

Analog 4-Wire Video Intercom

Quick Start Guide



Foreword

General






This manual mainly introduces structure, installation, wiring and menu operations of the analog 4-wire video intercom (hereinafter referred to as the "Device"). Read carefully before using the device, and keep the manual safe for future reference.

Models

VTH1020J, and VTH1020J-T

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
V1.0.0	First release.	February 2025

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



- 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



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 Structure

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 do voice and video calls. The VTO is installed outdoors and the VTH is installed indoors.

1.2 Features

VTH

- Real-time video/voice communication.
- Can be connected to 2 VTOs.
- Can be connected to cameras (CVBS).
- Plug-and-play.

VTO

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

1.3 Front Panel

Figure 1-1 Front panel

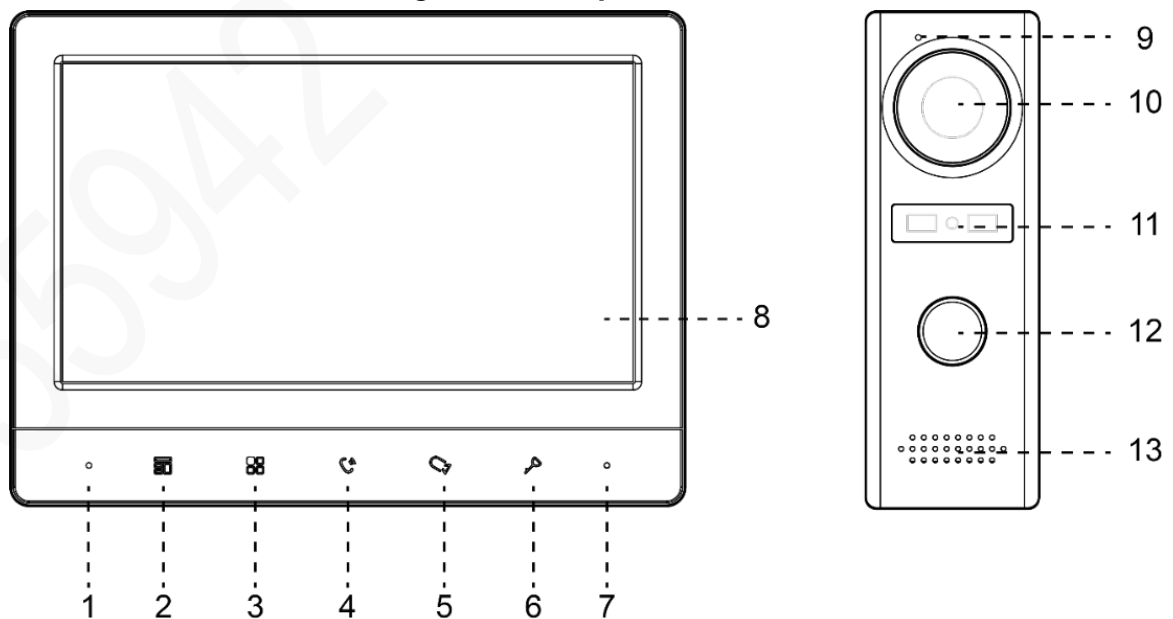








Table 1-1 Description of front panel

No.	Icon	Description
1	—	Microphone.

No.	Icon	Description
2		<ul style="list-style-type: none"> Press to hang up the incoming call. Take snapshots during monitoring.
3		<p>Wake up the screen, and bring up the menu.</p> <p></p> <p>For how to operate the menu, see "4 Menu Operations".</p>
4		<p>When someone is calling from the VTO:</p> <ul style="list-style-type: none"> Press once to do voice communication with the person. Press twice quickly to hang up.
5		<ul style="list-style-type: none"> When someone is calling from the VTO: Press to take snapshots. When no one is calling: <ul style="list-style-type: none"> Press once, twice, three times and four times to view live video of: VTO1, VTO2, analog camera 1 and analog camera 2 respectively. On any live video, press to take snapshots.
6		When someone is calling, press to open the door where the VTO is installed.
7	—	Power indicator.
8	—	LCD screen.
9	—	Microphone.
10	—	Built-in camera.
11	—	<p>Power indicator:</p> <ul style="list-style-type: none"> Solid green: Normal power supply. Flashes green: The device is calling.
12	—	<p>Call button:</p> <ul style="list-style-type: none"> Press once to call the VTH. Press and hold the button for 10 seconds to change to DWDR (digital wide dynamic range)/normal mode for the VTO. Release the button when power indicator flashes, and then another flash indicates successful setting.
13	—	Speaker.

1.4 Rear Panel

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

Figure 1-2 Rear panel

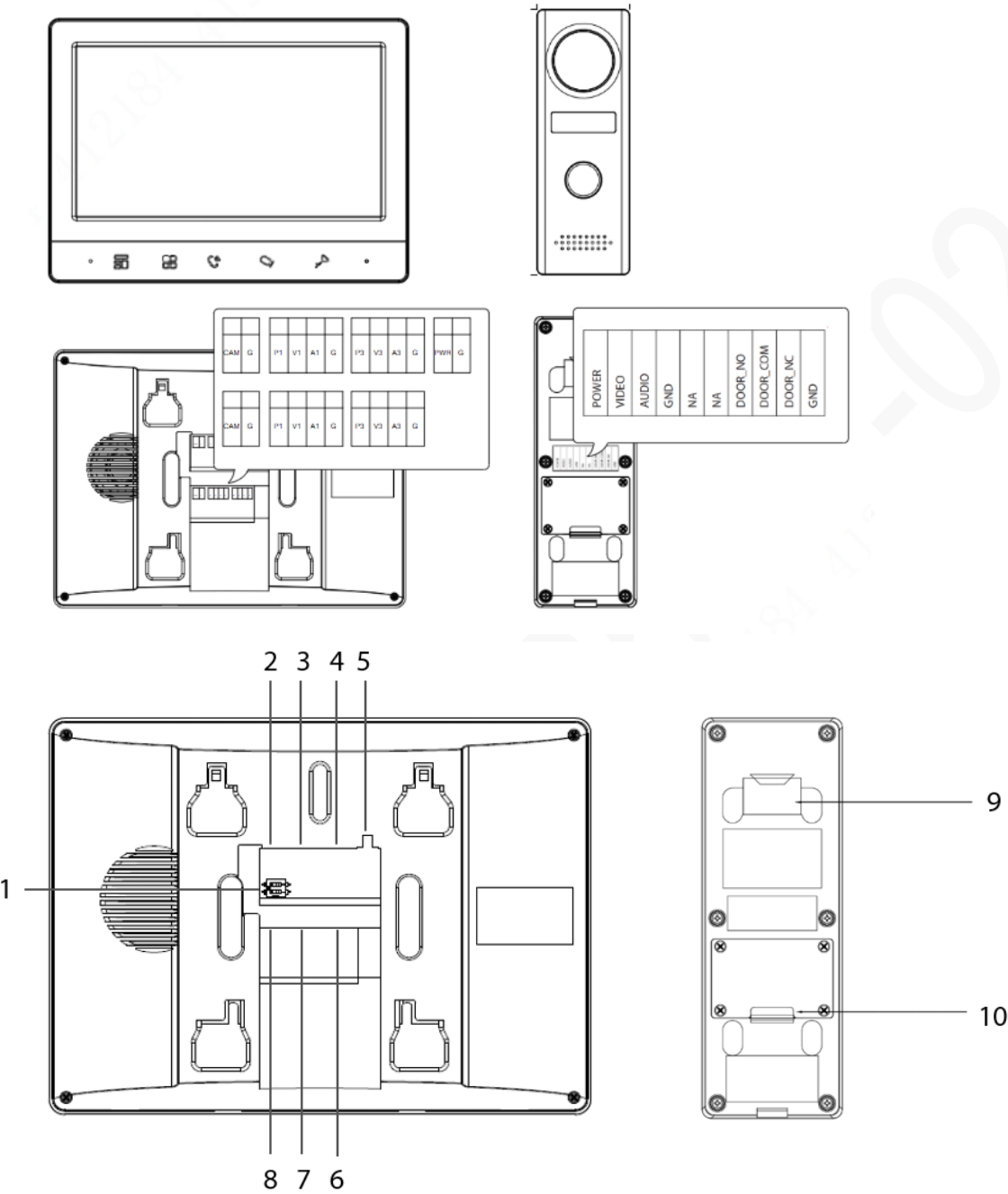


Table 1-2 Description of rear panel

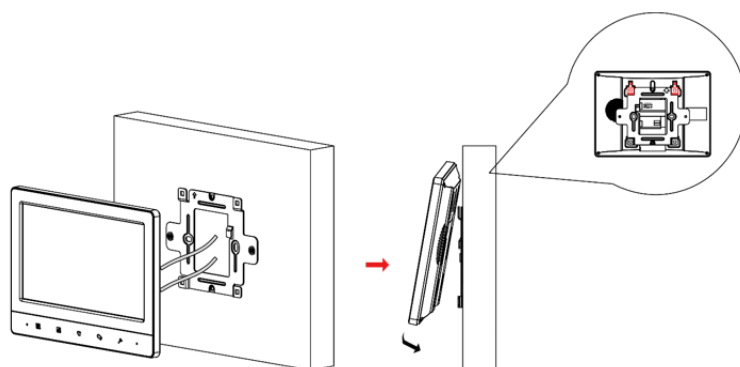
No.	Description	No.	Description
1	<ul style="list-style-type: none"> • There are 2 DIP switches. • If 2 DIP switches are switched to ON at the same time, the VTO can receive the power all the time. • If 2 DIP switches are switched to OFF* at the same time, the VTO cannot receive the power all the time but receive the power only when the VTO is calling or the VTH is monitoring the VTO. <p>*For working with 3rd party coordinate system, 2 DIP switches are must be OFF</p>	6	VTH cascading port 2.
2	Analog camera port 1.	7	VTH cascading port 1.
3	VTO port 1.	8	Analog camera port 2.
4	VTO port 2.	9	VTO hanging slot.
5	Power input.	10	Wires.

2 Installation

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 2-1 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 with screws. Finally, apply silicone sealant to the gap between the device and the wall.

Figure 2-2 VTO installation

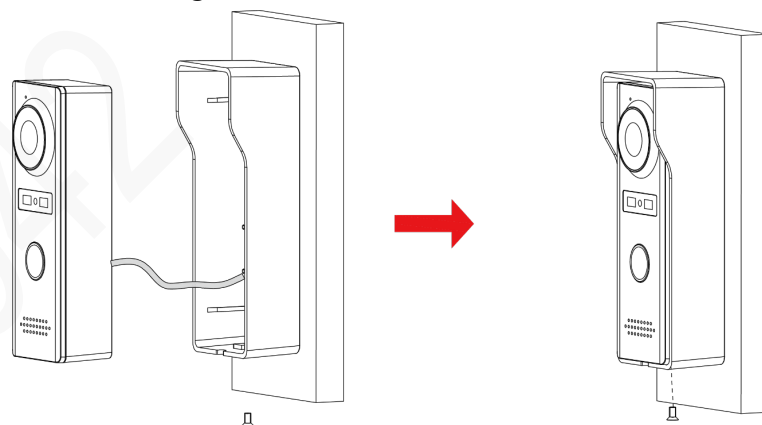
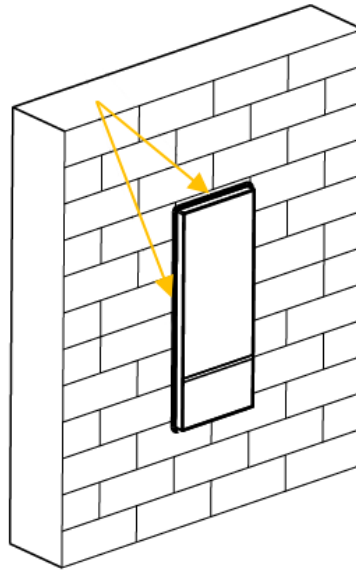


Figure 2-3 Apply silicone sealant to the gap between the device and the wall



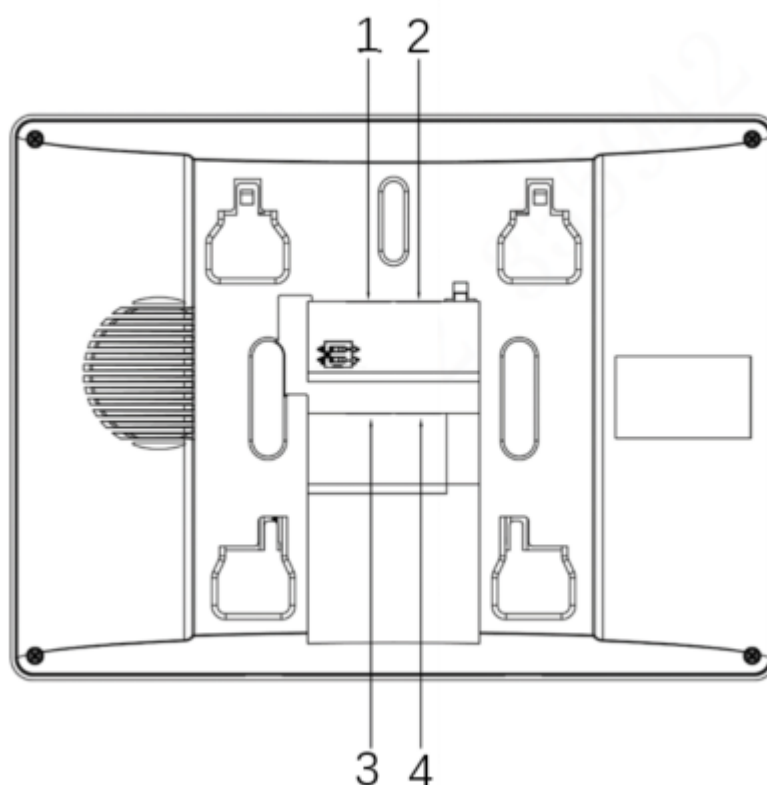
3 Wiring

At most 2 VTOs and 3 VTHs can be wired in 1 communication system.

3.1 Preparations

3.1.1 Port Connection Rules

Figure 3-1 Port connection rules



- Ports 1 and 3 is intended for connection to VTO or 3rd party device.
- Ports 2 and 4 is intended for connection to VTH

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 ≤ 10 meters	RVV4 × 0.3 mm ²
10 meters < TD ≤ 30 meters	RVV4 × 0.5 mm ²

Transmission Distance (TD)	RVV4 Cord Specification
30 meters < TD ≤ 50 meters	RVV4 × 0.75 mm ²



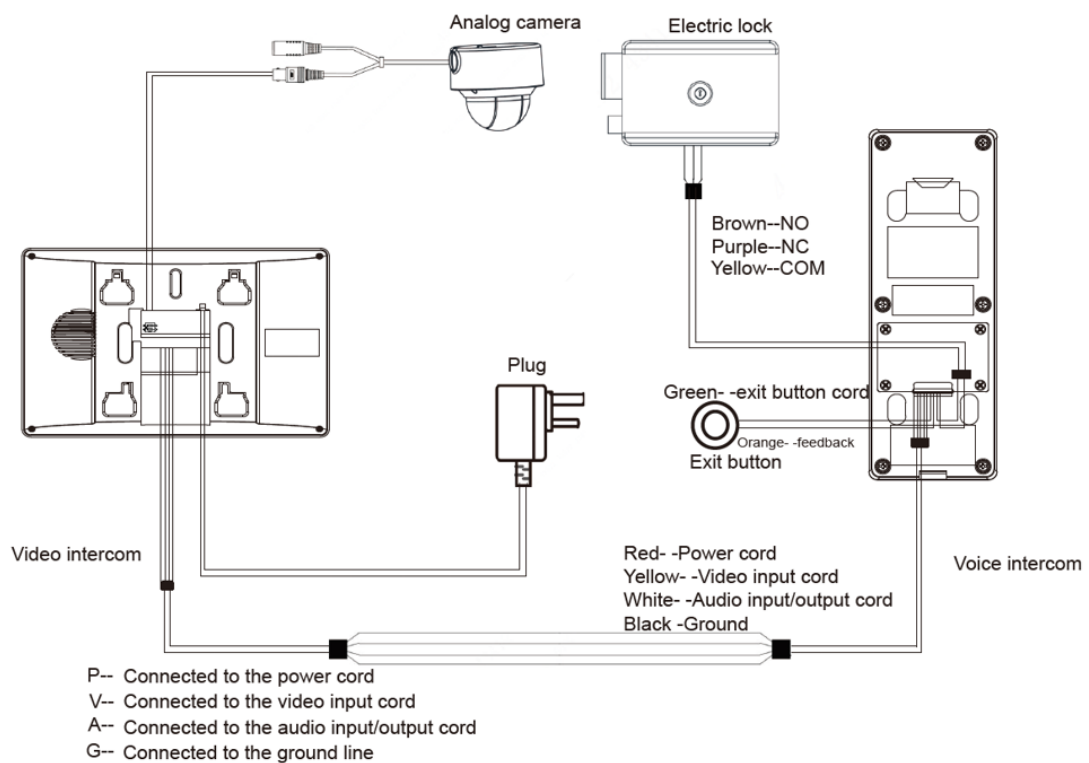
- **Do not pull the cords violently.**
- **During wiring, wrap the cord joints with insulated rubber tape to prevent short circuit.**



If the distance between the VTO and VTH is more than 50 meters, use coaxial cables.

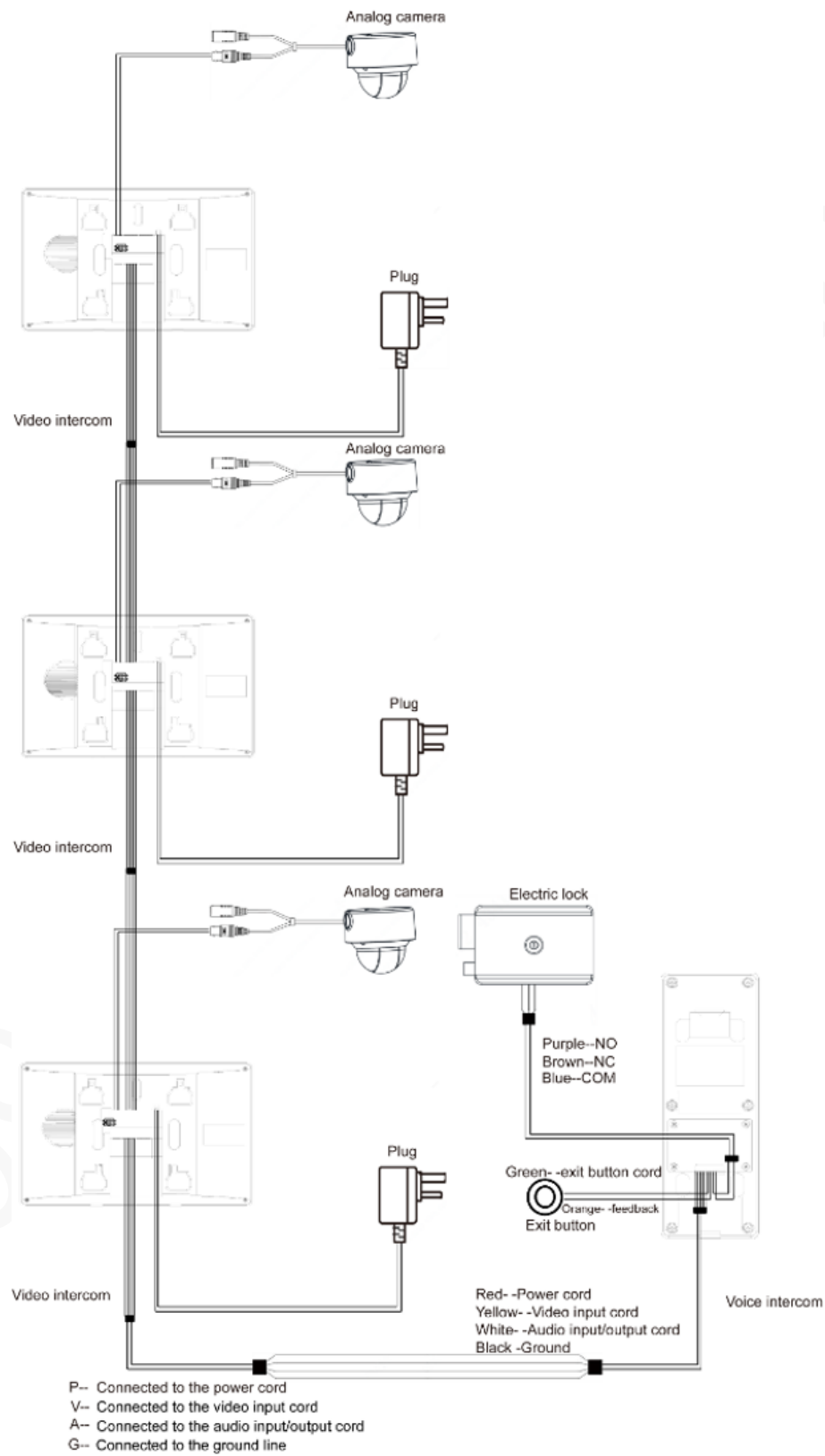
3.2 Wiring 1 VTO and 1 VTH

Figure 3-2 Wiring (1)



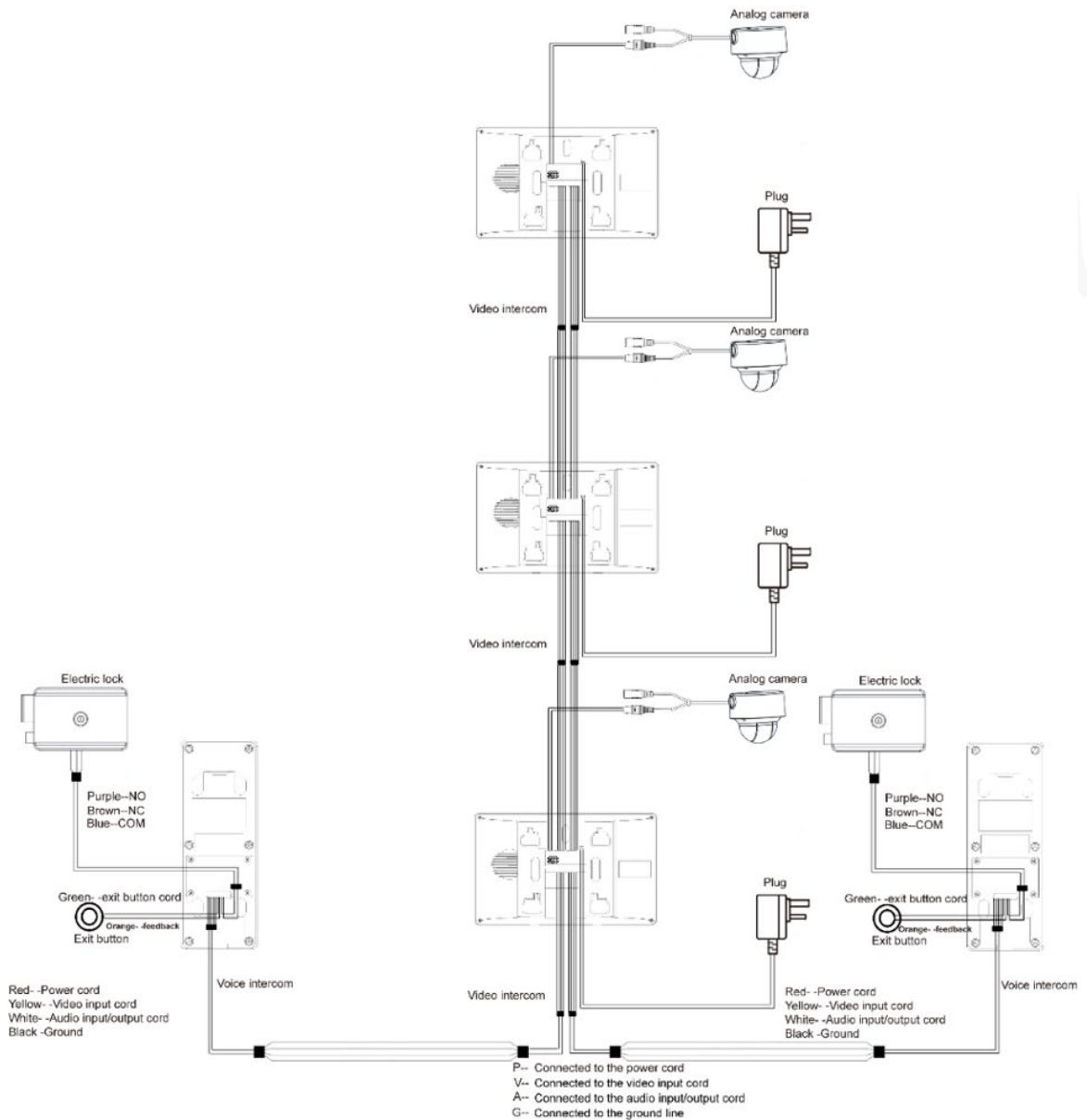
3.3 Wiring 1 VTO and 3 VTHs

Figure 3-3 Wiring (2)



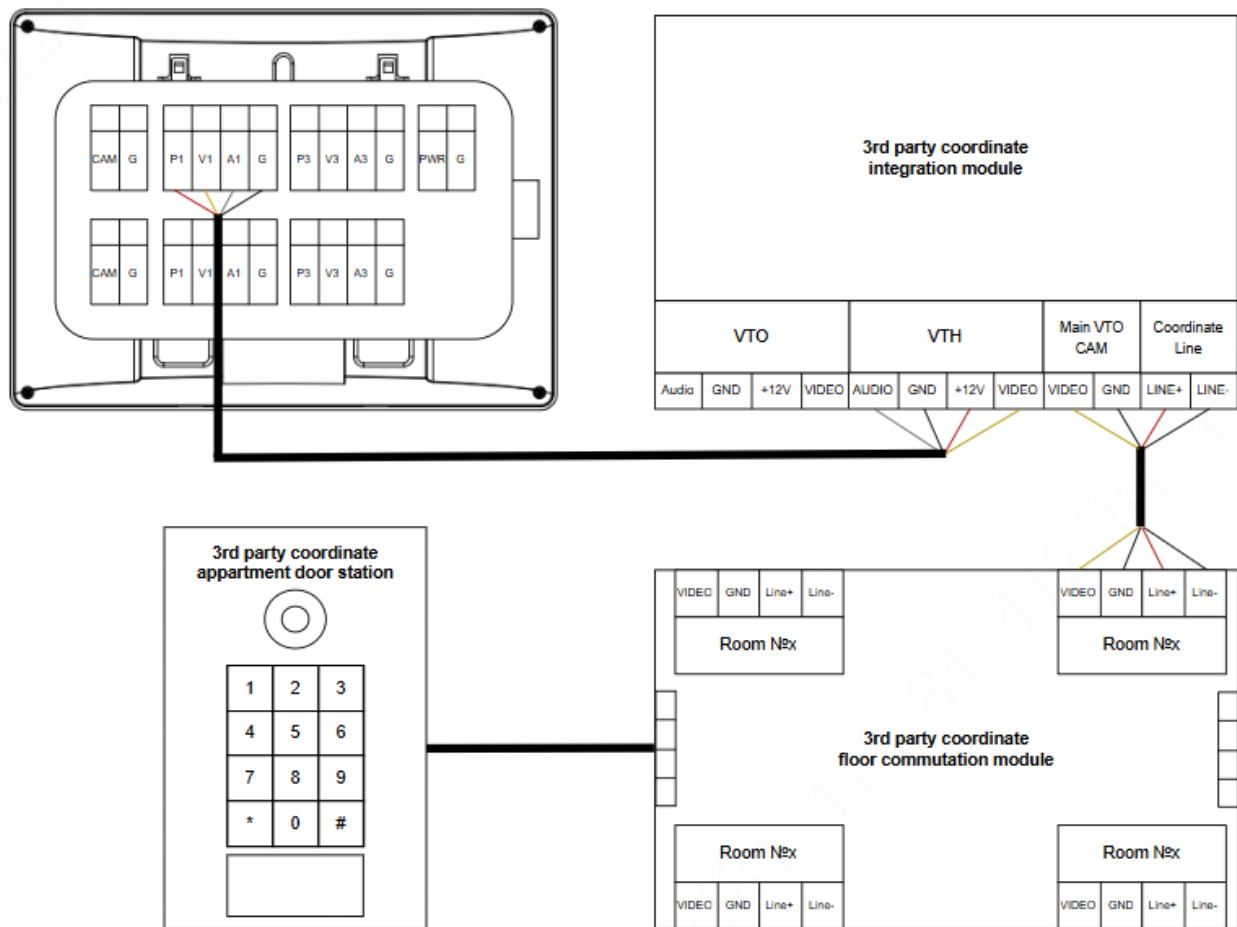
3.4 Wiring 2 VTOs and 3 VTHs

Figure 3-4 Wiring (3)



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

3.5 Wiring VTH to 3rd party coordinate video intercom



If necessary, you can also connect an additional VTO, analog cameras (CVBS) and VTH, based on the connection diagrams in sections 3.2-3.4 of this manual.

4 Menu Operations

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



- Supports the Snapshots and Time functions.
- All configurations will be saved after you exit the menu.

Figure 4-1 Menu

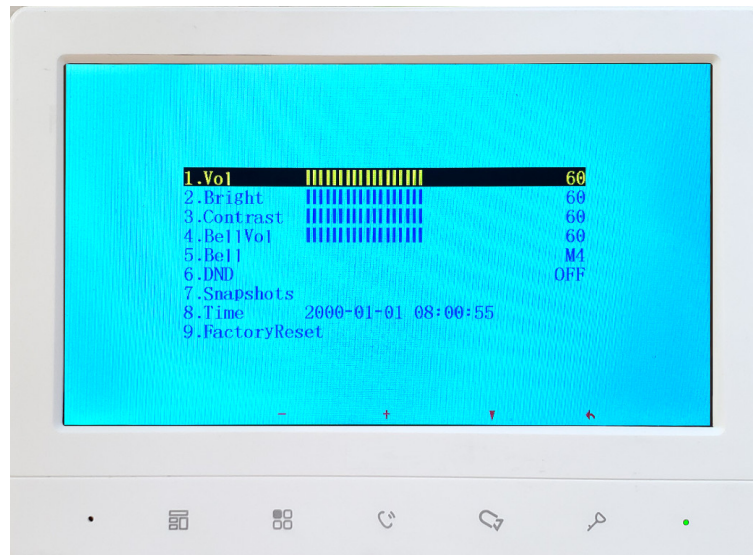







Table 4-1 Menu operations

Icon	Function
	Used to confirm your operation when you are using the Snapshots and Time functions.
	Used to adjust Vol (volume), Bright (brightness), Contrast and BellVol (bell volume), change Bell and turn off DND (do not disturb).
	Used to turn up Vol (volume), Bright (brightness), Contrast and BellVol (bell volume), change Bell, turn off DND (do not disturb), and adjust the time.
	Select an item.
	<ul style="list-style-type: none">• Exit the menu and lock the screen.• Go back to the previous interface.

4.1 Snapshots

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 then Successful will appear on the screen.

During Calling

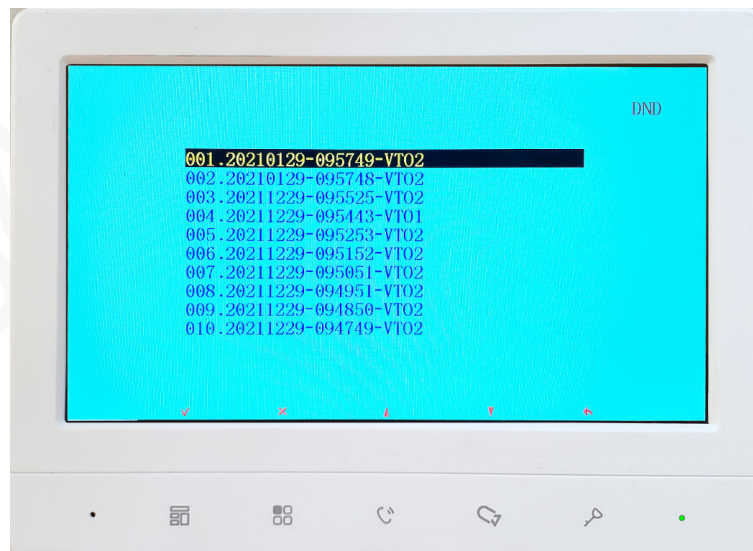
When a VTO is calling or in a call with a VTO, press , and then Successful will appear on the screen. If the calling lasts more than 1 second, a snapshot will be automatically taken.

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 .



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

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.



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

4.2 Time

Procedure

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

4.3 Restoring to Default Settings

Procedure



- Step 1** Press  to bring up the menu.
- Step 2** Press  to select Factory Reset.

Figure 4-4 Confirm 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 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;
- 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).