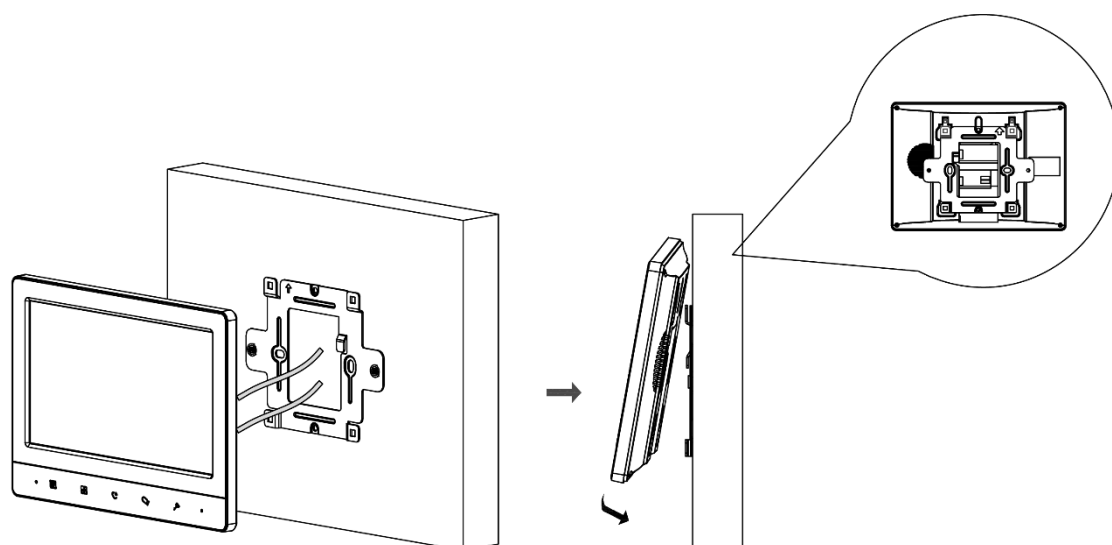
Figure 2-1 Installation height



2.1 VTH

Fix the bracket on the wall by screws, hang the VTH on the bracket, and then apply silicone sealant to the gap between the device and the wall.

Figure 2-2 VTH installation



2.2 VTO

Install the VTO bracket on the wall, and then hang the VTO on the bracket; or install the VTO cover on the wall, and then hang the VTO on the cover. Finally, apply silicone sealant to the gap between the device and the wall.

Figure 2-3 VTO installation

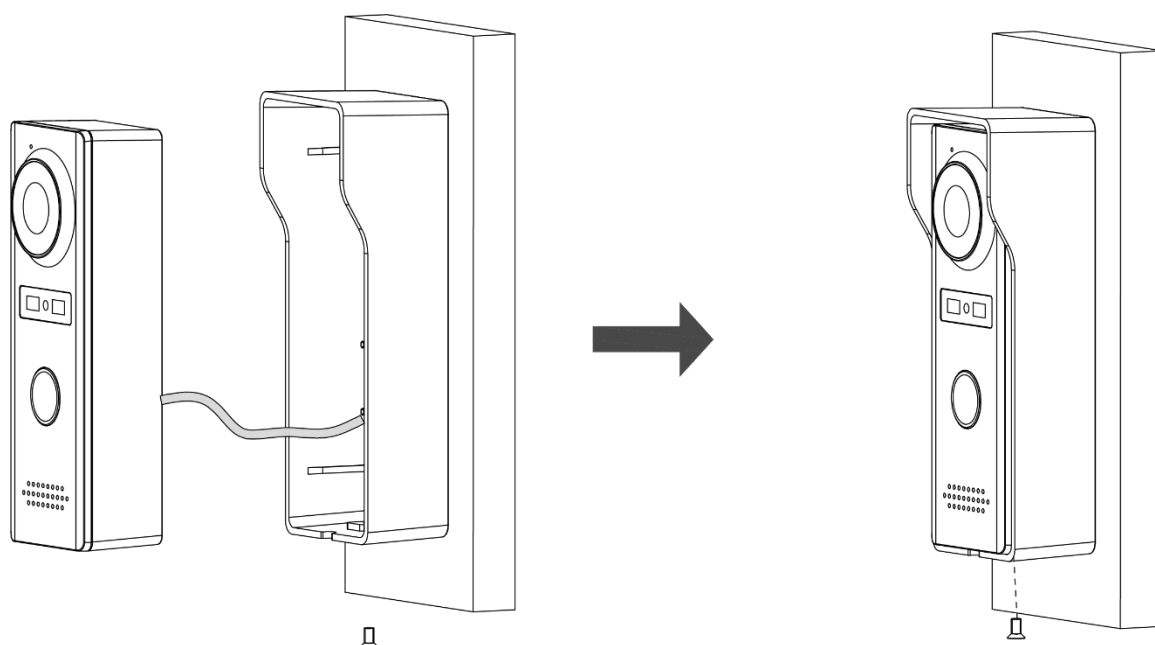
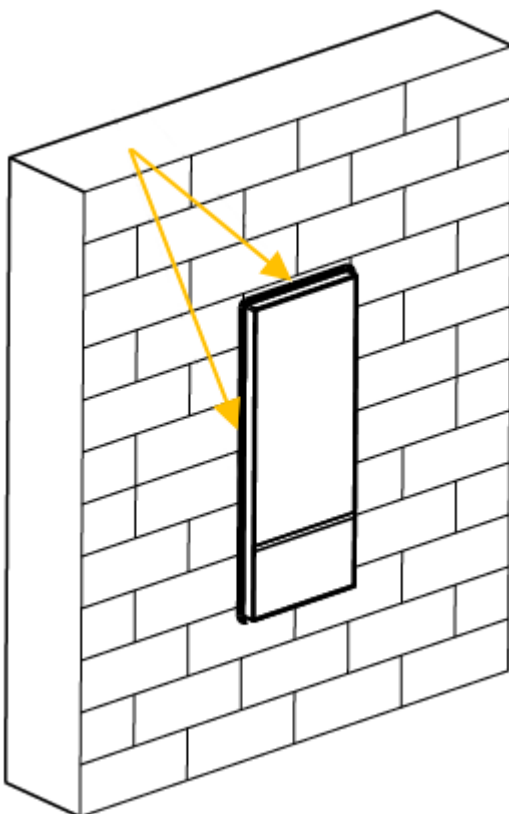


Figure 2-4 Apply silicone sealant to the gap between the device and the wall



3 Wiring

Up to 2 VTOs and 3 VTHs can be wired in one communication system.

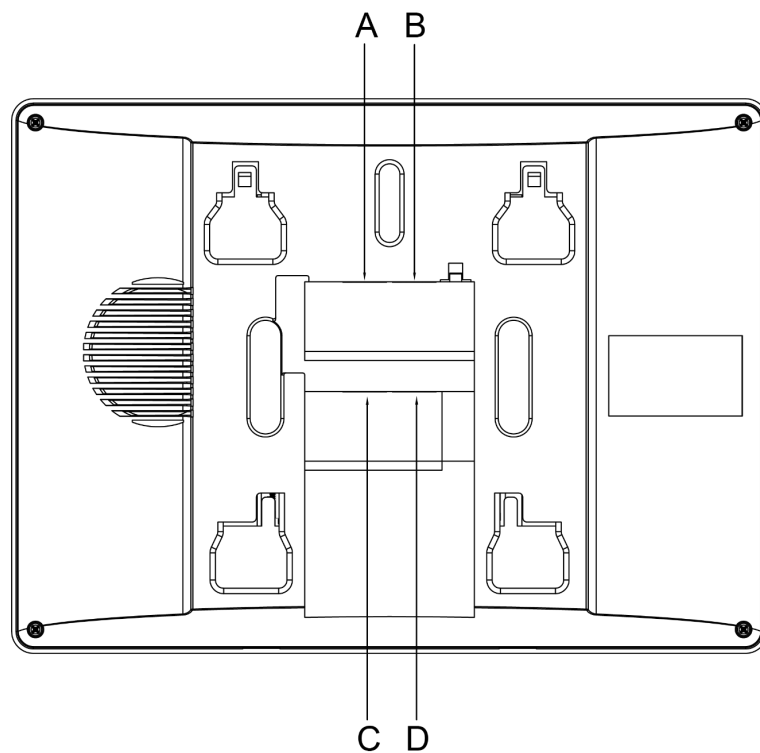


In case of abnormality after powering on the device, cut off the power supply at once, and unplug the network cable. Power on after troubleshooting.

3.1 Preparations

3.1.1 Port Connection Rules

Figure 3-1 Port connection rules



- Port A of an VTH can be connected to Port C of another VTH for data communication.
- Port B of an VTH can be connected to Port D of another VTH for data communication.
- Port A of an VTH cannot be connected to Port B or D of another VTH for data communication.
- Port C of an VTH cannot be connected to Port B or D of another VTH for data communication.

3.1.2 Cord Specification

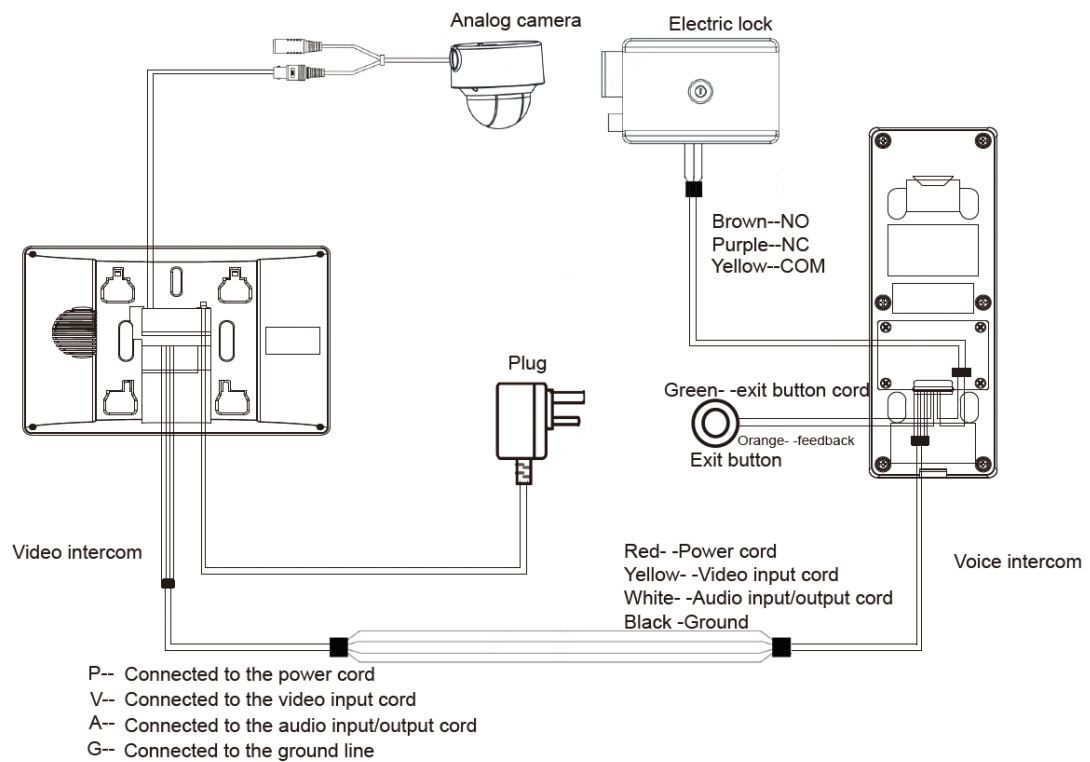
Depending on the distance between the VTO and VTH, you need to select RVV4 cords of different specifications.

Table 3-1 Cord specification

Transmission Distance (TD)	RVV4 Cord Specification
$TD \leq 10 \text{ m}$	$RVV4 \times 0.3 \text{ mm}^2$
$10 \text{ m} < TD \leq 30 \text{ m}$	$RVV4 \times 0.5 \text{ mm}^2$
$30 \text{ m} < TD \leq 50 \text{ m}$	$RVV4 \times 0.75 \text{ mm}^2$

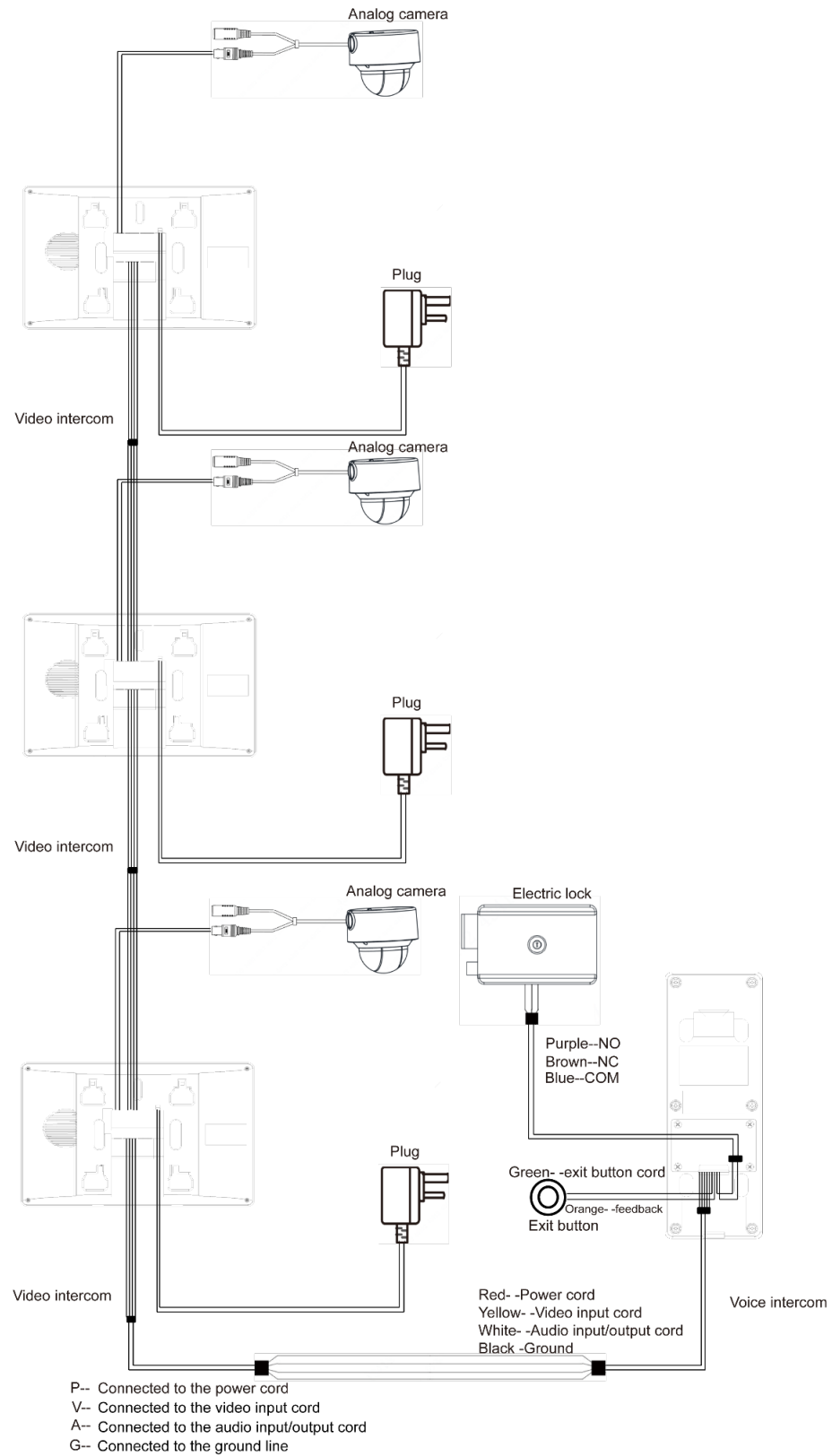
3.2 Wiring One VTO and One VTH

Figure 3-2 Wiring (1)



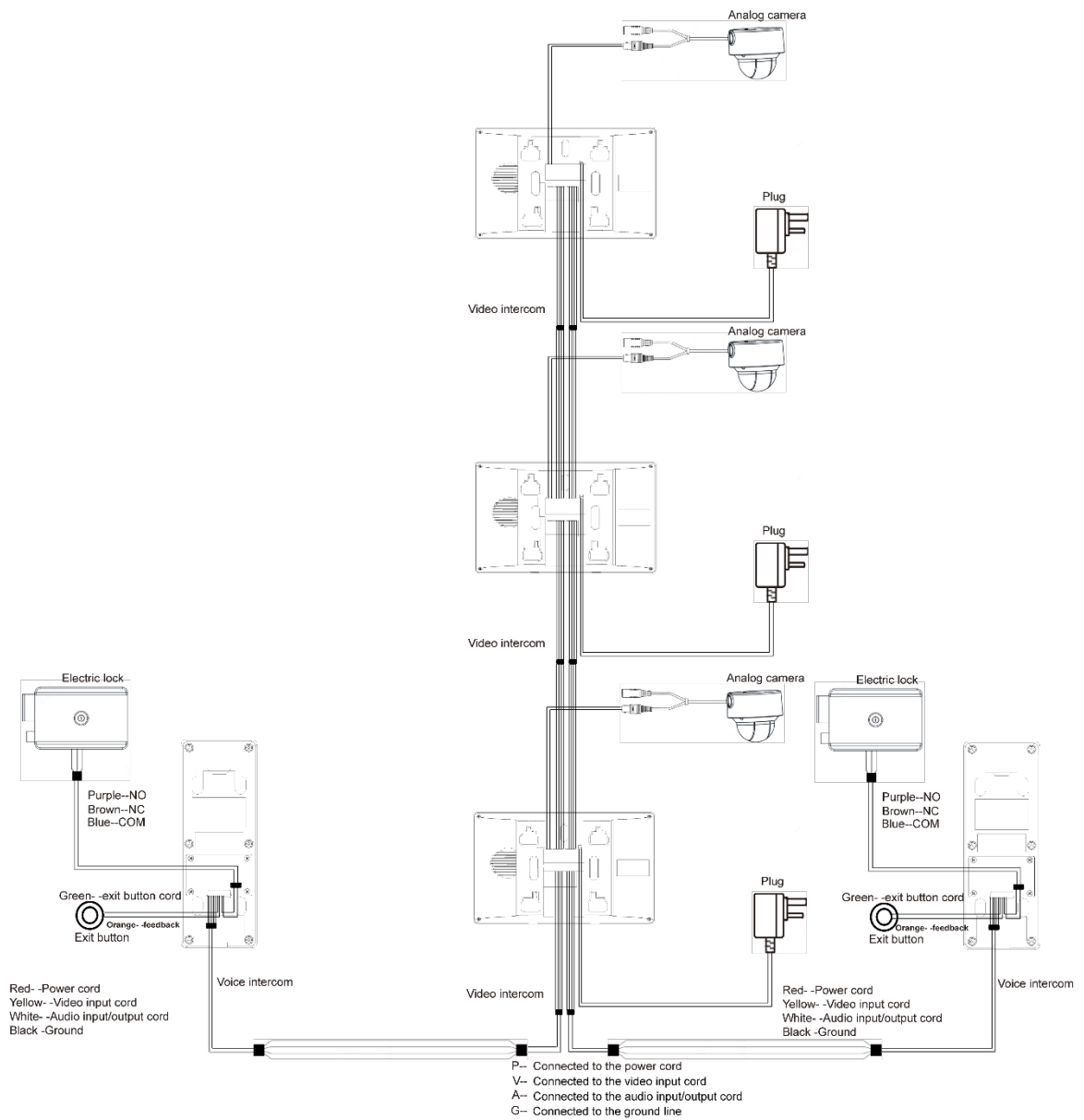
3.3 Wiring One VTO and Three VTHs

Figure 3-3 Wiring (2)



3.4 Wiring Two VTOs and Three VTHs

Figure 3-4 Wiring (3)



The recommended analog cameras (CVBS) are HAC 1230 series.

4 Menu Operations

You can configure the functions of the VTH, such as volume, brightness, and more.



- Only VTH1020J-T supports the **Snapshots** and **Time** functions.
- All configurations will be saved after you exit the menu.

Figure 4-1 Menu

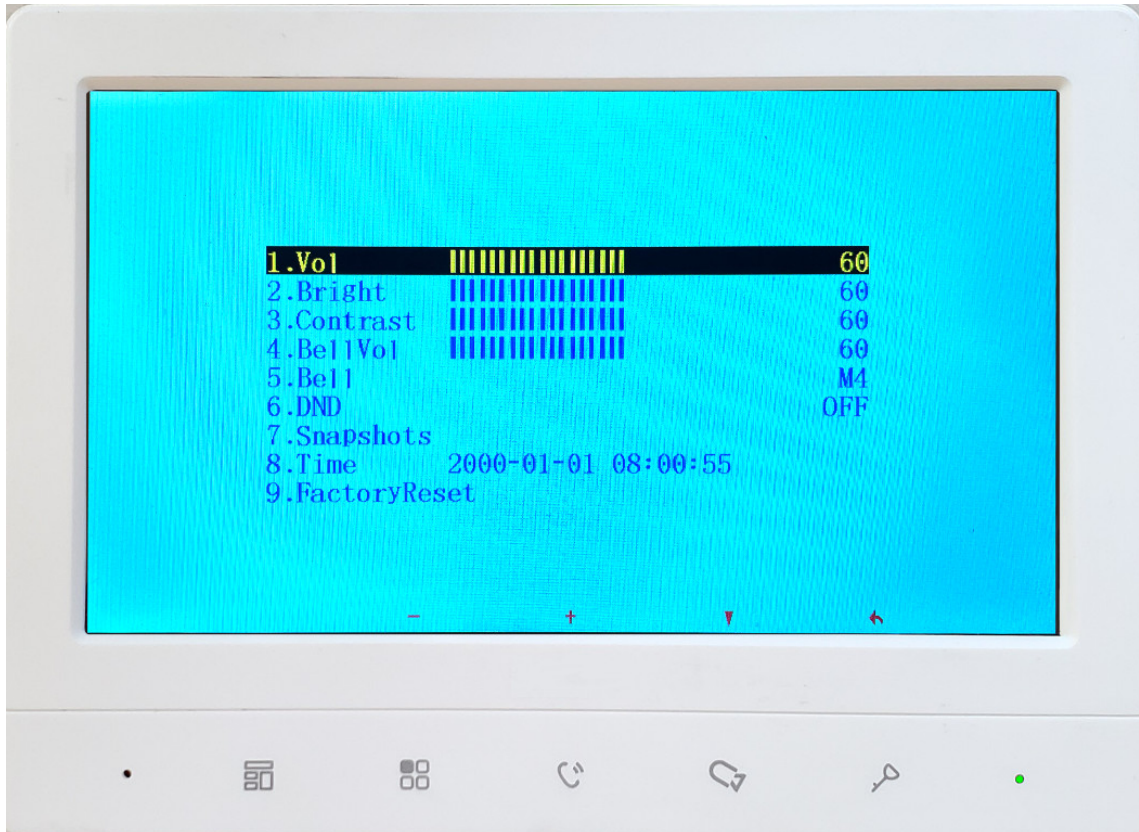


Table 4-1 Menu operations

Icon	Function
	Used to confirm your operation when you are using the Snapshots and Time functions (only supported by VTH1020J-T).
	Turn up Vol (volume), Bright (brightness), Contrast and BellVol (bell volume), change Bell , turn on or off DND (do not disturb), adjust the time, and set the device to the factory settings.
	
	Select an item.
	• Exit the menu and lock the screen. • Go back to the previous page.

4.1 Snapshots

Background Information

You can take snapshots during monitoring, and view the snapshots you have taken.



The VTH can store up to 200 snapshots. If storage is full, the earlier ones will be overwritten.

4.1.1 Taking Snapshots

During Monitoring

1. Press  to go to the monitoring screen that you want.
2. Press , and **Successful** will appear on the screen.

During Calling

When a VTO is calling or in a call with a VTO, press , and then **Successful** will appear on the screen. If the calling lasts more than one second, a snapshot will be automatically taken.

4.1.2 Viewing Snapshots

Procedure

Step 1 Press  to bring up the menu.

Step 2 Press , select **Snapshots**, and then press .

Figure 4-2 List of snapshots



Step 3 Press  to select the one that you need, and then press .

Figure 4-3 Viewing a snapshot



Step 4 Press  or  to view the previous or next snapshot. Or you can press  to go back to the list of snapshots, and then select the one that you need.

Related Operations

To delete a snapshot, press , **Delete?** will appear on the screen, and then press  to confirm.

4.2 Time

Procedure

- Step 1 Press  to call out the menu.
- Step 2 Press  to select the part of the time that you want.
- Step 3 Press  or  to adjust the number.

4.3 Restoring to Default Settings

Procedure

- Step 1 Press  to call out the menu.
- Step 2 Press  to select **FactoryReset**.

Figure 4-4 Confirm your operation



Step 3 Press , and then the device will restart.

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).