Video Conference Split Terminal Mini Box User Manual

NT90MB(B500)

NT90MB(B500-4)

NT90MB(B500-8)

NT90MB(B500-16)

Please read this manual in detail before using the system

Notification

WARNING

To ensure the reliability of the equipment and the safety of personnel, please observe the following when installing, using and maintaining:

- If any of the following conditions are found, please immediately turn off the power, plug out and quickly contact your nearest dealer. Do not continue using this unit, which may cause a fire or electric shock.

  - If you find smoke or have a strange taste from the machine.
  - If water or metal falls into the machine.
  - If the unit is dropped or the case is damaged.
  - If the wire is damaged (wire core exposure, broken wire, etc.).

- If the machine contains high-pressure parts, in order to avoid the fire or electric shock, absolutely don't open the case, if any questions please inform your nearest dealer.

- Do not place cups, bowls, vases or metal and other water-filled substances on the unit. Serious spilled liquid may cause a fire or electric shock.

- Never expose the unit to rain and any moisture or water, which may cause electric shock or fire.

- Do not place metal objects or flammable materials from the vents on the machine cover, nor place coins, which may cause fire or electric shock.

- Do not place heavy objects on the unit to avoid personal injury or property damage when the unit is slipping.

- Make sure that the volume is turned on at the beginning of the boot, and the high volume of the boot may cause hearing problems.

- For long-term accumulation of dust to be cleaned, please inform your dealer to regularly clean the machine, so as to avoid damage to the machine or cause a fire.

- The battery must be replaced with the same type of product and the correct installation should be made in order to avoid electrical damage and explosion hazard.

- The product is a Class III device. The device must be well connected to ground. The power plug must be connected to a power outlet with a grounding device to ensure that the equipment is fully grounded.

- This product uses a power plug or appliance input socket as a disconnecting device with the power supply, and must be disconnected if necessary for safety reasons.

- 

This equipment is only suitable for safe use at altitudes under 2000 meters.

Precautions

1. The installation environment

When installing the unit, in order to ensure the normal cooling of the host, should avoid the poor ventilation of the place or high temperature environment, to avoid direct sunlight.

Recommend to install cabinet or other well-ventilated place indoor. If you use the machine in the outdoors, please pay attention to waterproof, moisture, lightning protection measures.

Avoid installing in a violent place of vibration; do not place other equipment on the machine.

2. To avoid electric shock and fire

Do not touch the hands and the source with wet hands

Do not spill liquid on the machine, so as to avoid short-circuit or fire inside the machine.

Do not place other equipment directly on the top of the unit.

Non-professional service personnel Do not disassemble the unit yourself to avoid damage and electric shock.

3. Transport and handling

The packaging of the machine is designed and tested to ensure that the host will not be accidentally damaged during transport. It is best to use the original packaging when handling the unit.

Do not move the host device between the place or cold or over hot to avoid condensation inside the machine, affecting equipment life.

4. Please follow the warning instructions on this product, the warning signs on behalf of:

	Applicable to 2000 meters above sea level and below safe use
	Safe use only in non-tropical climates

5. Agreement

Please strictly follow the instructions in this manual. The software, hardware and appearance of this product will be upgraded and updated continually. The above changes will be made without notice.

Non-professional maintenance personnel, do not remove the product, to avoid damage and electric shock.

CONTENTS

1.Product Overview

itc video conference split terminal user manual is suitable for administrators who need to configure, customize and manage video conference split terminal products and troubleshoot systems.

This guide applies mainly to the following engineers

- Video conference system administrator
- Video system technical support

1.1. Product Name

The name of this product is itc Video Conference Split Terminal Mini Box.

1.2. Product Philosophy

Simple, easy to use, rich data conference function.

1.3. Product Description

New split high-definition video conference terminal, H.265 technology, rich audio and video interfaces. Ultra-low bandwidth can achieve ultra-high-definition 4K effect. It's suitable for all kinds of small and medium-sized conferences.

1.4. Feature

1.Adopt split structure, built-in hardware video processing unit, support dual systems (Linux/Android);

2.With a wealth of audio and video interfaces, 4 channels of audio input, including HDMI×1, 3.5mm port×2, RJ45×1; 2 channels of audio output, including HDMI×1, 3.5mm port×1; 3 channels of high-definition video input, 2 channels of high-definition video output, supporting up to 4k60f;

3.Support IP network packet loss repair mechanism to ensure that the image is acceptable at 30% of the packet loss, the audio and conference will not be affected at 80% packet loss rate;

4.Super network adaptability to ensure the smooth conference according to the network automatically adjust the resolution;

5.Realize H.239, BFCP dual-stream protocol, both main and auxiliary streams can reach 4K;

6.Support single screen dual display, dual screen dual display function;

7.Support picture-in-picture function;

8.Built-in conference recording module, integrated venue recording;

9.Built-in electronic whiteboard, electronic voting, file sharing and other data conference functions;

10.The terminal supports 16 points of built-in MCU function(MAX), and can independently convene a 16-party conference;

11.Can flexibly open, close, drag and drop remote video screen;

12.Supports PTZ camera control for this terminal and remote venue;

13.Support subtitles, banners and other operations;

14.Built-in wifi module, can use wifi network to hold meetings;

15.The device application mall provides Tencent Meeting Rooms, DingTalk, ZOOM, MicrosoftTeams and other mainstream video conference software download (Android system)

16.Can view forms, documents and other information through the device (Android system)

17.Support to synthesize the 2-channel mainstream screen into one channel and transmit it to the remote terminal, and the screen layout is optional;

18.Support AI function, allowing real-time subtitle transcription and simultaneous interpretation.

1.5. Product agreement

Symbolic agreement

The following signs may appear in this article, which represent the following meanings.

Symbol	Note
Danger	The text starting with this sign indicates a high potential danger, otherwise it may result in death or serious injury.
Warning	The text starting with this sign indicates a moderate or low potential danger, otherwise it may cause minor or moderate injury to personnel.
Caution	The text starting with this sign indicates potential risks, otherwise it may result in device damage, data loss, device performance degradation, or unpredictable results.

Common format agreement

Format	Description
SimSun	Body text is indicated in SimSun font.

SimHei	The first, second and third level headings and Block Label are indicated in SimHei.
KaiTi	Warnings, tips, and other contents are indicated in KaiTi.
“Terminal Display” format	The “Terminal Display” format indicates screen output information. In addition, the information entered by the user from the terminal, which is interspersed in the screen output information, is indicated in bold font.

Graphical interface element reference agreement

Format	Meaning
“”	The format with double quotation marks indicates the names and data tables of various interface controls, such as clicking "OK ".
>	Multilevel menus are separated by >. Select File > New > folder to indicate the folder menu item under the New submenu under the File menu.
< >	<> format represents the name of the remote control button, such as pressing the <HELP> key.

Requirements for storage and working environment

Indicator items	Conditions
Temperature	Operating temperature range:0℃~35℃, Storage temperature range:-10℃~50
Humidity	Working humidity range:10~80 R.H, Storage humidity range:10~90%R.H
Dustproof	The device can not completely prevent dust from entering.
Waterproof	The device can not completely prevent water from entering.

2.Preparation and Installation

2.1. Main Accessory

Name	Quantity
HD video conference split terminal	1
Power adapter	1
HDMI cables	1
Remote control (With receiver)	1
User manual	1

Table 2-1

2.2. Main interface

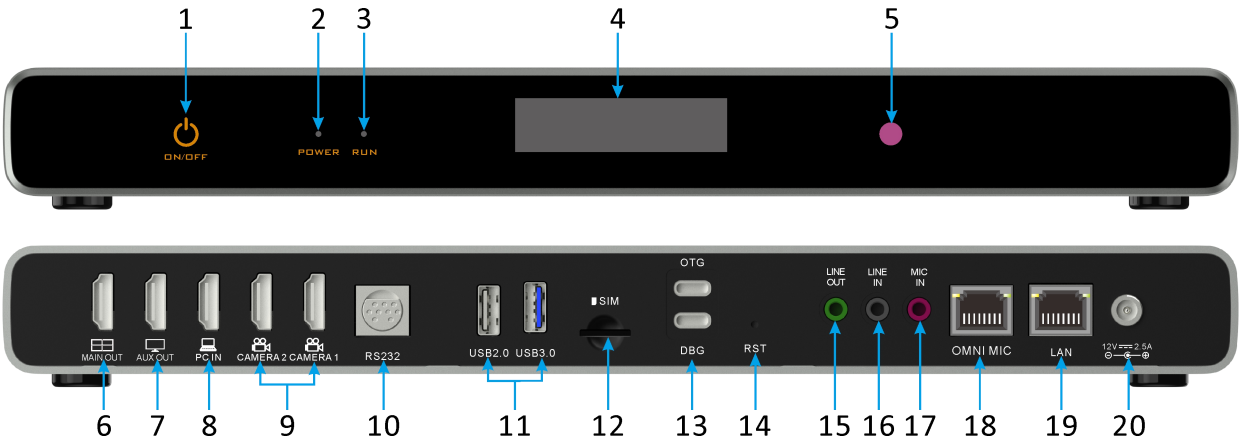


Figure 2-2

1.ON/OFF: power on/off button;

2.POWER: Power indicator light;

3.RUN: Device running status indicator light;

4.Display screen: OLED display screen, displaying the operating status and IP address of the device;

5.Remote control infrared receiving window;

6.MAIN OUT: Main screen output.

7.AUX OUT: Auxiliary screen output.

8.PC IN: PC computer signal input.

9.CAMERA 1/2: Main camera signal input.

10.RS232: Camera control serial port.

11.USB2.0/3.0: Connect to the mouse, U disk, remote control receiver for use.

12.SIM: sim card interface.

13.OTG: System burn port.

14.DBG: System debugging serial port.

15.LINE OUT: 3.5mm audio line output.

16.LINE IN: 3.5mm audio line input.

17.MIC IN: Microphone input (48V phantom power).

18.OMNI MIC: rj45 omnidirectional microphone port.

19.LAN: RJ45 network port.

20.12V-2.5A: 12V power interface.

Note: HDMI cables support a maximum transmission distance of 10 meters.

2.3. Remote control instructions (Linux)

Figure 2-3

1. , Terminal power on/off key, to realize the terminal on/off. (Note: This key is infrared signal, when using it, you need to align with the IP display window of the terminal; all other keys are 2.4G signals, which can be used without alignment.)

2. , Microphone on/off key, turn on or off the local microphone after joining the meeting.

3. , Menu key, when the terminal is in idle state, press this button to call up the OSD menu; when the terminal is in a meeting, press this button to call up the meeting management menu.

4. , Return key, return to the previous menu.

5. , Delete key, delete the error content in the text input state.

6. , Call key, realize dialing call, used for terminal one-key joining the conference in interfaces other than dialing, call record and address book.

7. , Hang up key, realize hang up call.

8. , Direction key and OK key, the direction key is used for camera rotation, OK key is used for menu selection confirmation.

9.  , Volume adjustment key, to adjust the volume of local terminal output.

10.  , Camera zoom key, control the zoom of camera image.

11.  , Mouse key, call out the cursor into the mouse control mode. In mouse control mode, pressing this button is equivalent to click the left mouse button, pressing the Return key or Menu key can hide the cursor and exit the mouse control mode.

12.Numeric keypad, used to input numeric characters. (Note: After the camera is adjusted to the desired position, press the # key and then press the numeric key to save the preset position, click the numeric key to go to the corresponding preset position, which can save a total of 10 preset positions from 0 to 9.)

13.Combined key use

Call key + numeric key (1-7): Switch the screen layout in the meeting, 1-7 corresponds to the screen template in order

Call key + "." : start/end shared auxiliary stream

Mute key + Return key: switch the terminal signal output mode, it will restart automatically

2.4. Remote control pairing instructions

A remote control and a receiver are paired when they leave the factory, so the receiver can be automatically connected to the USB interface of the conference terminal. If the remote control can not be connected to the receiver normally due to misoperation or other reasons during use, it can be connected by the following methods:

Plug the receiver into the USB of the conference terminal, close the remote control to the receiver (within 10cm), and hold down the [OK] key, and [] key on the remote control for about 3 seconds. It will flash three times after a few seconds to indicate successful connection. If it has not been able to pair, it will flash 3 times after 30 seconds and lights off to exit the connection mode.

3.System Connection Chart

Figure 3

4.System Display Status (Linux)

Figure 4

The device boots and enters the display interface as shown in figure 4. The bottom of the interface is the menu bar. Use the mouse click or remote control menu key to display the menu. The upper right corner shows the local system time. The top of the interface shows the local IP address, when the local login gatekeeper, SIP account, cloud account, H323, SIP, cloud service sign display green. For gatekeeper and cloud account login method, please see this manual 10.4.2 H323 setting ,10.4.3 SIP setting and 10.4.4 VCS setting.

5.Dial (Linux)

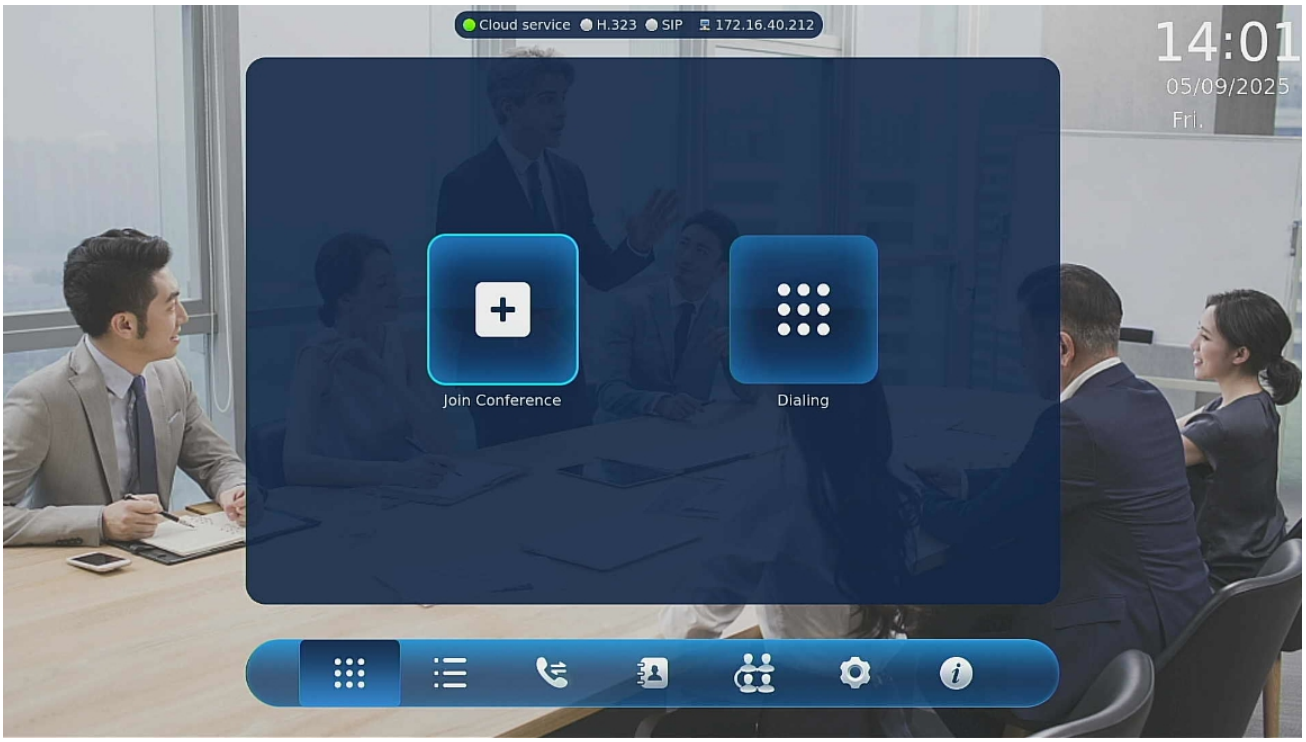


Figure 5

Use the mouse click or remote control menu key to display the dial call menu, as shown in figure 5. Please confirm the VCS cloud server address and account password with the administrator before joining the conference, and fill in the correct server address and account password in the System management-Advanced setting-VCS setting.

5.1. Join a conference

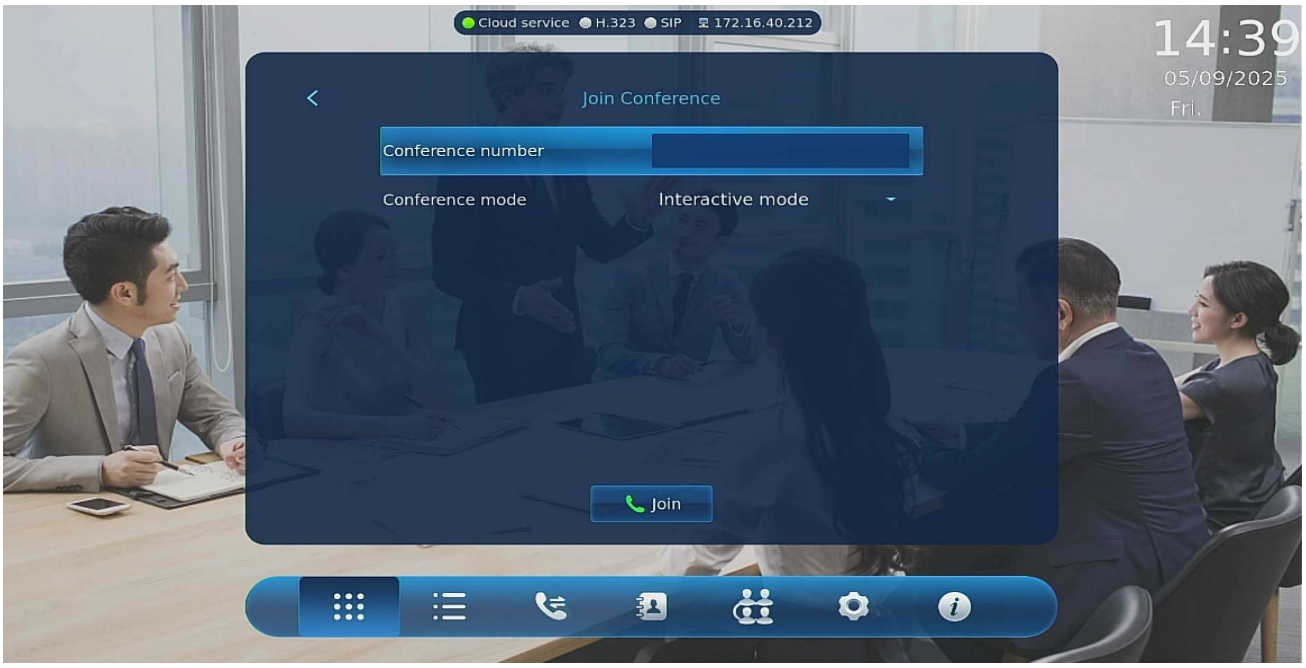


Figure 5-1

Enter the correct conference number to attend the conference, and users can choose to participate in the conference interaction or watch the conference live.

5.2. Dial

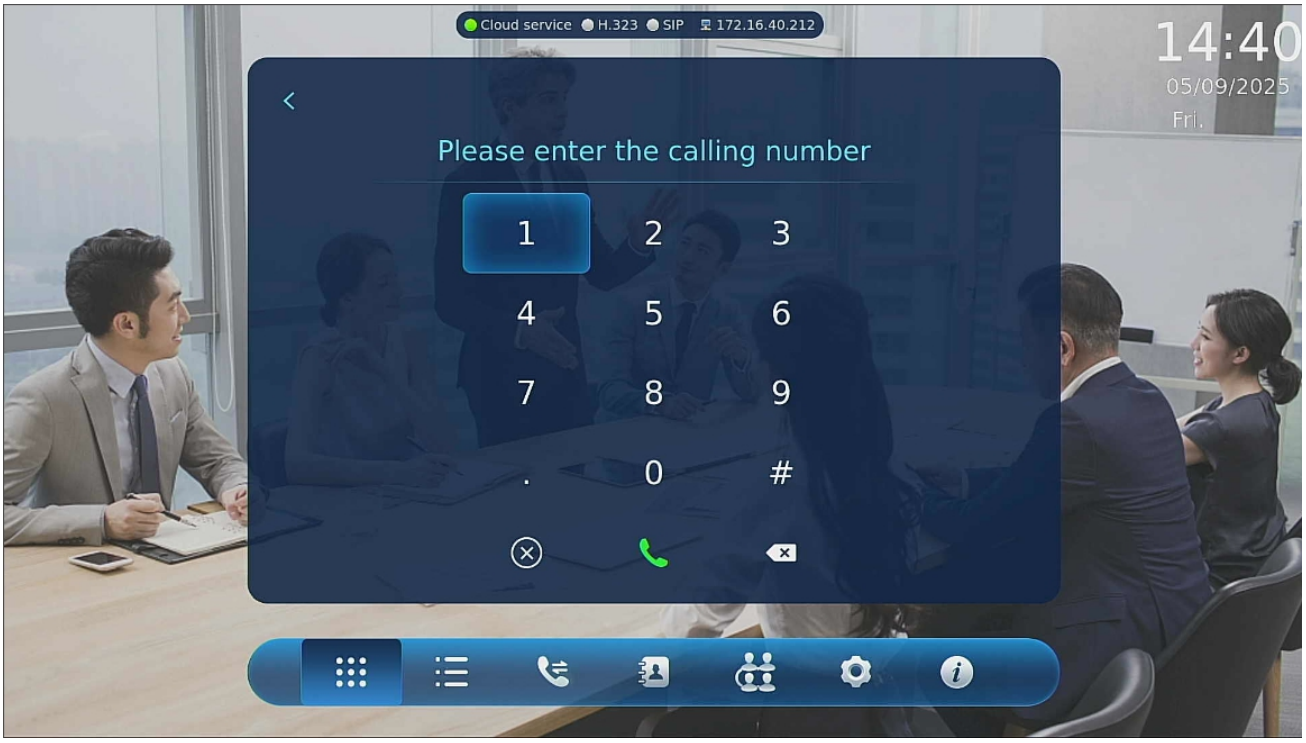


Figure 5-2

Protocol type: H323 mode is used to call the IP address of the H323 device or the extension number after registering gatekeeper;

SIP mode is used to call the IP address of the SIP device or the registered SIP account.

When you enter the IP address or account of the H323 device, SIP device correctly, click the dial button below the dial menu or press the call button of the remote control to initiate the call.

(Note: The call button on the remote control is used for terminal one-key joining the conference when it comes to interfaces other than dial-up, call record, and address book. See 10.1 Basic setting in this Manual for the setting method of one-key joining the conference)

6.Conference list (Linux)

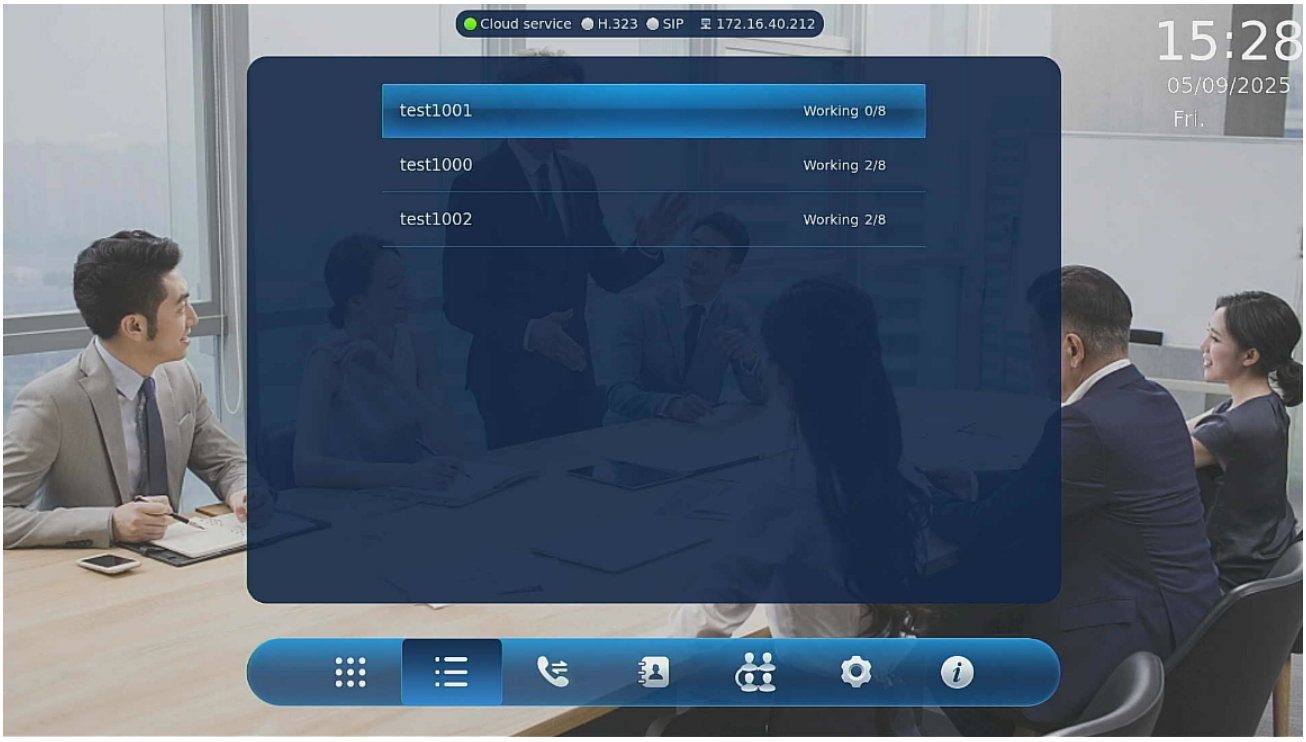


Figure 6

After the terminal logs in to the VCS account (cloud service), the conference list on the server is automatically obtained.

Users can press the OK key through the remote control or click the left mouse key to join the conference.

7.Call record (Linux)

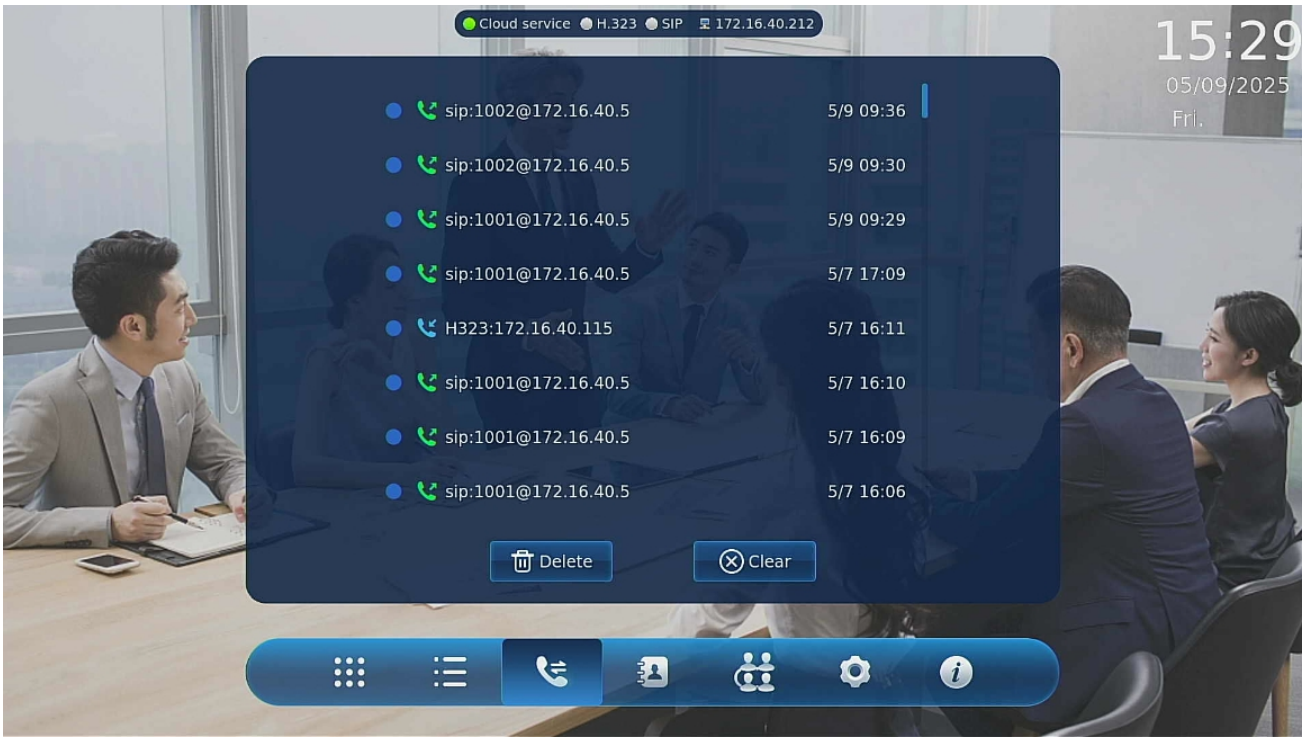


Figure 7

The call record shows the incoming and outgoing record of the machine. Users can quickly initiate a call via the remote control call key or by double-clicking the mouse.

8.Address Book (Linux)

8.1. Local address

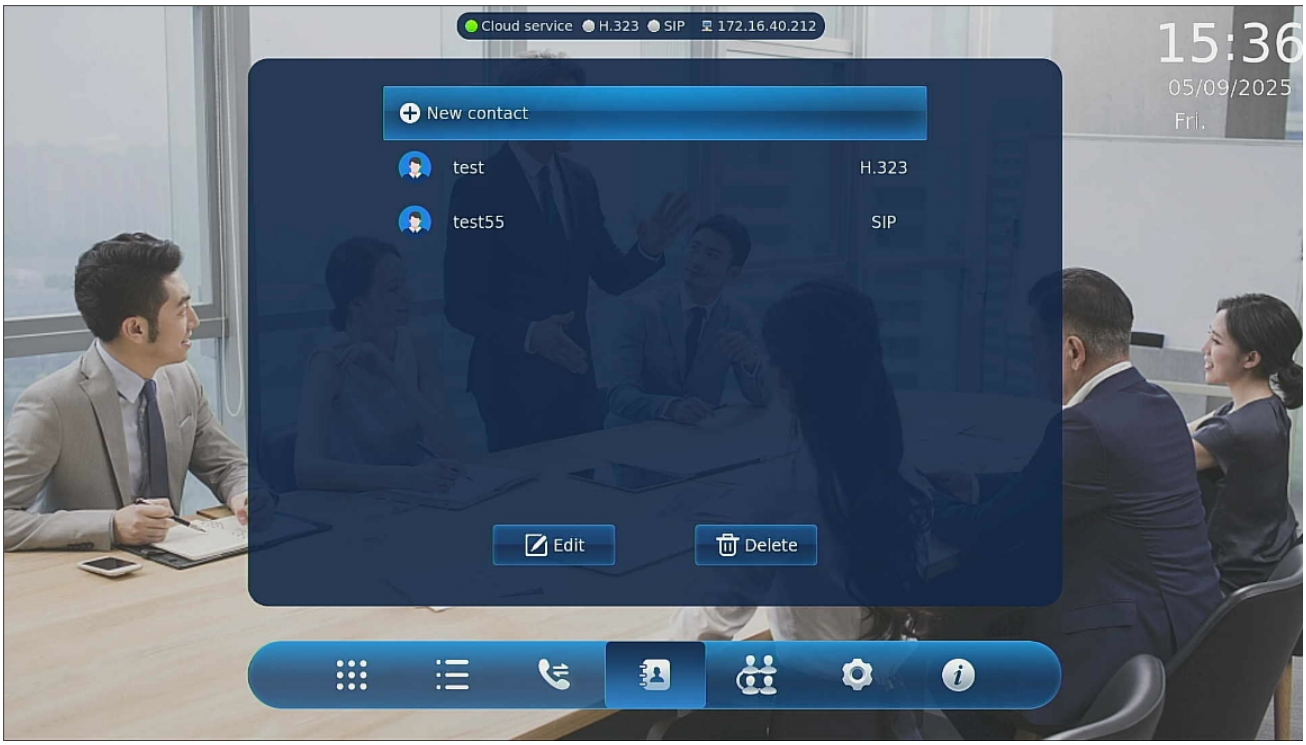


Figure 8-1

Local address book: display the local contacts, users can quickly initiate a call via the remote control call key or by double-clicking the mouse.

8.1.1.New contacts

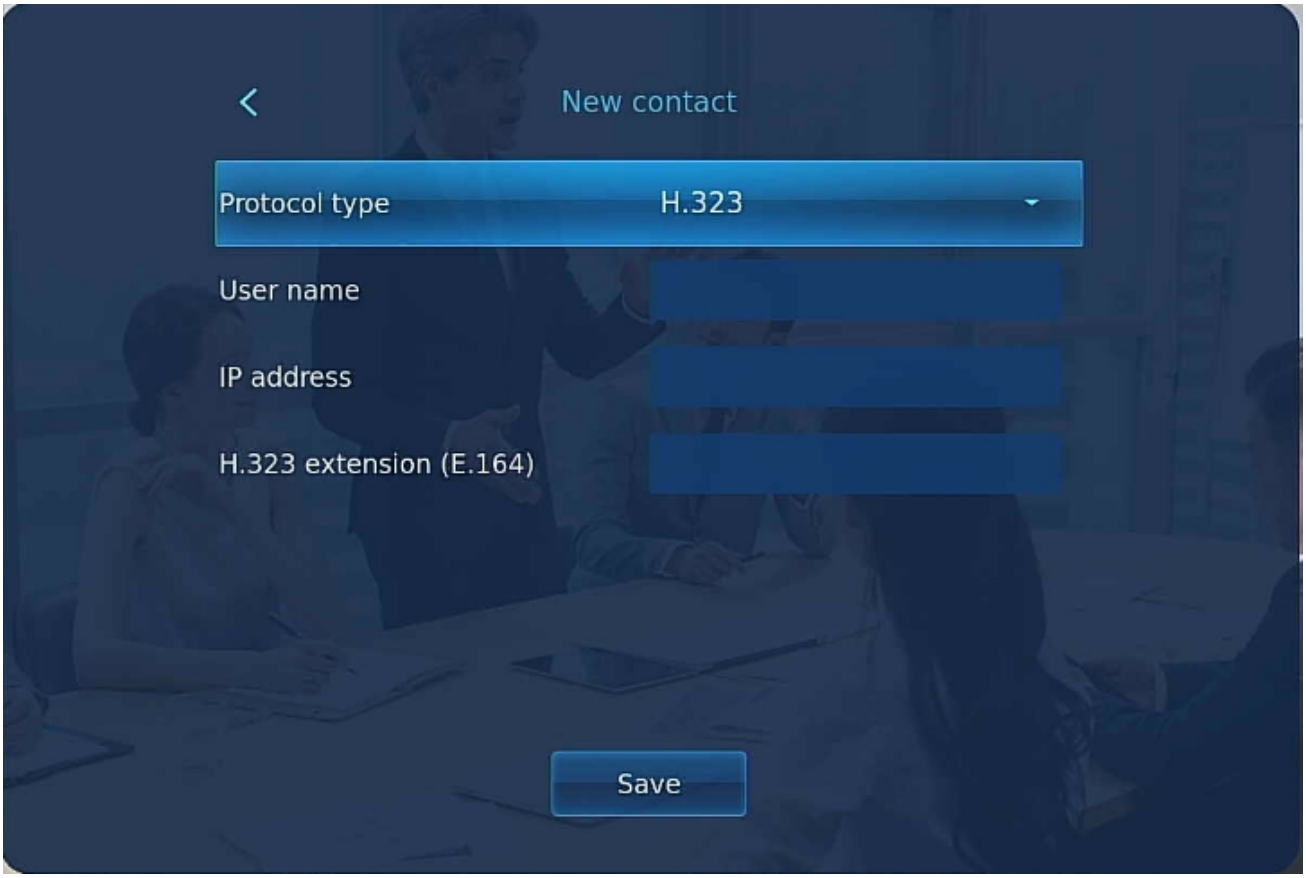


Figure 8-1-1

(1)Protocol type: Select the type of new contact, H323, SIP type.

(2)User name: Fill in contact display name.

(3)IP address: Fill in the IP address of the contact person.

(4)H323 extension (E.164): Fill in the extension number used by the contact for registration of the gatekeeper. (Do not fill in if the server is not registered with the gatekeeper)

(5)SIP account: Fill in the SIP account used by the contact for registration of SIP. (Do not fill in if the server is not registered with SIP)

9.Convene conference (Linux)

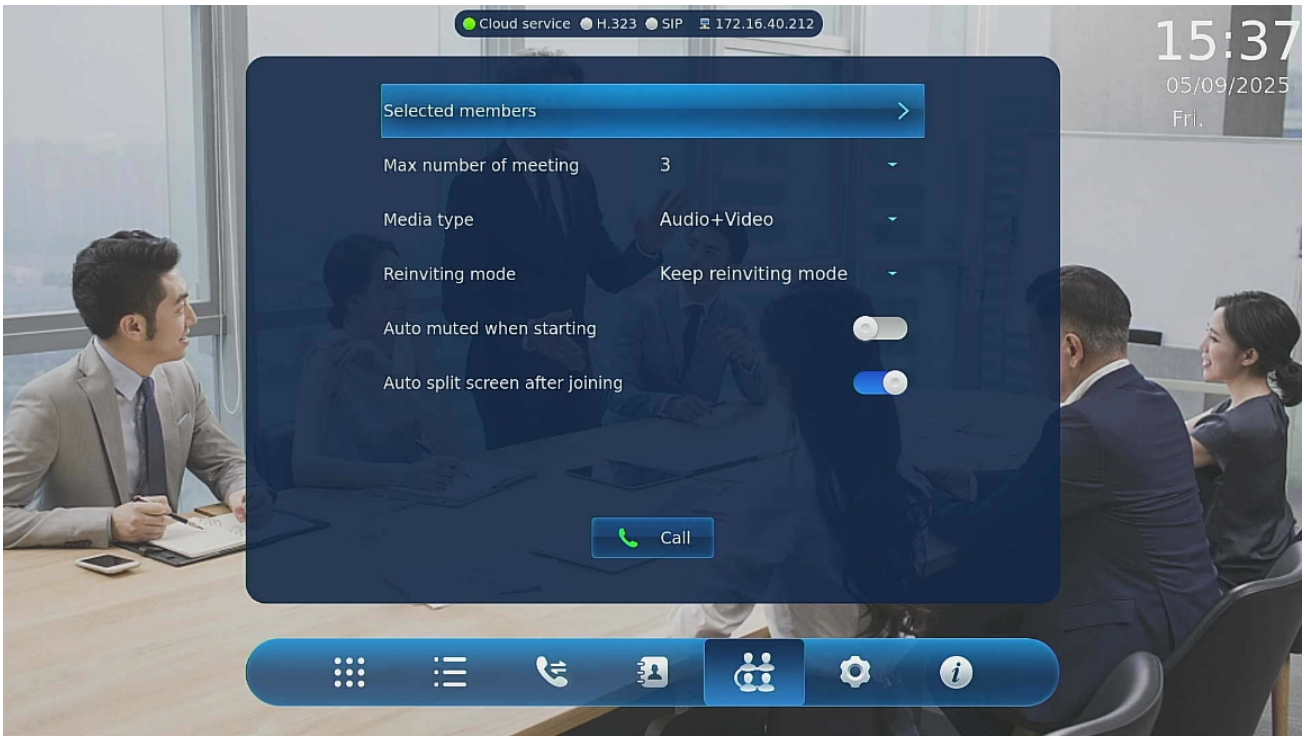


Figure 9

Convene conference: Hold built-in MCU conference. For details of operation of built-in MCU conference, see 13 Terminal built-in MCU conference in this manual.

(1)Select members: You can add H323 type or SIP type of contact in the local address book to the list of conference members and invite selected members to join the conference at the same time. (Note: Other terminals can still call the local IP to join the conference via H323 or SIP dial mode if no conference members are added to the conference when convening a conference)

(2)Maximum venues: Limit the number of venues.

(3)Media types: Support audio and video conference, and pure audio conference.

(4)Re-invitation mode: When “Always invite” is selected, the built-in MCU terminal will automatically re-invite when the terminal is abnormally disconnected..

(5)Automatic mute upon joining: When Automatic mute upon joining is enabled, the participant terminals will be muted.

(6)Automatic split screen upon joining: When it is enabled, the conference will automatically switch the display template according to the number of venues.

10.System management (Linux)

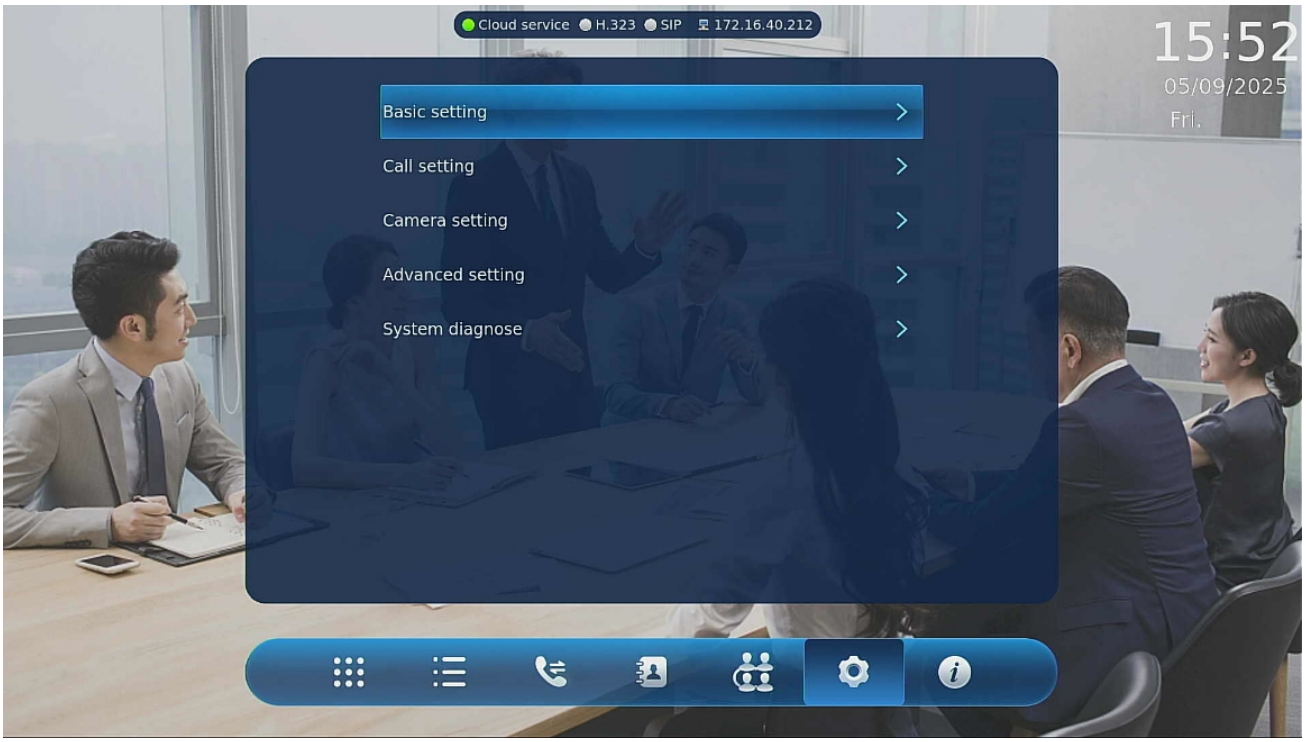


Figure 10 System management

1. Basic setting, setting such as the name of the machine, display language, system time, please see 10.1 Basic setting in this manual for details.

2. Call setting, setting such as answering method and audio/video protocol of this machine, please see 10.2 Call setting in this manual for details.

3. Advanced setting, setting such as gatekeeper registration and VCS account loginof this machine, please see 10.3 Advanced setting in this manual for details.

4. System diagnostics, setting such as audio/video self-test and reset, of this machine, please see 10.4 System diagnostics in this manual for details.

10.1.Basic setting

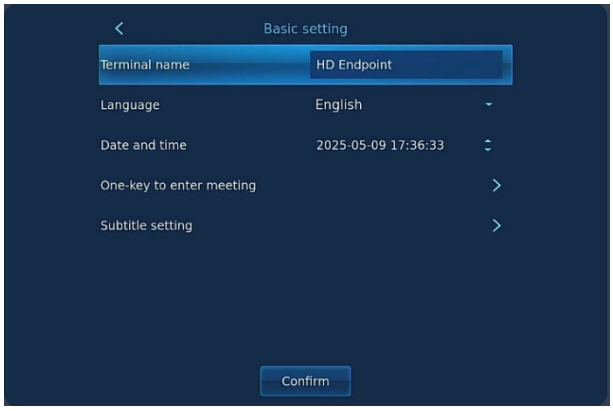


Figure 10-1

(1)Terminal name: Set the display name of the terminal, supporting entering Chinese and English, numbers and characters.

(2)Language: Set terminal OSD interface display language, supporting Chinese and English switching.

(3)Date and time: Set the display date and time of the terminal.

(4)One-key joining: Set protocol type, fill in the conference number/IP, and then use the remote control call button to join the conference in the terminal idle state.

(5)Subtitle setting: Set parameters such as font size and color for the local name, venue name and local banner for the conference.

10.2.Call setting

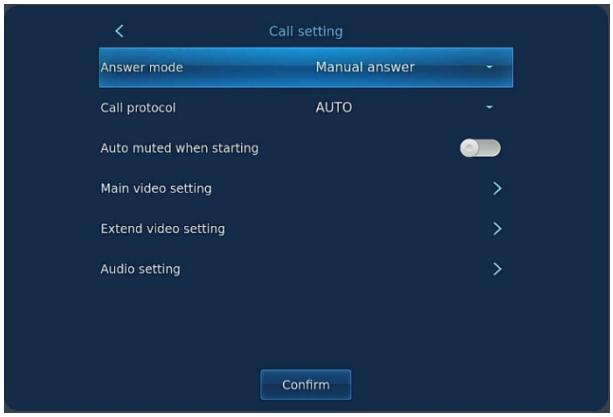


Figure 10-2

(1)Response mode: Support Manual response, Automatic response and Do not disturb mode.

Manual response: When Manual response is set, manual answer is required to receive remote call.

Automatic response: When Automatic response is set, terminal can answer automatically when it receives remote call.

Do not disturb mode: When Do not disturb mode is set, terminal will automatically reject the

remote when it receives remote call.

(2)Call protocol: AUTO, SIP, H.323 can be supported, after selecting, logging in vcs account to join the conference from conference list, the corresponding communication protocol will be used to join, when selecting AUTO, the default is SIP.

(3)Automatic response mute: The terminal is set to Automatic mute upon joining and Automatic response as the response mode. When it receives remote call, the terminal will automatically answer the call and join the conference and the local microphone will be turned off.

10.2.1.Main video setting

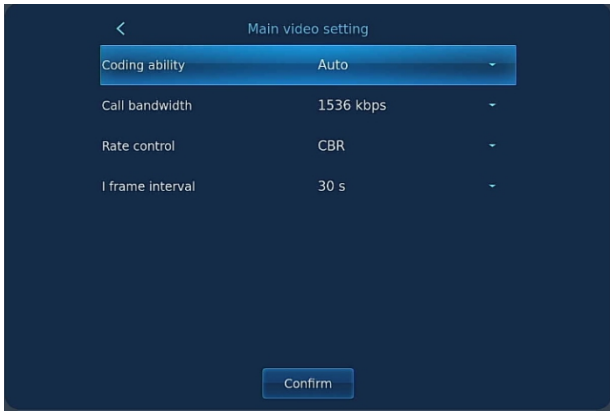


Figure 10-2-1 Main video setting

(1)Coding ability: Set the coding protocol for mainstream video coding in terminal conferences.

(2)Call bandwidth: Set the mainstream video bit rate in terminal conferences.

(3)Rate control: Set the video bit rate control mode in terminal conference.

CBR: Constant code rate; VBR: Dynamic code rate.

(4)I frame interval: Set the video key frame interval time in the terminal conference.

10.2.2.Auxiliary video setting

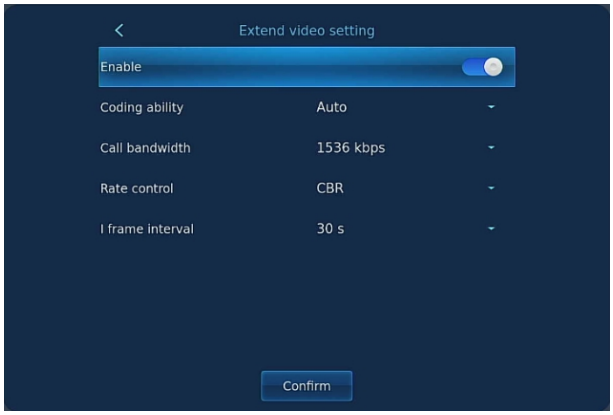


Figure 10-2-2

(1)Enable auxiliary stream: Set whether terminal conferences enable auxiliary stream video.

(2)The remaining setting are the same as the 10.2.1 Main video setting above.

10.2.3.Audio setting

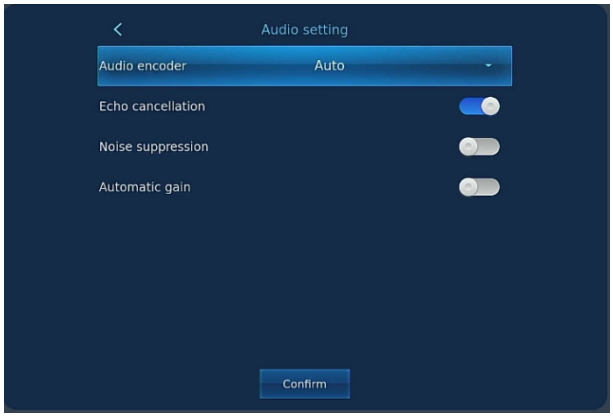


Figure 10-2-3

(1)Audio encoder: Set the coding protocol for audio coding in terminal conferences.

(2)Echo cancellation: Enable it to eliminate the echo, and it is Enable by default.

(3)Noise suppression: Enabling Noise suppression can have a certain effect on environmental noise.

(4)Automatic gain: The input volume can be automatically adjusted according to the distance between the speaker and the microphone.

10.3.Camera setting

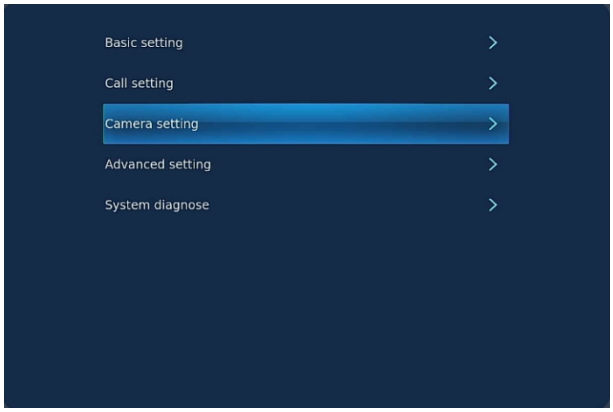


Figure 10-3

Camera setting: You can set the power-on preset position. Use the remote control to adjust the camera to a suitable position, set the preset position, fill in the number of preset positions here, and every time the terminal is turned on, the camera is controlled to this position.

10.4.Advanced setting

Figure 10-4

Network setting, local IP and WIFI connection and other setting, see 10.4.1 Network setting in this manual for details.

H.323 setting, local gatekeeper registration and H.323 protocol related setting, see 10.4.2 H.323 setting in this manual for details.

SIP setting, local SIP registration and SIP protocol related setting, see 10.4.3 SIP setting in this manual for details.

VCS setting, local cloud service and account setting, see 10.4.4 VCS setting in this manual for details.

NTP setting, local time synchronization setting, see 10.4.5 NTP setting in this manual for details.

Audio device, local audio input and output device setting, see 10.4.6 Audio device in this manual for details.

Video device, local video output resolution setting, see 10.4.7 Video device in this manual for details.

WEB setting, local web end setting, see 10.4.8 WEB setting in this manual for details.

Password setting, local advanced setting password protection setting, see 10.4.9 Password setting in this manual for details.

Other setting, other setting of local conference function, see 10.4.10 Other setting in this manual for details.

Restore factory setting: Restore the system and parameter configuration to the factory state.

10.4.1.Network setting

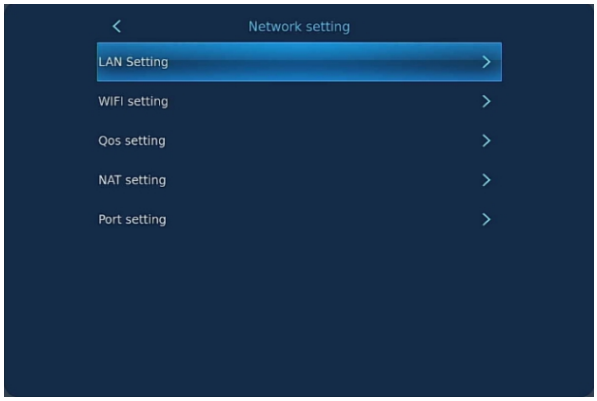


Figure 10-4-1

(Note: Do not connect LAN and WIFI to the same router, otherwise it will lead to network performance degradation)

(1)LAN setting: Contains IPv4 setting and IPv6 setting, used to configure the device IP.

(2)WIFI setting: Set whether the WIFI device is enabled on this machine. After a successful WIFI connection, the device can automatically connect to the same WIFI network when it is booted up.

(3)QoS setting: Network quality service setting.

(4)NAT setting: Network address conversion setting. This function needs to be enabled and the mapping address needs to be filled in correctly when using port mapping.

(5)Port setting: Set the local media communication port range, and the default port range is 5000-5200.

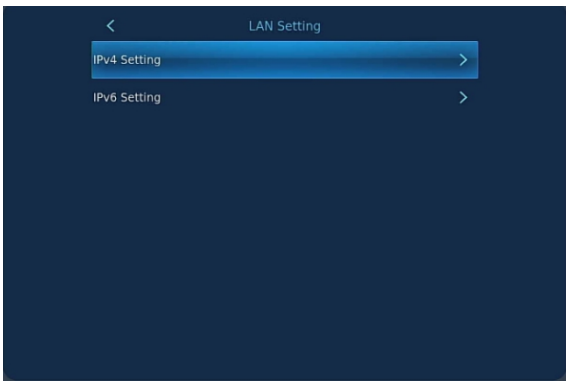


Figure 10-4-1(1)

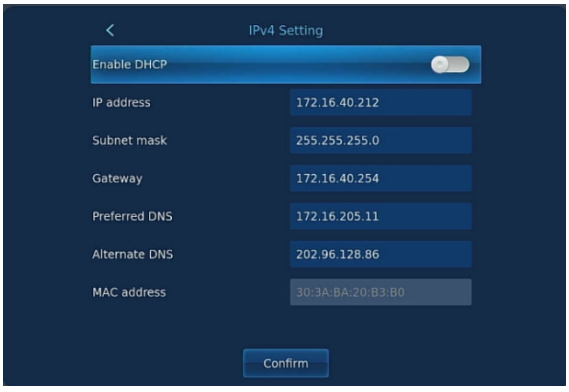


Figure 10-4-1(2)

Figure 10-4-1(3)

(1)IPv4 setting: Select whether to enable DHCP automatically obtain IP. When not enabled, IP can be configured manually.

(2)IPv6 setting: Select whether to enable IPv6 function, and you can select whether to use DHCP automatically obtain IP. When not enabled, IP can be configured manually.

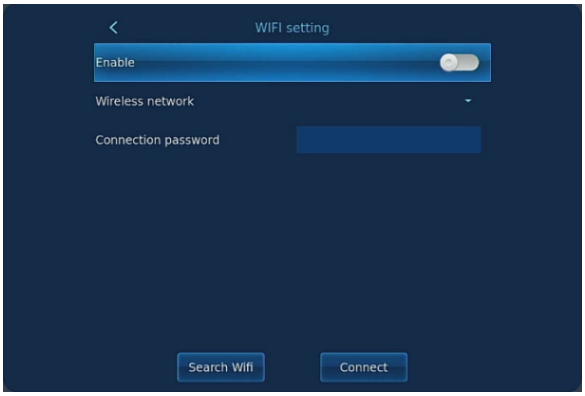


Figure 10-4-1(4)

(1) Enable WIFI: Set whether to enable WIFI device on this machine.

(2) Wireless network: Search for WIFI hotspot and then select the hotspot to connect.

(3) Connection password: Enter the connection password of the WIFI hotspot.

(4) Connected WIFI: Display the name of the WIFI hotspot that the device is currently connected to (null when the hotspot is not connected).

(5) Search WIFI: Search for nearby WIFI hotspots.

(6) Connection: Connect the hotspot after selecting the WIFI hotspot and filling in the connection password correctly.

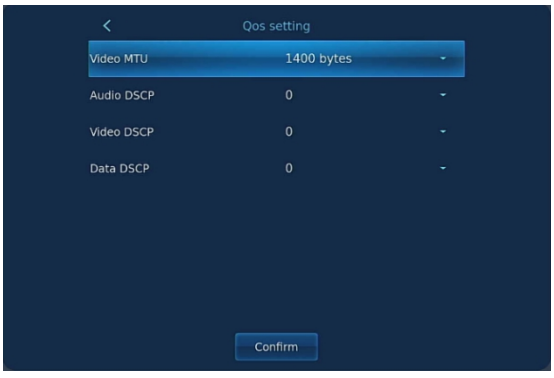


Figure 10-4-1(5)

(1)Video MTU: The size of video RTP packets.
(2)Users need to configure the QoS of the terminal according to the QoS configuration of the router to which the user terminal is connected. At present, the terminal only supports the QoS mechanism of differentiated services.

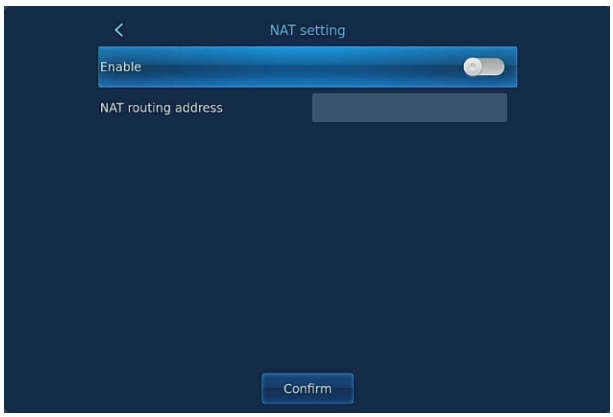


Figure 10-4-1(6)

(1) Enable NAT: Set whether the NAT address translation function is enabled on this machine.
(2) NAT route address: Used for internal and external network traversal function, binding the external IP mapped by the router. It is set under the guidance of the network administrator.

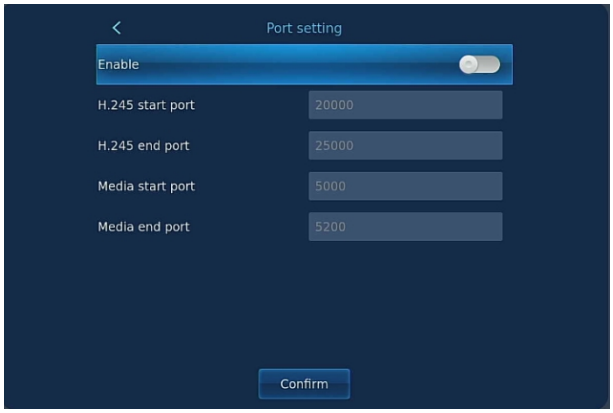


Figure 10-4-1(7)

(1) Enable port setting: Set whether the machine enables port setting to use the specified port.
(2) Set the port for sending and receiving video conference media content. |Enable port setting when the on-site network environment requires the specified port to be used for video conferencing, and No setting are required by default.

10.4.2.H.323 setting

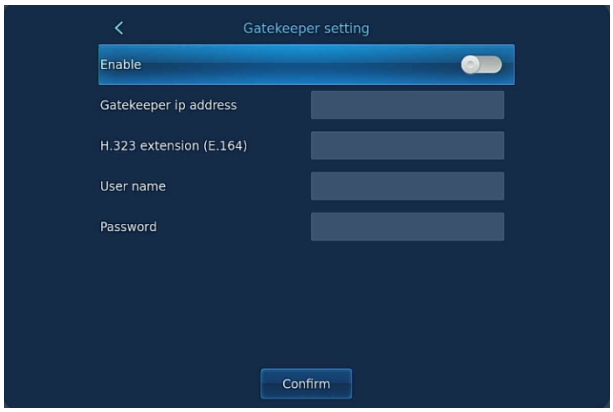


Figure 10-4-2(1)

Gatekeeper setting:

(1) Register gatekeeper: Set whether the gatekeeper registration function is enabled on this machine.

(2) Gatekeeper IP address: Correctly fill in the IP address of the gatekeeper server to be registered.

(3) H.323 extension (E.164): Set the H.323 extension number of this machine after registering the gatekeeper.

(4) User name: Fill in the user name for registering with the gatekeeper server. When the gatekeeper server does not enable account and password authentication, it is not necessary to fill in here.

(5) Password: Fill in the password for registering with the gatekeeper server. When the gatekeeper server does not enable password authentication, it is not necessary to fill in here.

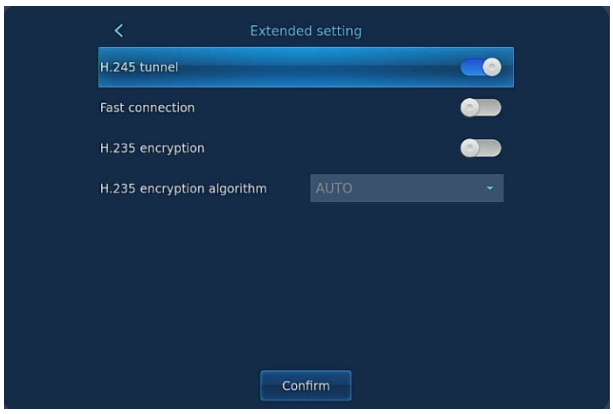


Figure 10-4-2 (2)

Extension setting:

(1) H.245 tunneling: Protocol inside H.323. It can reduce the occupancy of call ports and is Enabled by default.

(2) Quick link: Protocol inside H.323, and is Not enabled by default.

(3) H.235 encryption: Encrypt the transmission data.

10.4.3.SIP setting

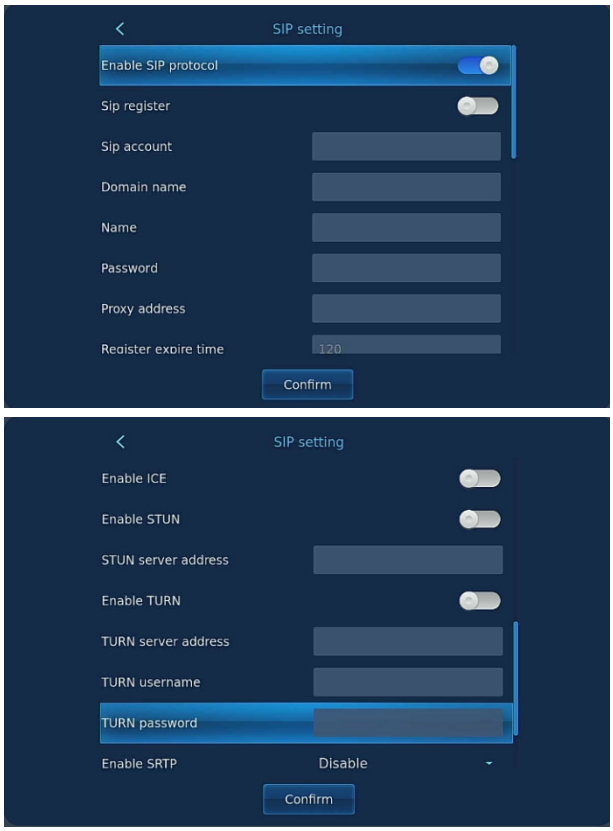


Figure 10-4-3

(1) Register SIP: Set whether the SIP registration function is enabled on this machine.

(2) Account: Fill in the account number used for SIP registration, which is used for SIP paging and cannot be repeated.

(3) Domain name: Fill in the IP address of SIP server.

(4) Verification name: Fill in the verification name used for SIP registration.

(5) Password: Fill in the password used for SIP registration, which is uniformly set by the SIP server.

(6) Proxy address: If the system has enabled the SIP proxy server mode, fill in the IP address of the SIP proxy server here.

(7) Registration timeout: set the timeout time for SIP registration, which is 300s by default.

(8) Protocol: Selection of SIP transmission protocol.

(9) DTMF: Set the DTMF type.

(10) ICE: Establish connection in complex network environment, especially in the presence of NAT and firewall.

(11) TURN: Mainly used for NAT penetration.

(12) STUN: Part of the ICE framework, used to provide relay candidate addresses.

(13) SRTP: Used for data encryption.

10.4.4.VCS setting

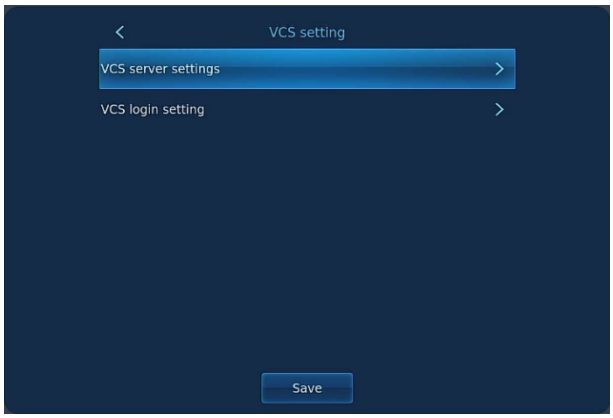


Figure 10-4-4

(1)VCS server setting: When local deployment has video conference MCU, fill in the IP address of the video conference MCU here. VCS port is 1790 by default. http port can be obtained automatically without setting.

(2)Login setting: Set the local login cloud service account, and fill in the account password correctly.

10.4.5.NTP setting

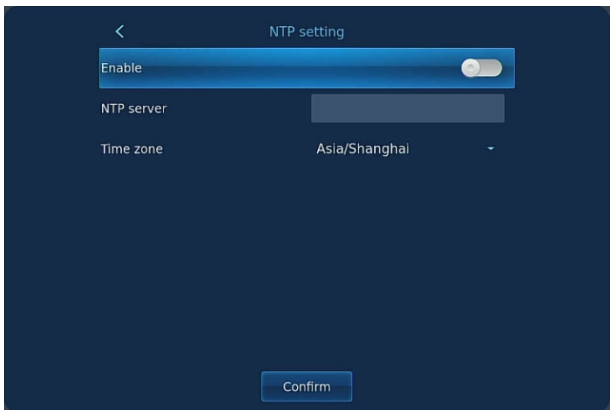


Figure 10-4-5

Enable time synchronization, the terminal synchronizes system time to the NTP server, and a time synchronization will be performed when the synchronization is enabled or saved at boot.

10.4.6.Audio device

Figure 10-4-6

(1) Audio input device: You can select the type of audio input device, which supports selecting Line in or USB input.
(2) Mixing setting: When selecting Line-in+Mic-in+OMNI-Mic for audio input, only then you can select mixing setting, which supports switching on/off Line in, Mic in and other inputs individually.
(3) Audio output device: Select the audio output type.
(4) Audio input gain: Set the local audio input gain. The larger the gain factor, the higher the audio input amplification.
(5) Auxiliary stream audio: You can switch on/off the HDMI audio captured by PC IN port.
(6) Phantom power: Set whether the terminal Mic in interface turns on phantom power.

10.4.7.Video device

Figure 10-4-7

(1) Output resolution: Set the output resolution of the main and auxiliary screens of the terminal, and the maximum resolution of the main and auxiliary screens can be set to 3840*2160. (Note: Before modifying the resolution, please confirm whether the screen supports this resolution).
(2) Output color mode: Support RGB and YUV color format output.
(3) Output signal mode: Support Hot plug and Strong push mode. Try to switch the output signal mode when there is no signal at the output.
(4) Main video input device: The main video screen captured by the terminal, which can display the screen of Camera1 or Camera2 alone, or the synthesized screen of Camera1+Camera2.
(5) Auxiliary screen output content: Set the local auxiliary screen output content.
(6) Automatic sending for auxiliary stream unplugging: Unplugging the PC IN signal source in the conference to automatically turn off or start the auxiliary streaming screen.
(7) Main video screen synthesis: When the main video input device is Mixer, you can choose Camera1+Camera2 synthesized screen layout.

10.4.8.WEB setting

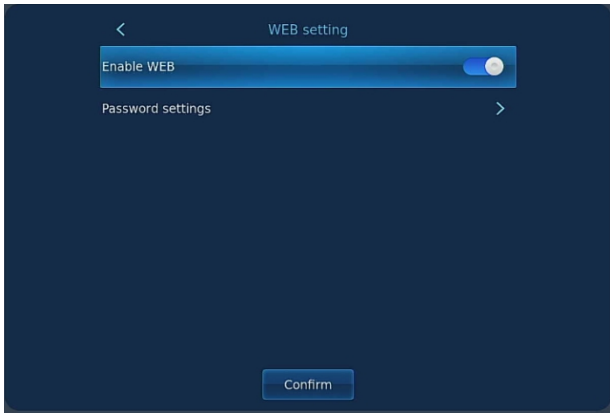


Figure 10-4-8

（1）Enable WEB: Whether to enable web access.
（2）Password setting: Change the password for the web side.

10.4.9.Password setting

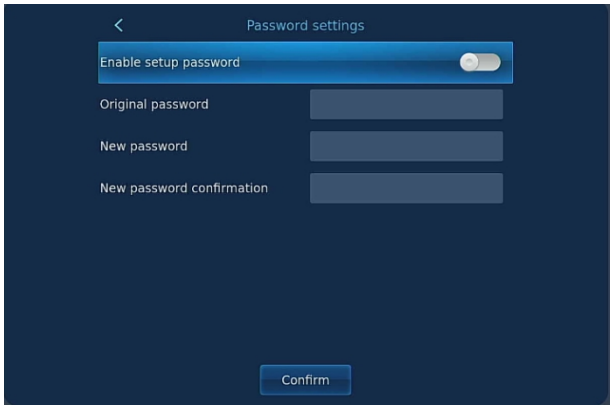


Figure 10-4-9

(1) Enable setting password: After enabling the setting password, users need to enter the password to enter the advanced setting interface.

(2) Original password: No original password for the first time.
(3) New password: Set the password for advanced setting.
(4) New password confirmation: Verify the input of new password.

10.4.10.Other setting

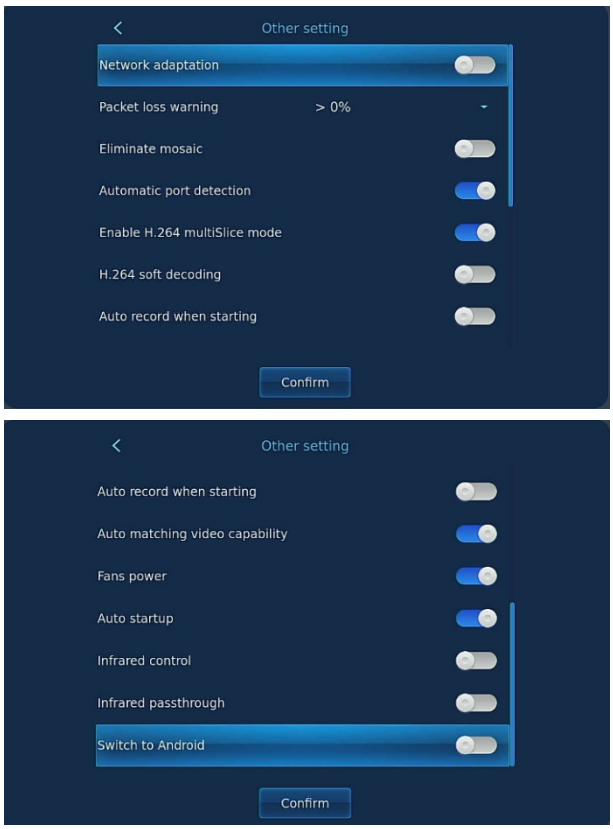


Figure 10-4-10

(1) Network self-adaptation: The video resolution and bit rate of the terminal can be automatically adjusted according to the packet loss rate and delay.
(2) Packet loss alarm: Set the alarm when the packet loss rate reaches a certain level, and it can also be set to Disable.
(3) Video mosaic elimination: Set whether the terminal enables video mosaic elimination.
(4) Automatic port detection: Automatically detect the sending port when the terminal sends data, which is recommended to be enabled when realizing internal and external network traversal.
(5) Enable H.264 slice mode: Divide the video frame into multiple independent slices to improve the robustness and flexibility of video transmission, generally compatible with terminals of different manufacturers.
(6) Enable advanced decoding mode: When enabled, the terminal uses soft decoding mode, which is disabled by default.
(7) Automatic recording upon joining: After the terminal is connected to the U disk, enabling this function allows it to automatically start recording the conference upon joining the conference.
(8) Auto-matching video capability: When enabled, the video capability set of the terminal will be matched automatically according to the parameter setting of the opposite terminal.
(9) Fan switch: Set the switch of the internal cooling fan of this machine, On by default.
(10) Power-on startup: After turning on this function, the terminal can be automatically started up

after powering on.
(11) Infrared control: After turning on this function, the terminal can be controlled by infrared of remote control.
(12) Infrared transmission: After turning on this function, the terminal can realize the infrared transmission function together with the camera of the specified model. (Note: Since there is a logical conflict between infrared control and infrared transmission function, only one of the two can be enabled.)
(13) Watch live mode: Smooth, Moderate and Real-time modes can be selected. This option is used to control the buffer time of the terminal when watching live broadcasts, and when it is set to Smooth, the buffer time is the longest and the screen is the smoothest; when set to Real-time, the buffer time is the shortest and the screen has the best real-time performance.
(14) Switch to Android system: Turn on to switch to Android system operation, and it will restart automatically.

10.5.System Diagnostics

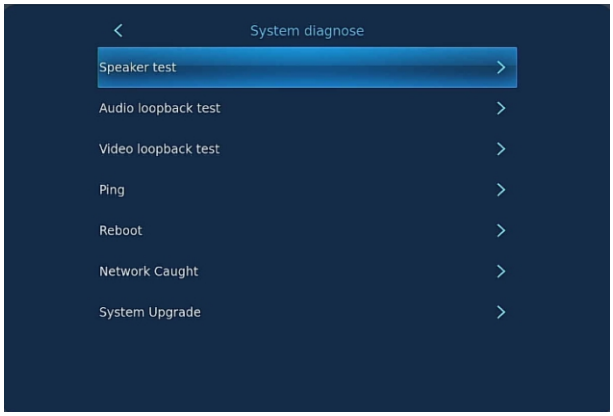


Figure 10-5

(1) Audio sound test: Used to detect whether the audio output link of the local terminal is normal.
(2) Audio loopback test: Used to detect whether the audio input to output link of the local terminal is normal.
(3) Video loopback test: Used to detect whether the video input to output link of the local terminal is normal.
(4) Ping: Used to detect whether the network from the terminal to the target device is normal.
(5) Reboot the machine: Restart the terminal.
(6) Network packet capture: Used to realize the function of network packet capture, which requires access to a U disk on the USB interface of the terminal for use, and the captured data packets are saved on the U disk.
(7) System upgrade: Used to realize the terminal software upgrade function. This function requires access to a U disk on the USB interface of the terminal for use. When upgrading, place the upgrade package provided by the manufacturer in the root directory of the U disk, and select the upgrade file to upgrade it automatically; the device will restart automatically during the upgrade process, and it will power on automatically after the upgrade is completed. (Note: Please do not power down the terminal during the upgrade process, otherwise it may cause damage to the terminal system, resulting in the device not being able to power on normally.)

11.System Information (Linux)

Figure 11

Check the local terminal name, software version, IP address and account registration status and other information.

12.Standard conference mode (Linux)

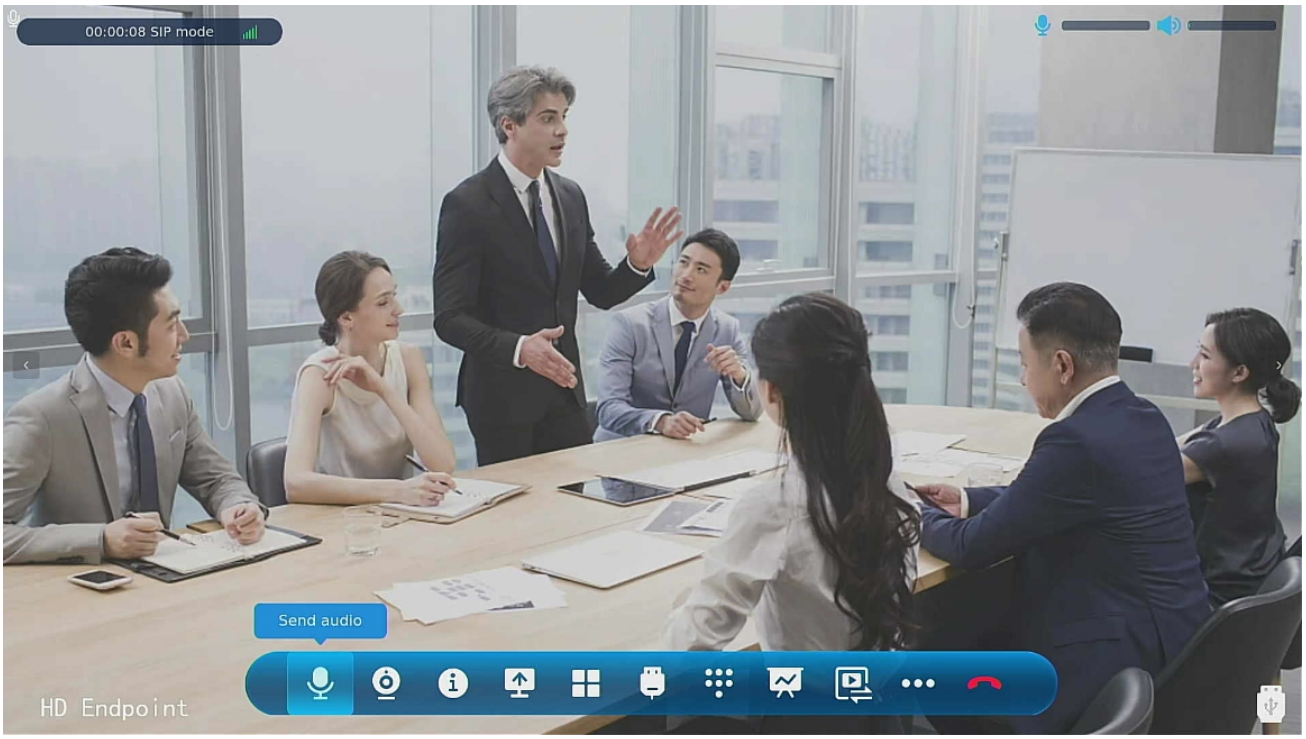


Figure 12

Join method: Use H.323 or SIP dialing mode to make a call. See 5 Dialing call in this manual for details.

Send audio/video: Select whether to send audio/video to the remote end.

Media information: View network transmission information such as audio/video protocol, bit rate, packet loss rate during conference. See 12.1 for details.

Auxiliary stream sharing: Initiate auxiliary stream sharing to the remote end. The local and remote end can annotate the auxiliary stream, only for the conference of this system. See 12.2 for details.

Screen layout: Switch the layout template of the video display screen of the local machine. See 12.3 for details.

Signal source switching: Can switch the main video source captured by the terminal. See 12.4 for details.

Keyboard: Used to input conference number or conference password, , ending with a #. See 12.5 for details.

Data conference: Realize the functions of whiteboard, file sharing, and so on, and it needs to be used with the latest version of the server program. See 12.6 for details.

Watch content: Can switch the multi-screen in the conference or the terminal's single-screen. The mode only supports the conference that joins the server of this system. See 12.7 for details.

Conference recording: When recording meeting videos at the terminal, an external U disk or portable hard drive is required to save the video, and the recording file is saved in the U disk. See

12.8 for details.

PTZ control: Switch the PTZ control of local or remote camera, use the terminal remote control to control the local or remote camera. See 12.9 for details.

Simultaneous interpretation: Can translate and output the remote audio, which requires enabling the AI setting. See 12.10 for details.

Real-time subtitle: Can transcribe real-time subtitle of the remote audio, which requires enabling the AI setting. See 12.11 for details.

12.1.Media information

Figure 12-1

12.2.Auxiliary stream whiteboard

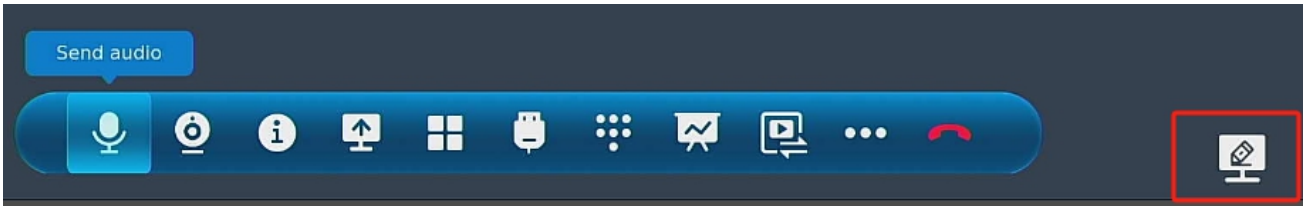


Figure 12-2(1)

After sending an auxiliary stream, click Auxiliary stream whiteboard to enter the whiteboard operation interface.

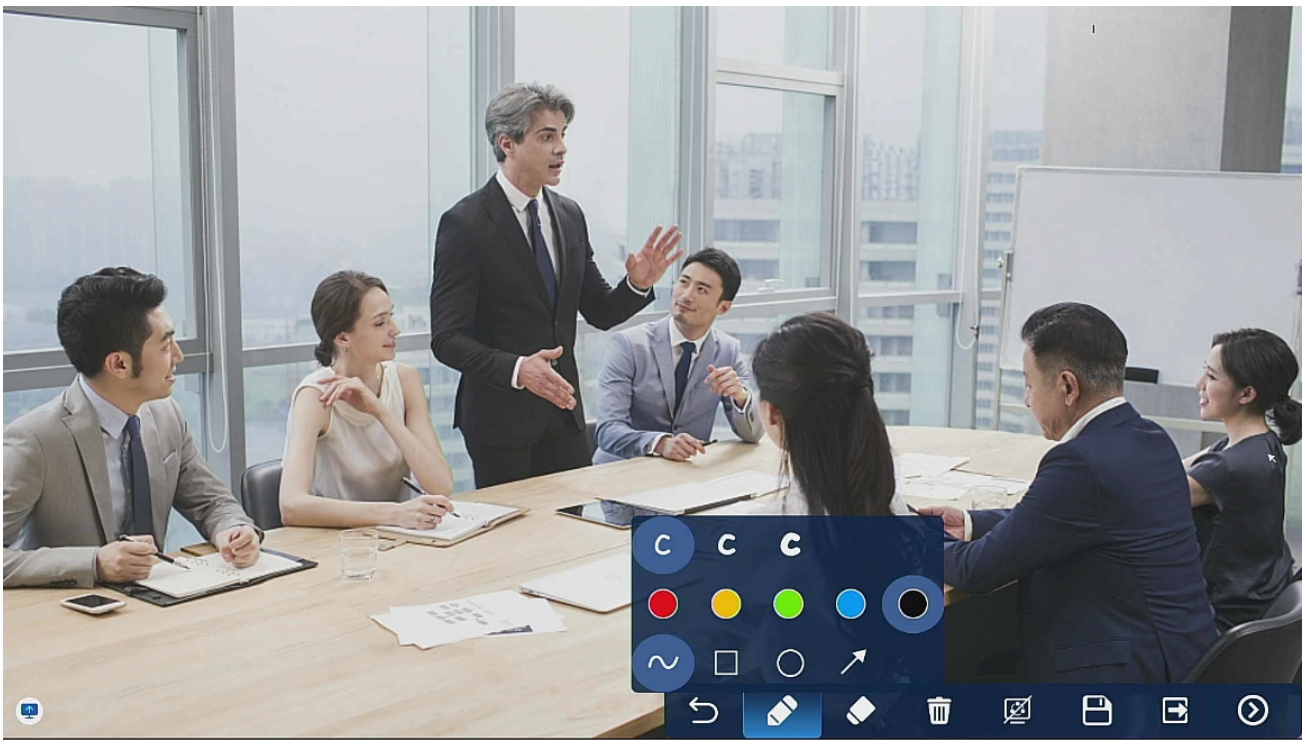


Figure 12-2(2)

(1) Undo: Used to undo the operation of the previous step (Undo is not possible after clearing the stroke).

(2) Brush type selection: Used to select the type of brush, stroke color, stroke thickness.

(3) Eraser: Used to erase the specified stroke.

(4) Clear whiteboard: Used to clear all the strokes on the whiteboard. The clearing operation cannot be withdrawn, please note when using it.

(5) Auxiliary stream collaboration: When enabled, other terminals can perform brush operations on the current Auxiliary stream whiteboard interface simultaneously.

(6) Save whiteboard: Used to save the current whiteboard. The whiteboard is saved in the form of image, which requires access to a U disk in the USB port of the terminal to be saved.

(7) Exit whiteboard: Used to exit the whiteboard page and return to the conference interface.

(8) Fold toolbar: Used to fold the toolbar to the lower-right corner. After folding, click again to expand the toolbar.

12.3.Screen Layout

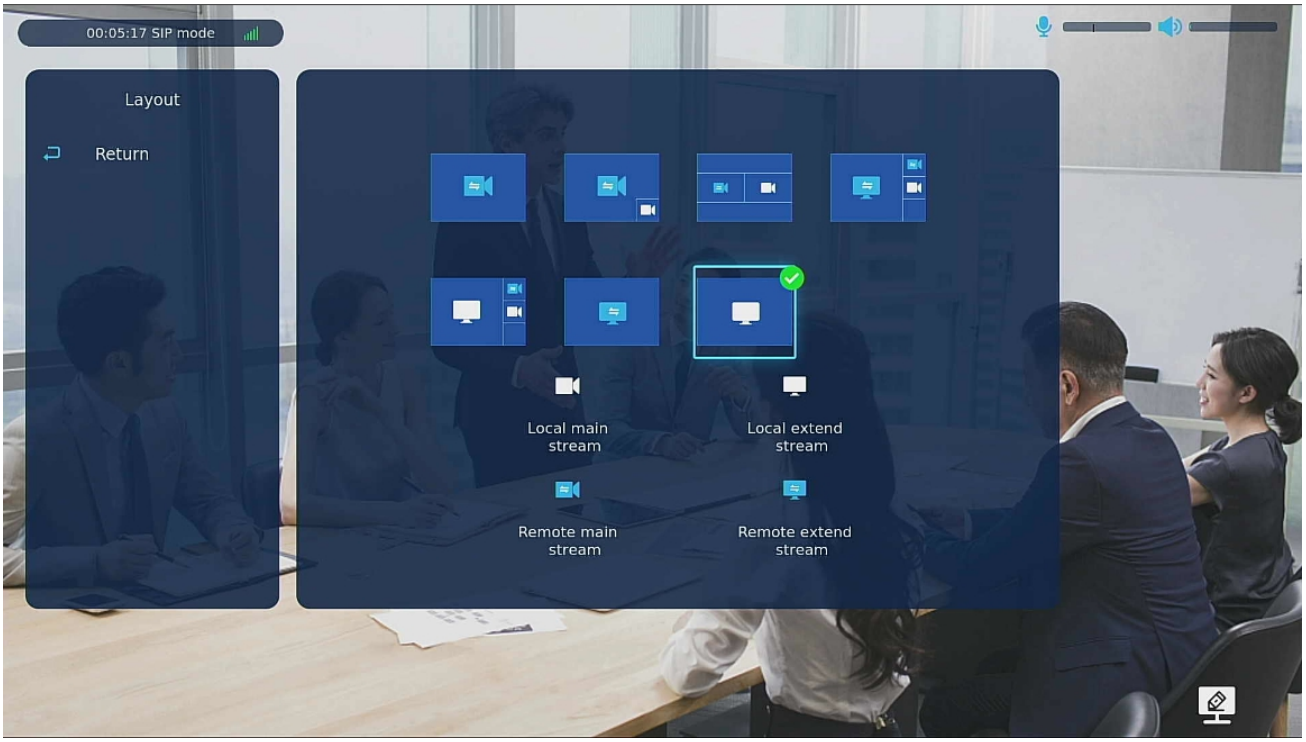


Figure 12-3

12.4.Signal Source Switching

Figure 12-4

(1) Video setting: The main video signal source for video capture can be switched and set. Camera1, Camera2 and Mixer can be selected.

(2) Audio setting: The audio input and output of the terminal can be switched.

12.5.Keyboard

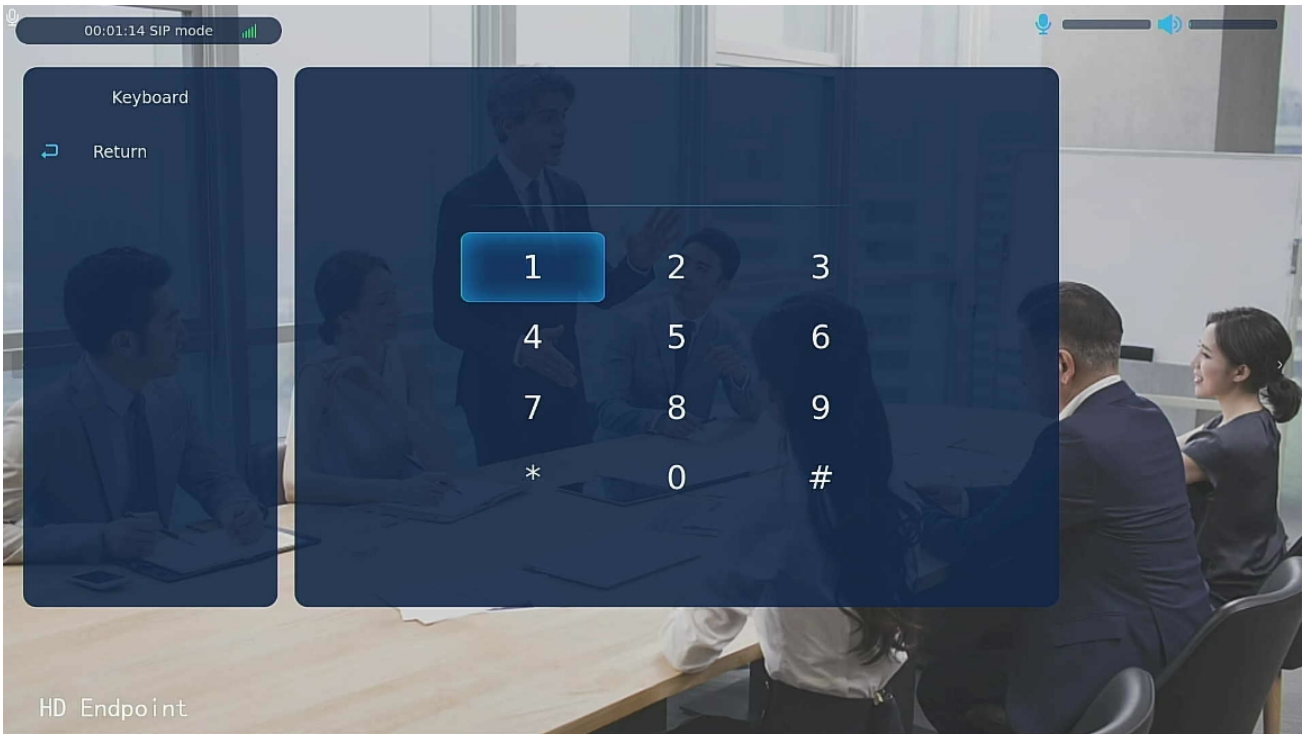


Figure 12-4

When setting a password for a conference, you can enter it here, or when docking with a third party, you can enter the conference number, password, etc.

12.6.Data conference

Figure 12-6

Data conference includes electronic whiteboard, file sharing, and electronic voting functions, and only supports the terminal to log in to the VCS account to join the conference of the system server.

12.6.1.Electronic Whiteboard

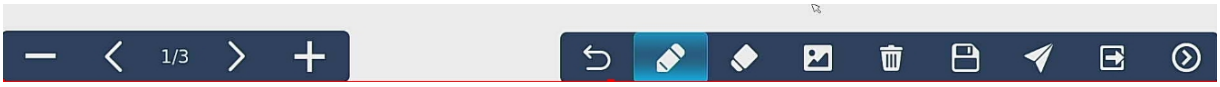


Figure 12-6-1

(Note: The electronic whiteboard can only be operated with a mouse or remote control air mouse)

(1) : Delete the currently displayed whiteboard page.

(2) : Turn pages forward or backward, the number before “/” represents the current page number, the number after “/” represents the total number of pages.

(3) : Increase the number of whiteboard electronic whiteboard pages.

(4) Undo: Used to undo the operation of the previous step (Undo is not possible after clearing the stroke).

(5) Brush type selection: Used to select the type of brush, stroke color, stroke thickness.

(6) Eraser: Used to erase the specified stroke.

(7) Switch whiteboard background: Used to switch the background of the whiteboard. Support

whiteboard and blackboard switching, and support the use of common format images as the whiteboard background (the image needs to be placed in the root directory of the U disk and access to the terminal before it can be used).

(8) Clear whiteboard: Used to clear all the strokes on the whiteboard or clear the stroke and background simultaneously. The clearing operation cannot be withdrawn, please note when using it.

(9) Save whiteboard: Used to save the current whiteboard. The whiteboard is saved in the form of image, which requires access to a U disk in the USB port of the terminal to be saved.

(10) Same-screen push: Used to push the whiteboard content to other participating terminals.

(11) Exit whiteboard: Used to exit the whiteboard page and return to the conference interface.

(12) Fold toolbar: Used to fold the toolbar to the lower-right corner. After folding, click again to expand the toolbar.

12.6.2.File sharing

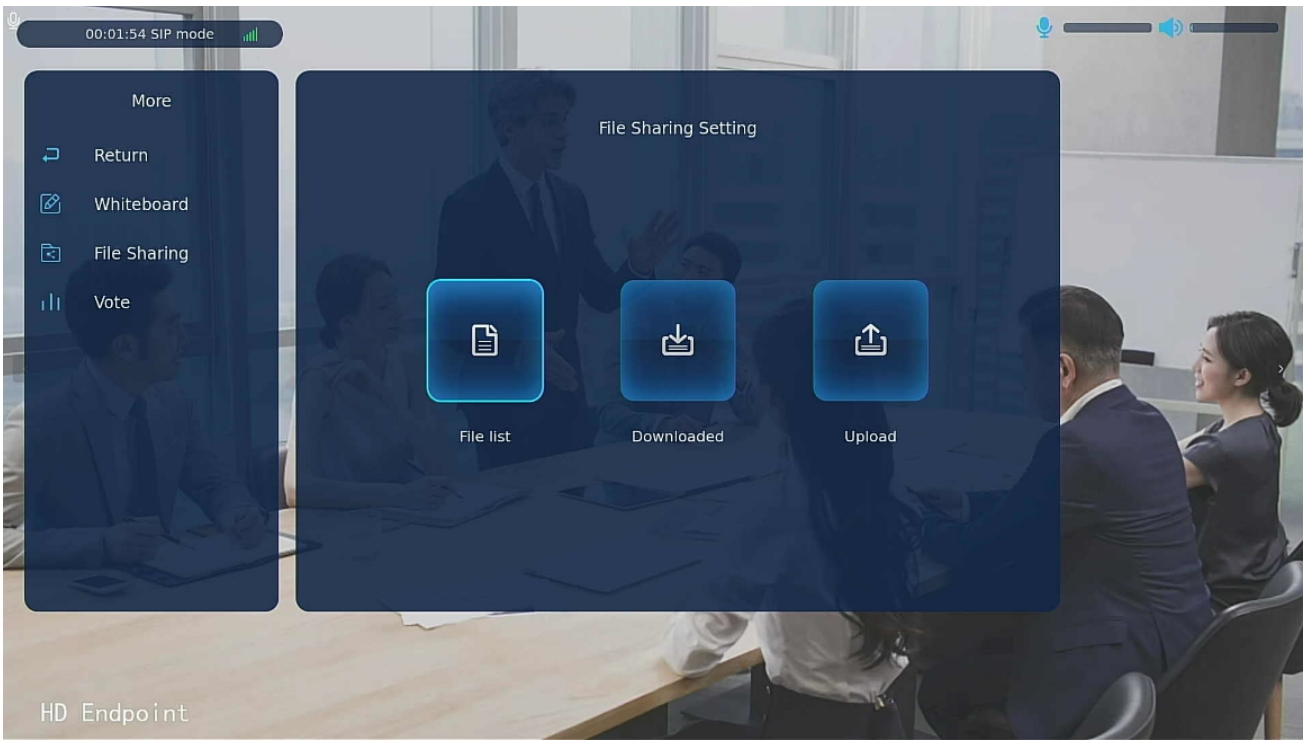


Figure 12-6-2

(Note: The terminal needs to connect to U disk or mobile hard disk device when using file sharing function).

(1)File list: The terminal automatically gets the shared files in the conference, and users are free to choose the files to download.

(2)Downloaded: Displays the local downloaded file record.

(3)Upload files: The terminal automatically reads the list of files in the U disk or mobile hard disk, and users freely choose the uploaded files.

(Note: The upload file size is limited to 100 M, and shared files are uniformly saved on the server).

12.6.3.Electronic voting

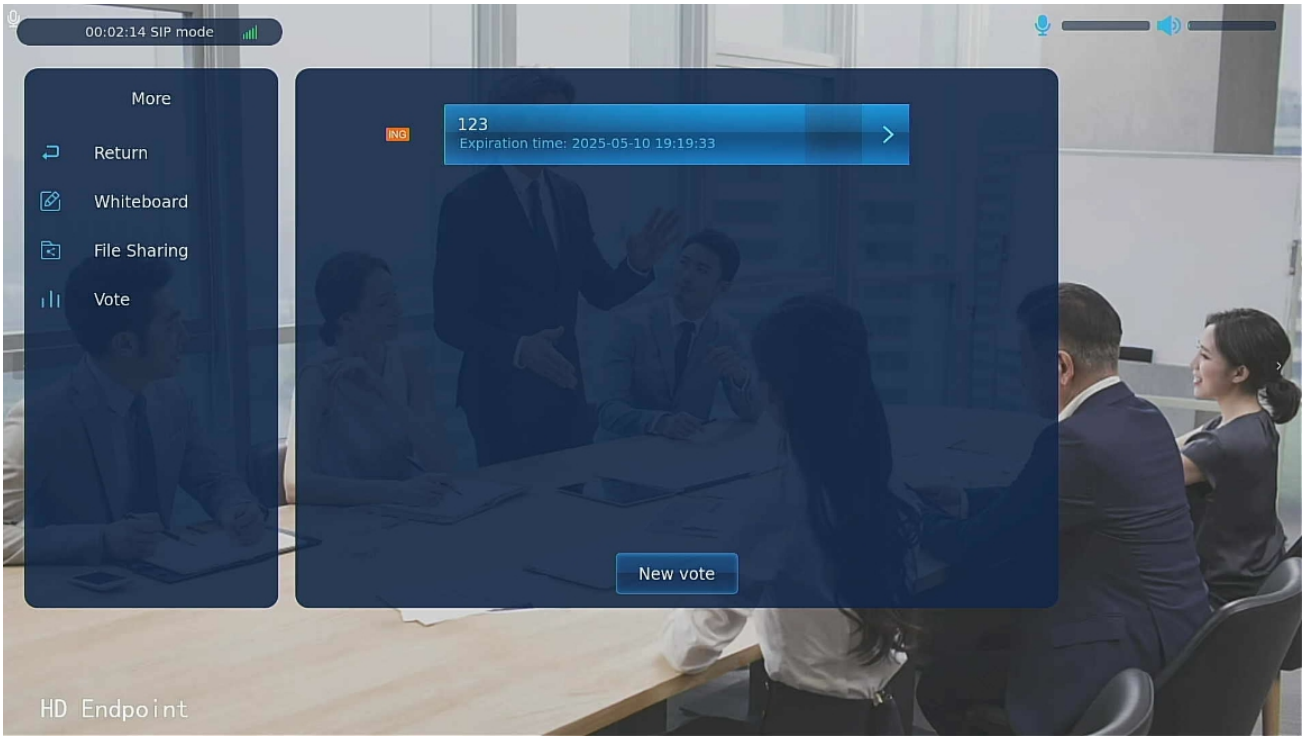


Figure 12-6-3

(1)Voting list: Displays the voting list in the conference.

(2)Initiate new voting: Fill in voting content, options, validity period, mode, privacy, preview right, initiate new voting.

(3)You can query the voting content and results in the electronic voting list.

12.7.Watch Content

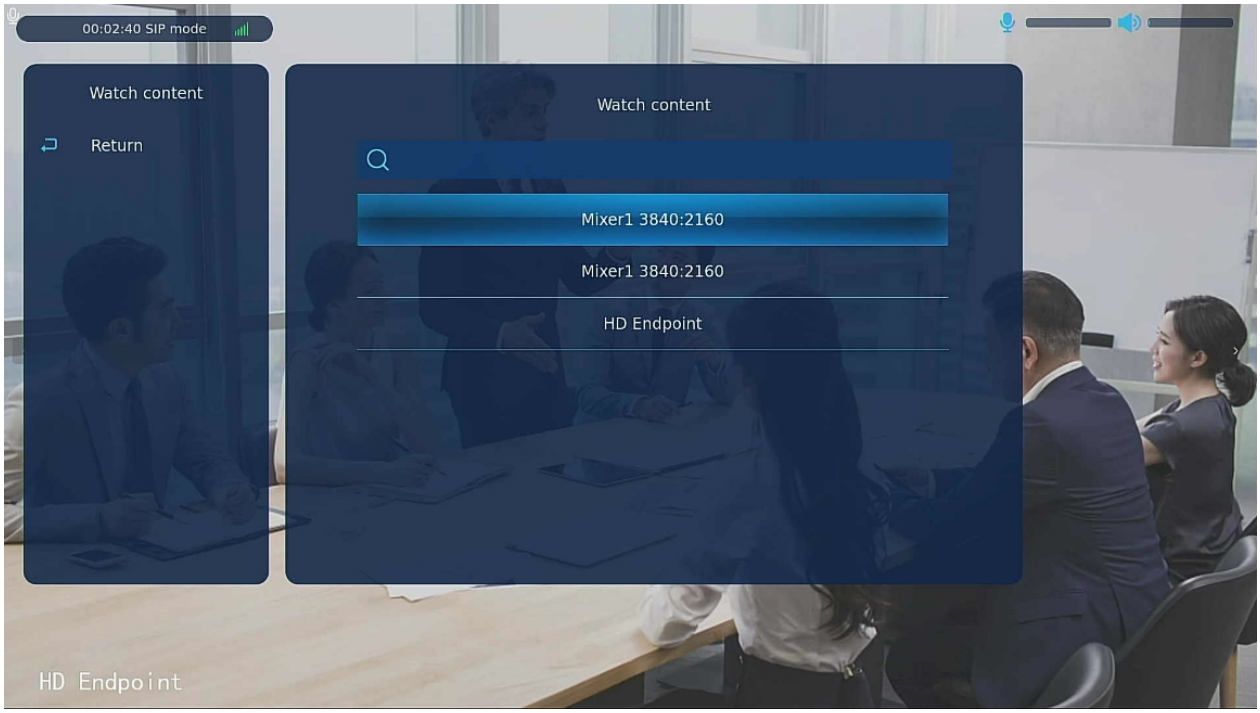


Figure 12-7

Multi-screen content, encoder, and terminal single screen in the conference can be selected, and only the conference that joins the server of this system is supported.

12.8.Conference Recording

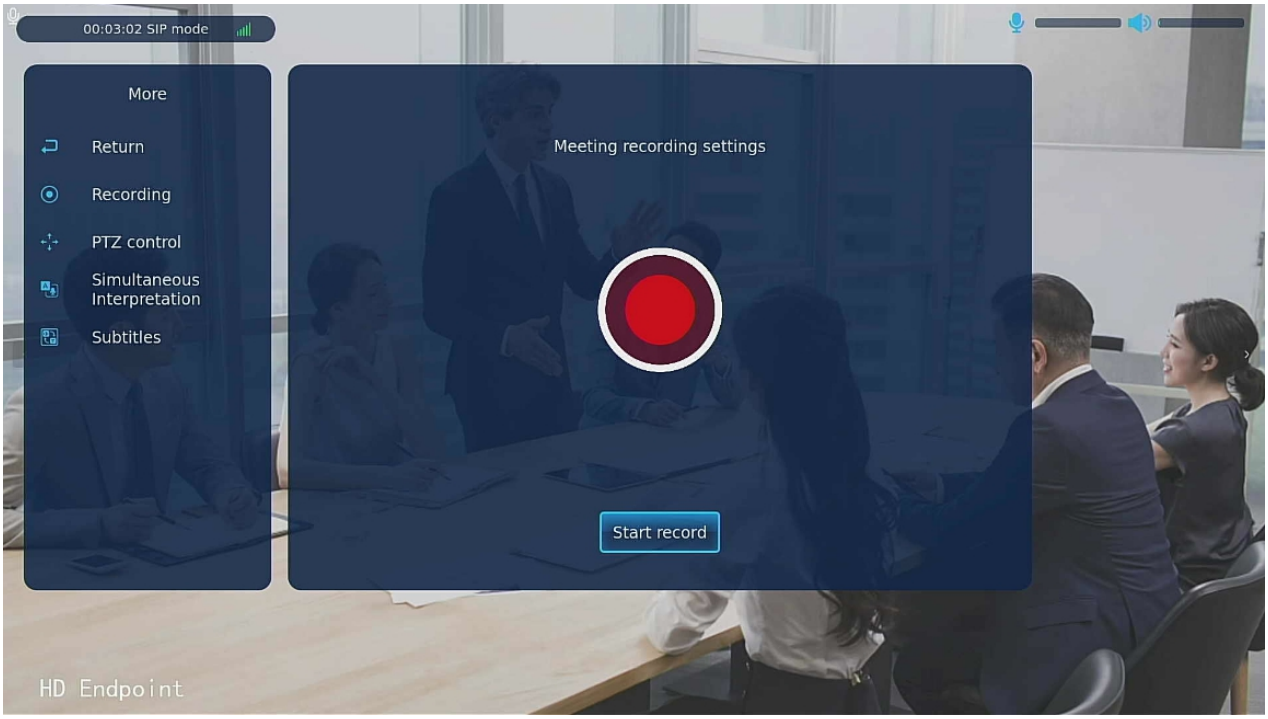


Figure 12-8 (1)

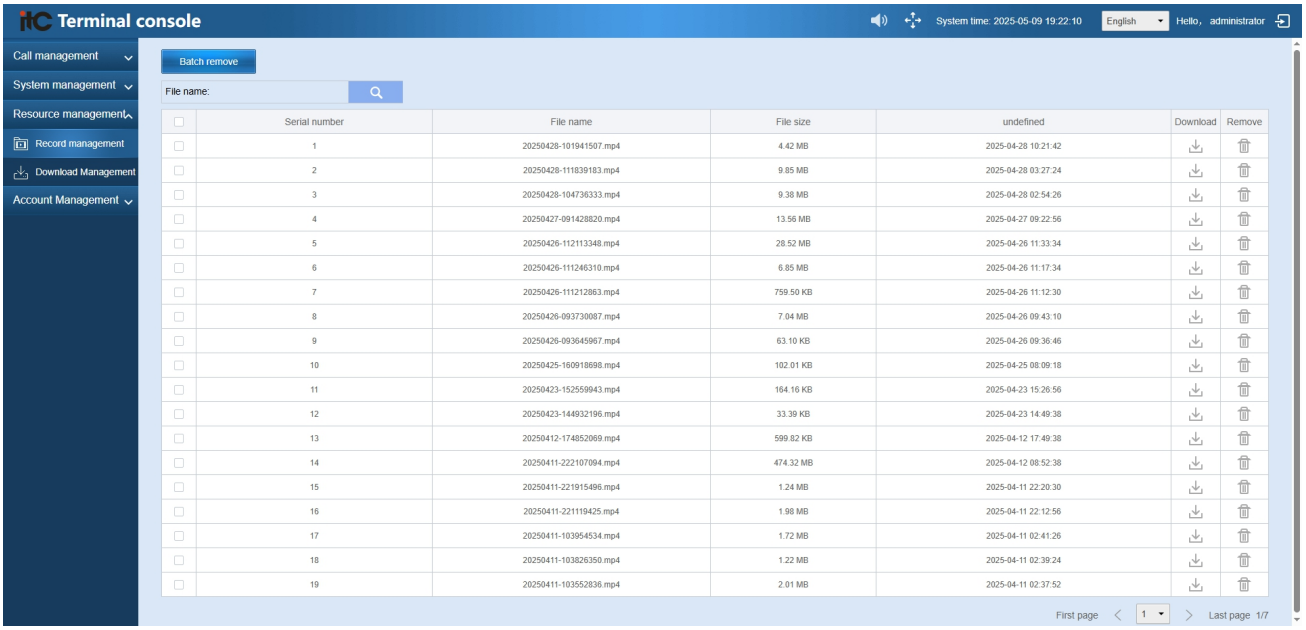


Figure 12-8 (2)

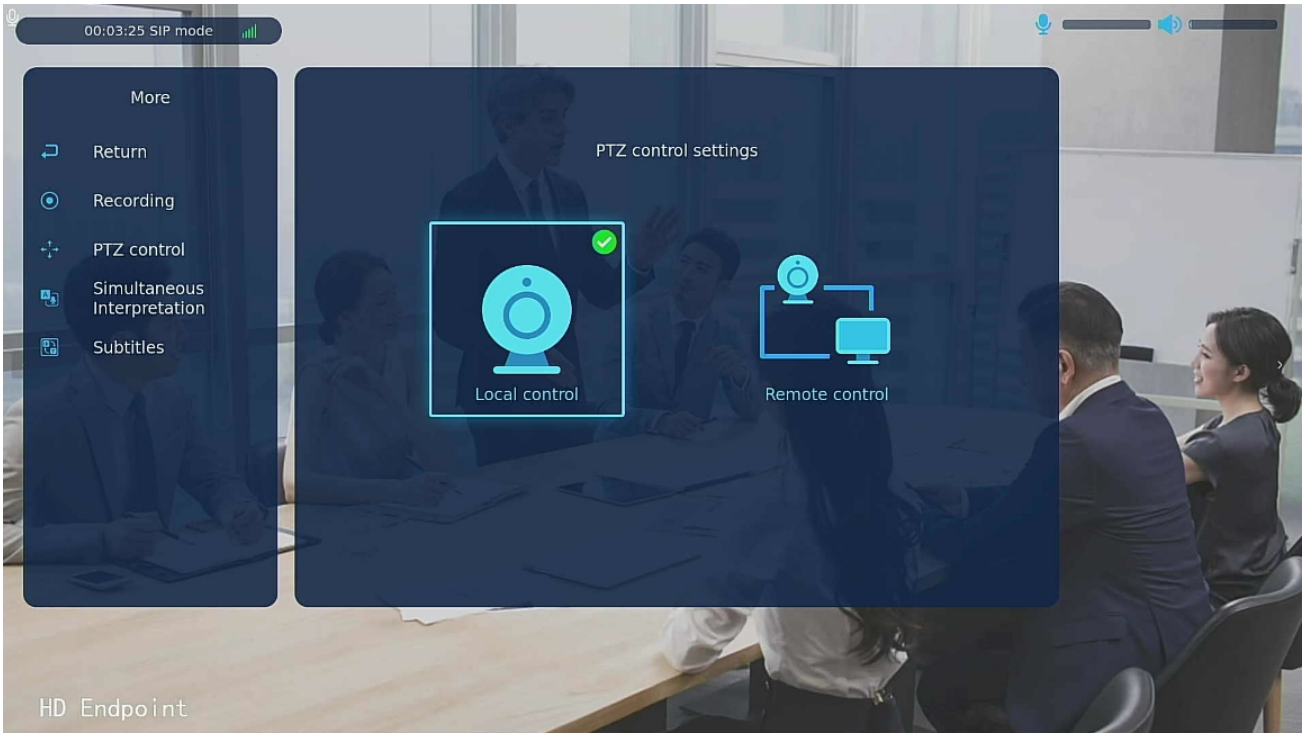
Insert the U disk in FAT32 file format into the USB interface on the rear panel of the terminal, click the “Conference Recording” button in the menu of common operations to start recording the conference, and the recording content is the current main screen display.

After stopping the recording and exiting the meeting, users can obtain the recorded video files in the following ways:

(1) Users can access the IP address of the terminal through the computer browser (the login account and password are admin by default), and download the recorded video to the local computer in the Resource Management-Recording Management page, as shown in Figure 12-3-3. (Note: Please do not pull out the U disk from the terminal when downloading the recorded video through the computer browser).

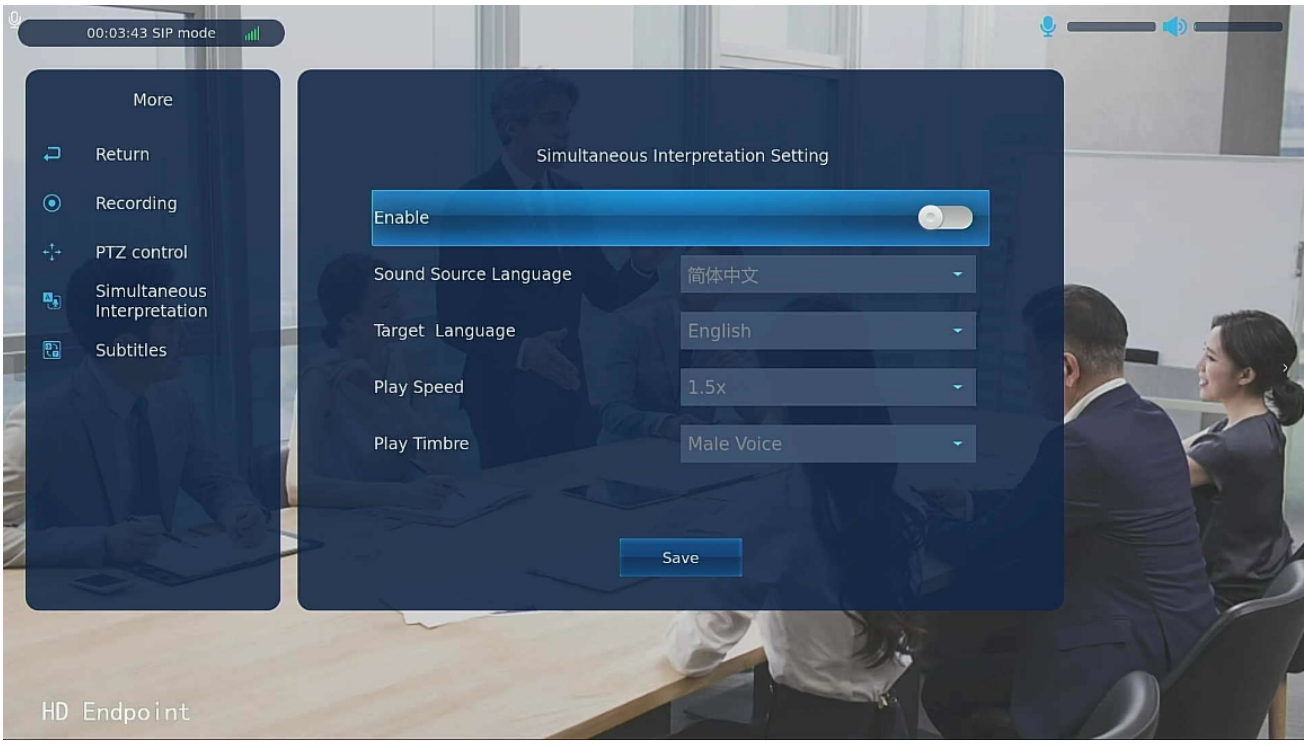
(2) Users can directly unplug the U disk from the terminal and then import the recorded video to the local computer via the U disk, and the recorded video will be saved in MP4 format in U disk/the directory of records.

12.9.PTZ Control



It can operate and control the camera captured at this end or the remote camera, and the split terminal needs to be connected to the serial line in advance.

12.10.Simultaneous interpretation



It can perform translation output of the remote audio.

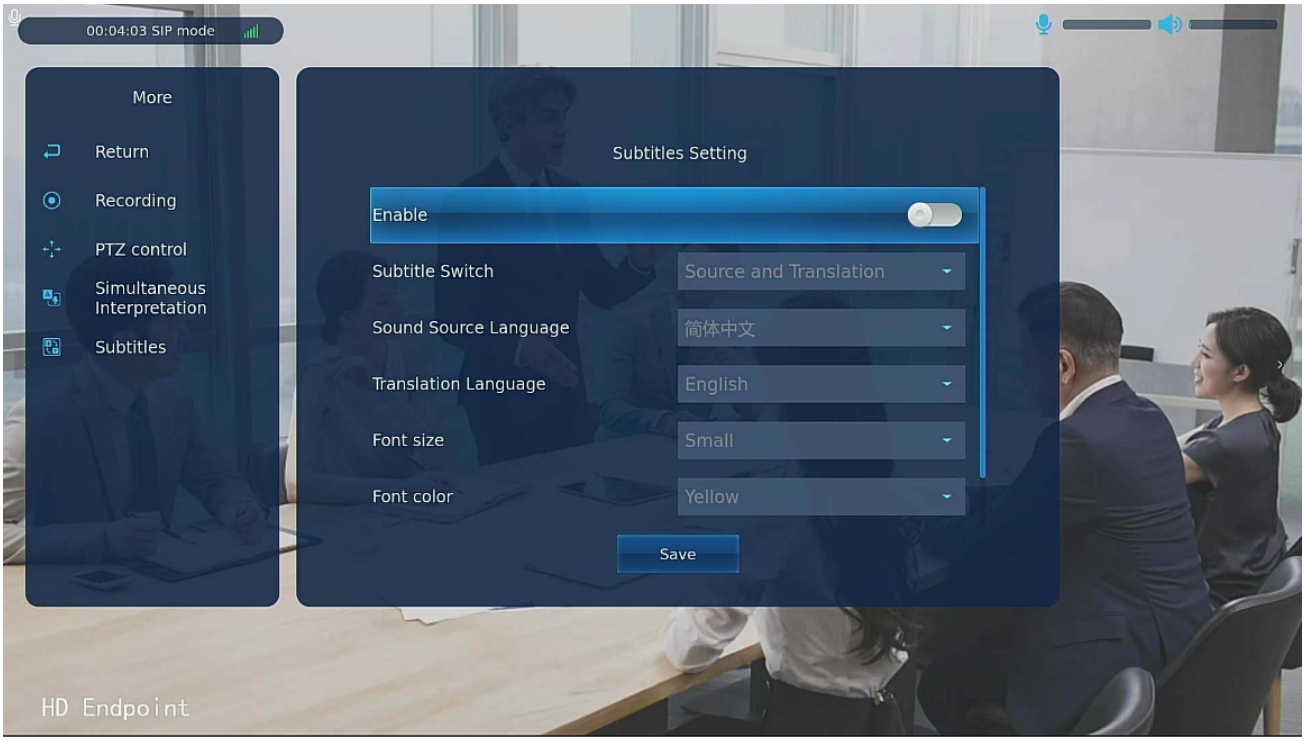
(1) Sound source voice: Selection of the original language of the remote audio.

(2) Simultaneous interpretation language: Selection of the language of the translated audio.

(3) Playback multiplier: Selection of the multiplier of the translated audio. The larger the multiplier, the faster the speed of speech.

(4) Playback tone: Selection of the voice of the translated audio, with male or female voice optional.

12.11.Real-time Subtitle



Real-time subtitle transcription of remote audio is available, which requires enabling AI setting

(1) Sound source voice: Selection of the original language of the remote audio.

(2) Translation language: Display the selection of translated subtitle language.

(3) Font size: Font size setting for transcribed subtitles.

(4) Font color: Font color setting for transcribed subtitles.

(5) Background setting: Setting for the background color of the transcribed subtitles.

13.Terminal built-in MCU conference (Linux)

The terminal can act as a small MCU, which can support 16 venues (including MCU venues) for video conference. During the conference, the MCU terminal can invite or hang up the designated venue, can switch the screen layout template, can control terminal audio and video and so on. See 9 Convene conference in this manual for details on the method of convening a built-in MCU conference.

13.1.Built-in MCU Conference Operations

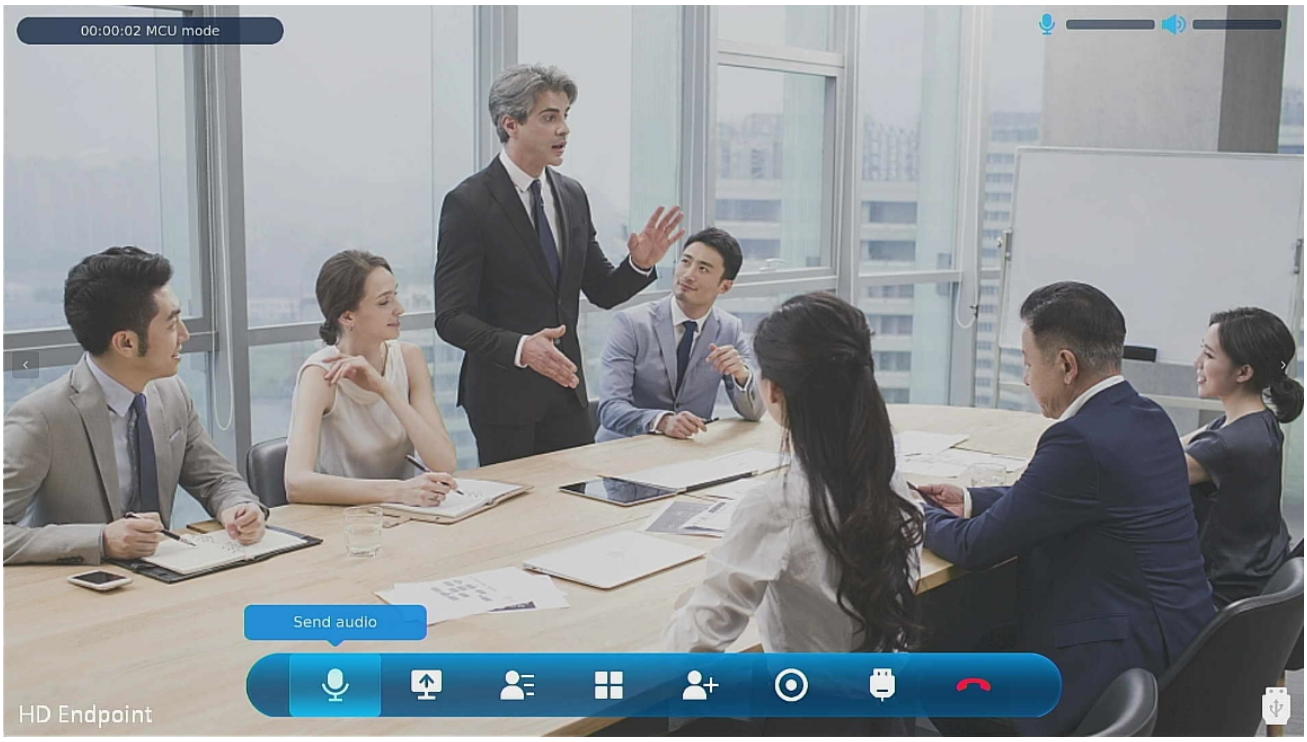


Figure 13-1

Send audio: Select whether to send audio to the remote end.

Auxiliary stream sharing: Share local auxiliary stream.

Personnel list: Select to view the video screen of each venue, camera control, audio control, hangup and other operations.

Screen layout: Switch conference screen layout template. Other conference venues will watch this screen content by default after joining the conference.

Invitation: Invite contacts in the local address book to join the conference.

Conference recording: After the terminal is connected to a U disk or mobile hard disk, the conference audio and video are recorded, and the recording files are saved in the U disk.

Signal source switching: The main video source captured by the terminal can be switched, as well as the audio input and output of the terminal.

14.System Display Status (Android)

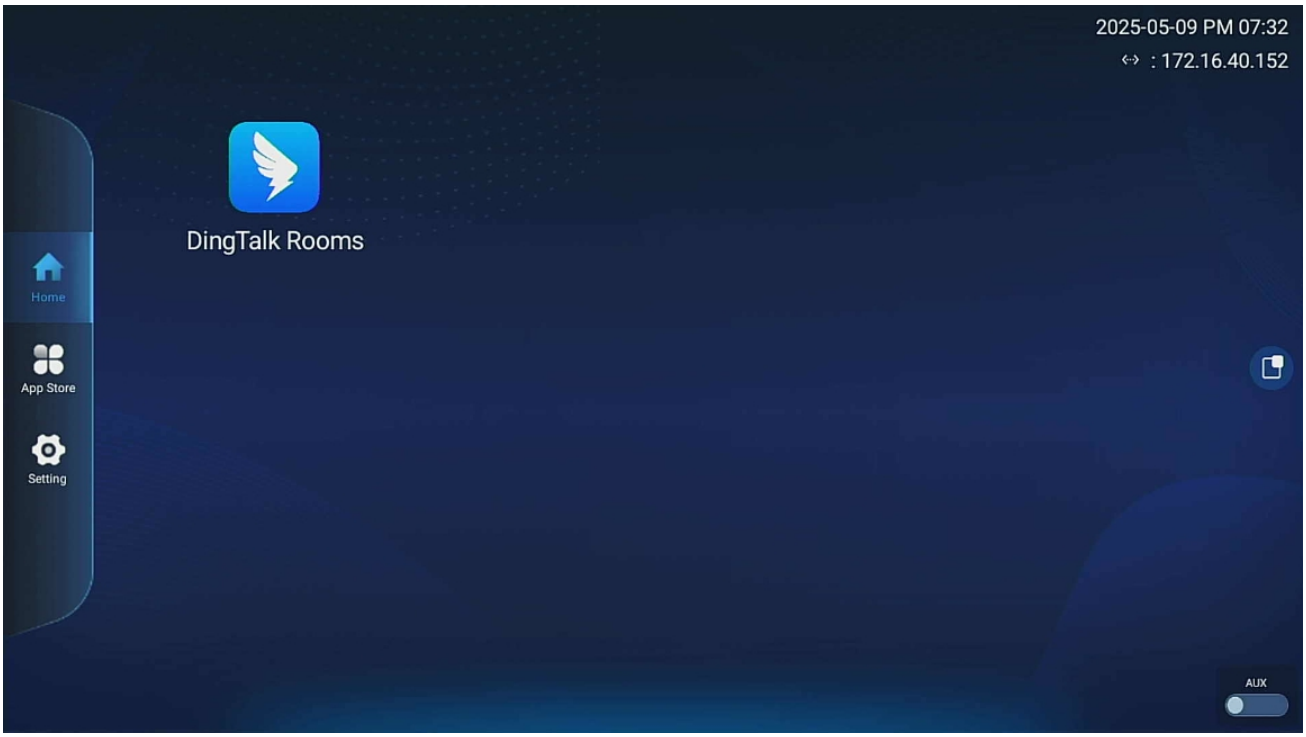


Figure 14

The device powers on and enters the display interface as shown in Figure 14, with the menu bar on the left, which can be operated using the mouse or tablet (you can slide up and down in the interface after clicking the mouse). The upper right corner displays the IP address of the device and the time in the current timezone, and the homepage displays the application software downloaded from the store.

15.Homepage (Android)

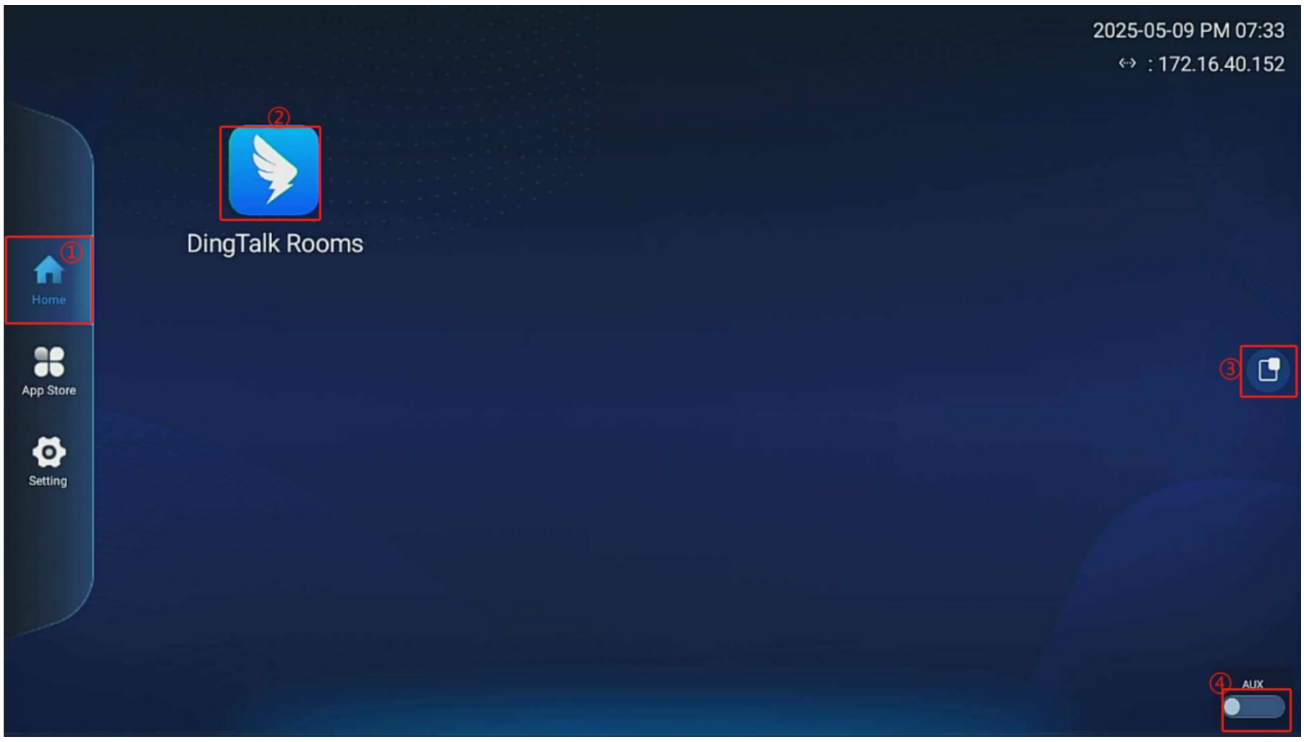


Figure 15

(1) Homepage status is displayed by default after the terminal is turned on.

(2) Application software downloaded from the store will be displayed on the homepage, which can be opened by clicking the software icon with the mouse or control tablet.

(3) Software process view, can be opened by clicking the icon with the mouse or control tablet. And you can choose to end the process, see 15.1 for details.

(4) Click the auxiliary stream icon to switch the main interface to display the screen of PC IN acquisition. Press “#” for quick switching when using the remote control.

15.1.Software Process Management

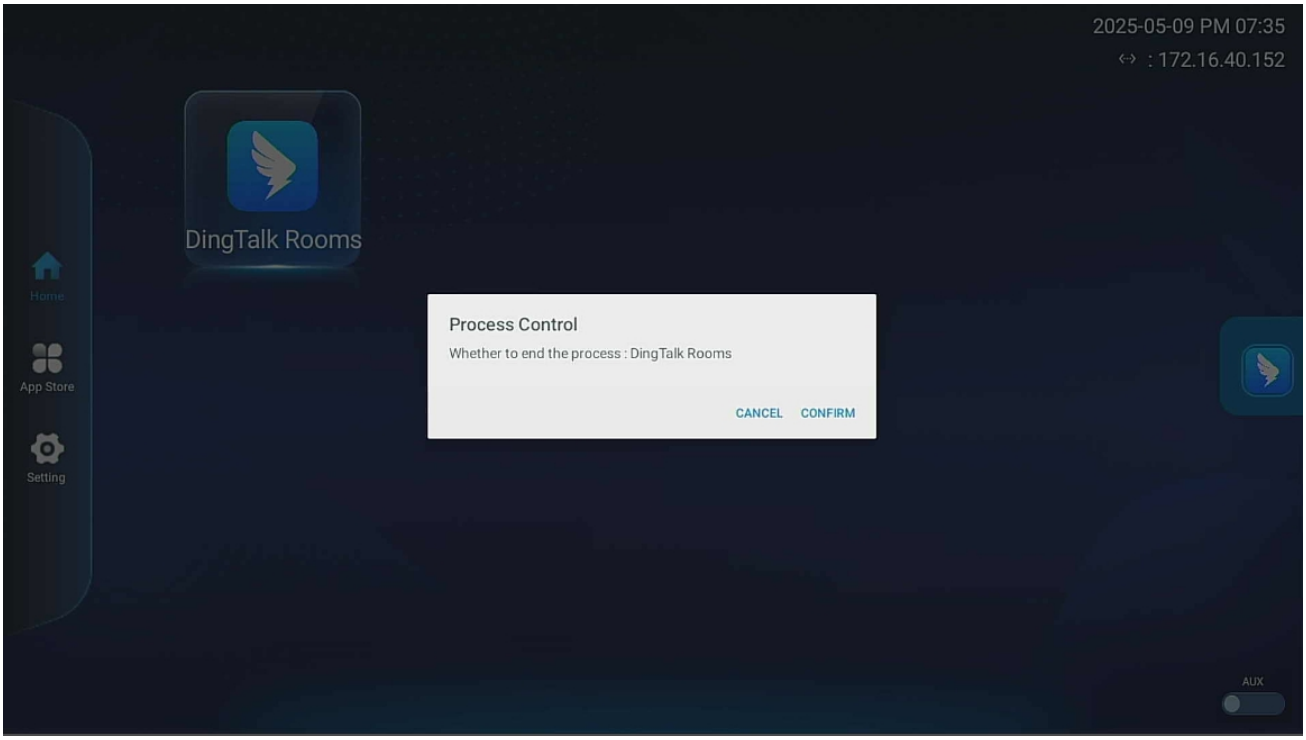


Figure 15-1

(1) Click the  icon to view the currently running process, and click the process icon again to manage the process.

16.Store (Android)

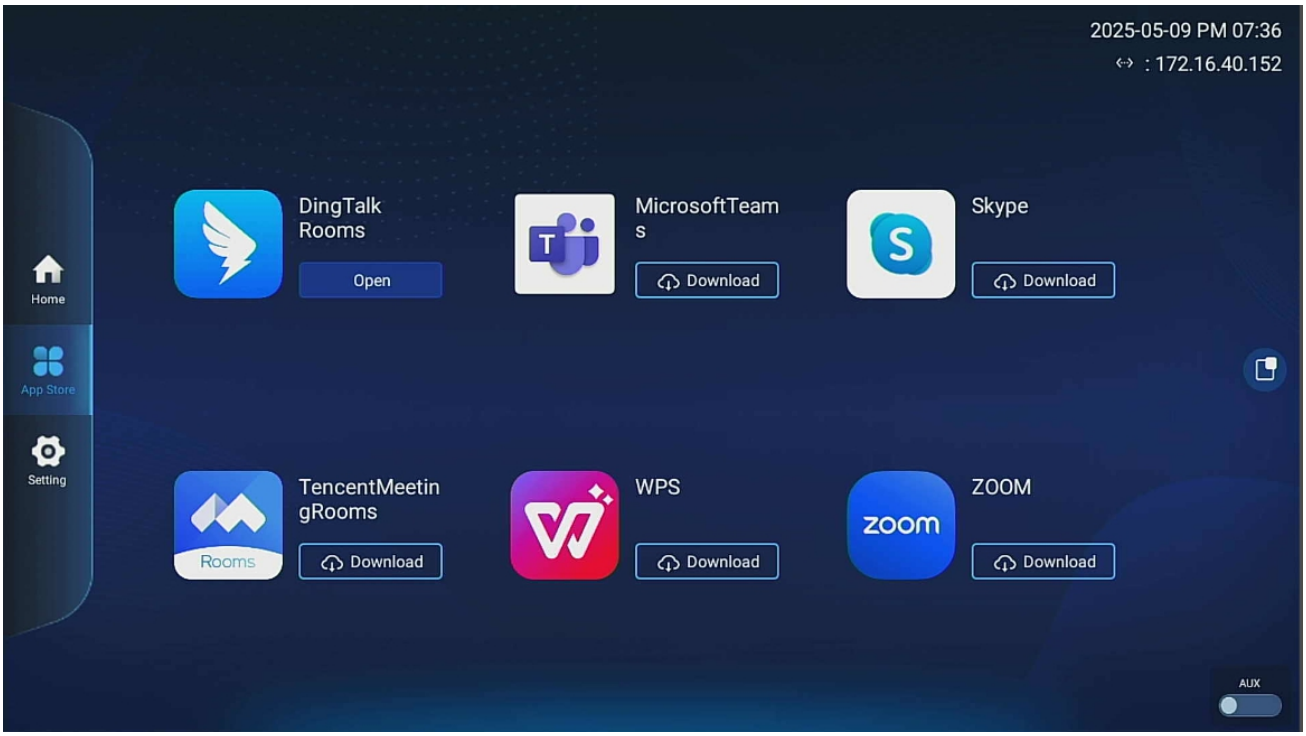


Figure 16

The store mainly provides the download of Tencent meeting Rooms, DingTalk, ZOOM, MicrosoftTeams, Skype, WPS and other applications. The downloaded software can be opened directly, and the software that has not been downloaded can be downloaded by clicking , which will be displayed on the homepage after the download.

17.Setting (Android)

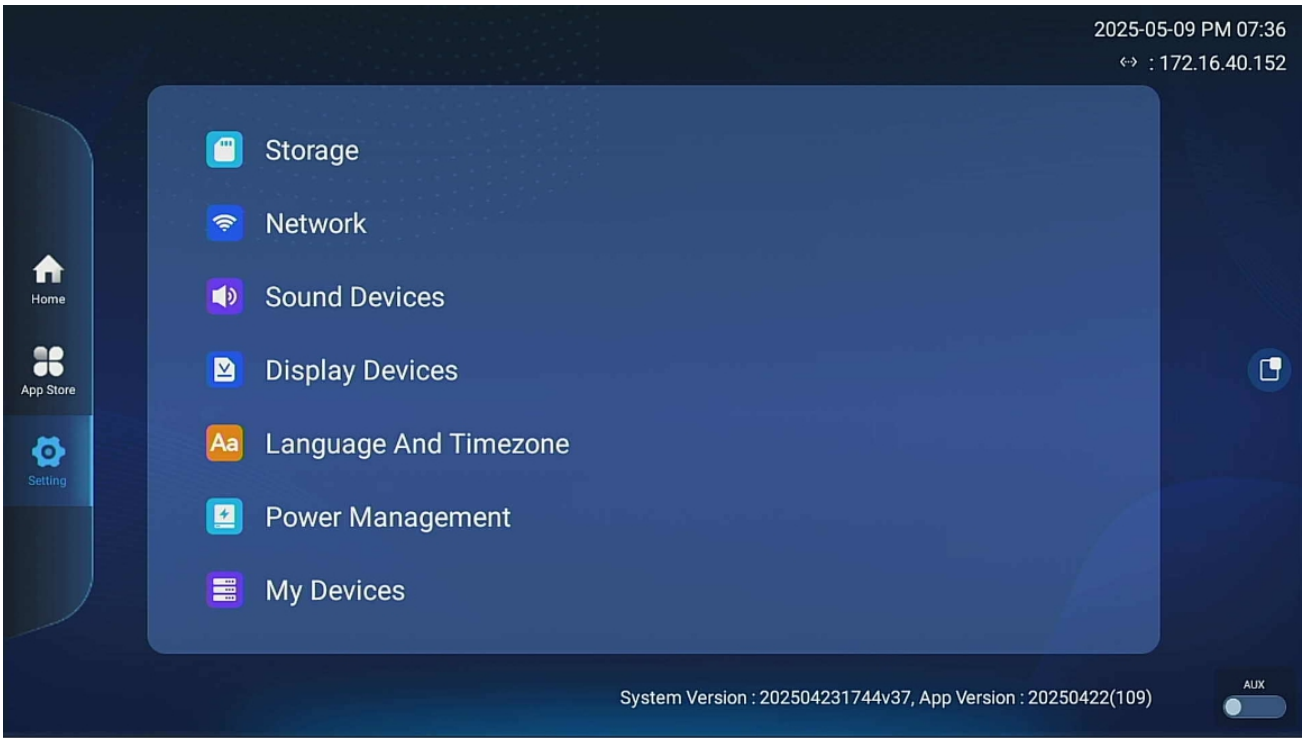


Figure 17

(1) Storage: Mainly for viewing local storage information or external storage content. See 17.1 for details.

(2) Network: Mainly for setting up the Ethernet and wifi-related setting. See 17.2 for details.

(3) Sound device: Mainly for setting up audio input/output selection, volume adjustment and local audio diagnostic function. See 17.3 for details.

(4) Display device: Mainly for setting up video output and display the external camera screen. See 17.4 for details.

(5) Language and timezone: Mainly for setting up system language and timezone time. See 17.5 for details.

(6) Power management: Mainly for setting up system reboot and shutdown. See 17.6 for details.

(7) My devices: Mainly for viewing device information and device-related controls. See 17.7 for details.

17.1.Storage

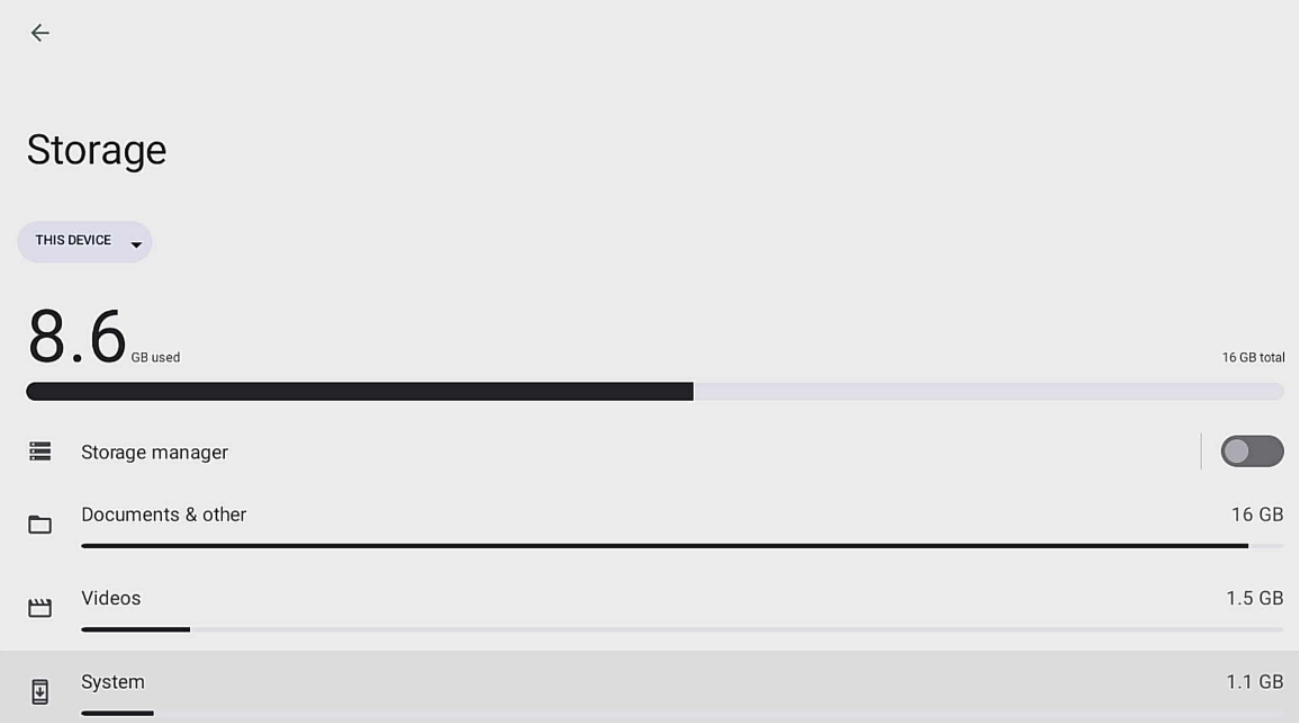


Figure 17-1

Local storage device or external storage device can be selected to view the local storage contents.

17.2.Network

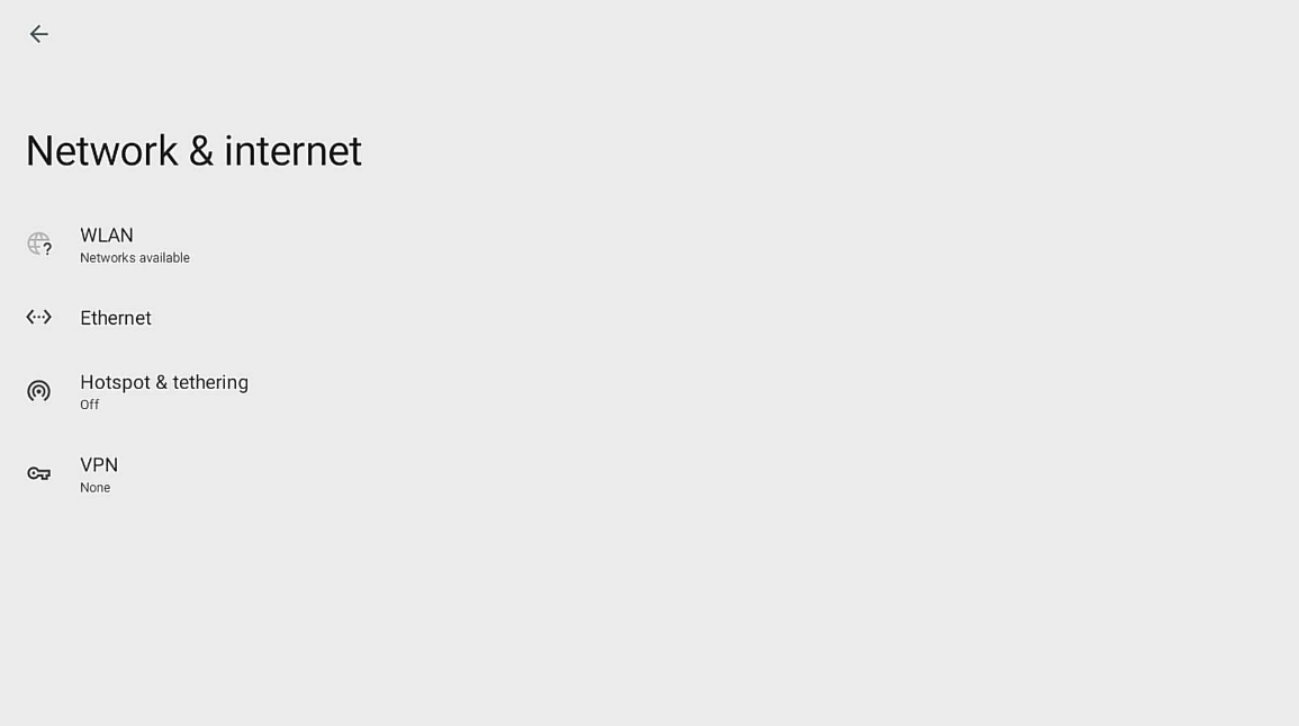


Figure 17-2

(1) Network setting. Click to enter and turn on WLAN, and relevant wifi information can be searched. Then just click wifi to connect (note that you need to unplug the network cable before connecting to the wifi). See 17.2.1 for details.
(2) Ethernet setting. Click to enter and select dhcp or static to set up wired network. See 17.2.2 for details.
(3) Hotspot and network sharing. It is mainly to share wifi hotspot to the control panel for connection in case of Ethernet connection. See 17.2.3 for details.
(4) VPN, supporting VPN network.

17.2.1.Network setting

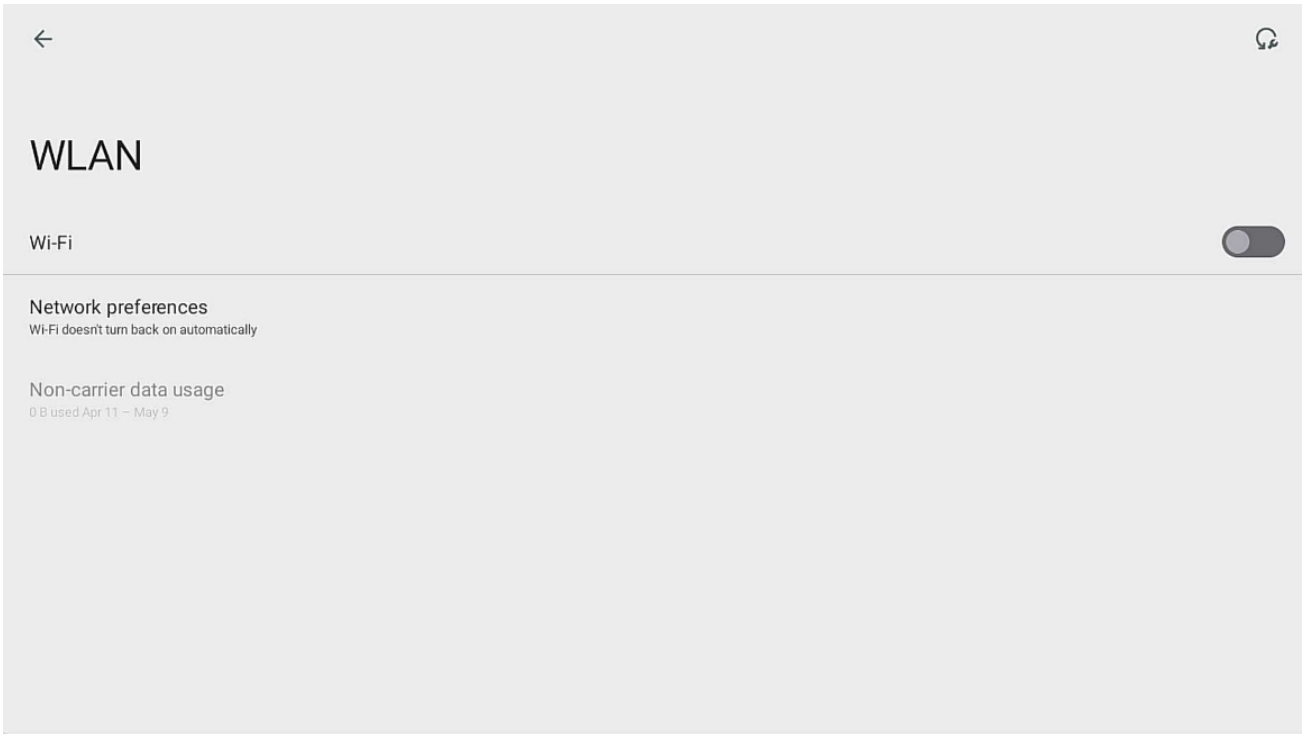


Figure 17-2-1

Turn on the WLAN, and the wifi information can be scanned. Select the wifi to be connected and enter the password (note that you should unplug the network cable before connecting to the wifi).

17.2.2.Ethernet setting

Figure 17-2-2

IPV4 and IPV6 can be set up. Select dhcp or static to set up the wired network.

17.2.3.Hotspot and network sharing

Figure 17-2-3

The hotspot can be shared over an Ethernet network, enabling other devices to connect to the terminal network.

17.3.Sound Device

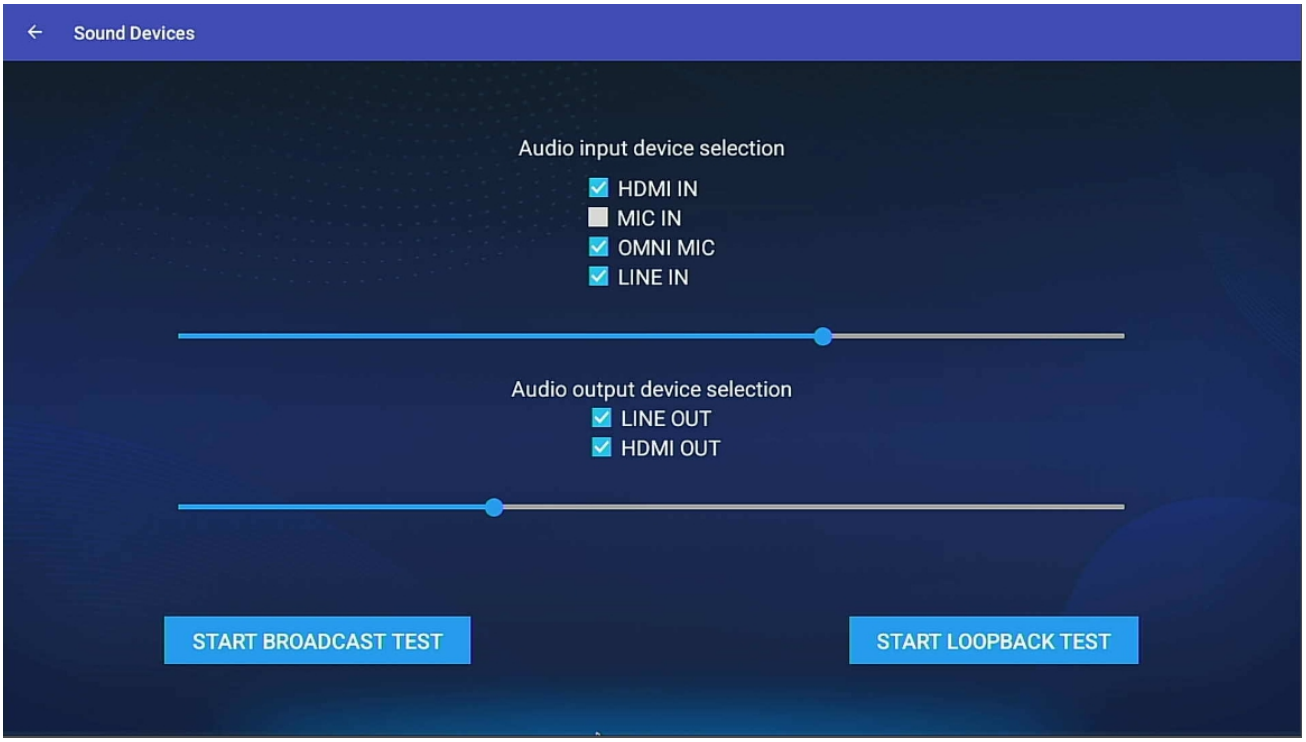


Figure 17-3

(1) Audio input device selection: You can check the terminal audio input type, and HDMI IN audio only supports PC IN capture; after checking MIC IN, the terminal MIC IN port will be phantom powered.

(2) Adjust the input gain. The larger the value, the higher the audio input amplification, and the gain takes no effect on HDMI IN.

(3) Audio output device selection: You can check the terminal audio output type.

(4) Output volume adjustment. The larger the value, the higher the audio output volume.

(5) Start sound test: There will be a section of audio output when you click on it, which is used to detect whether the local terminal audio output link is normal or not.

(6) Start loopback test: Click and speak into the microphone to detect whether the audio input link of the local terminal is normal.

17.4.Display Device

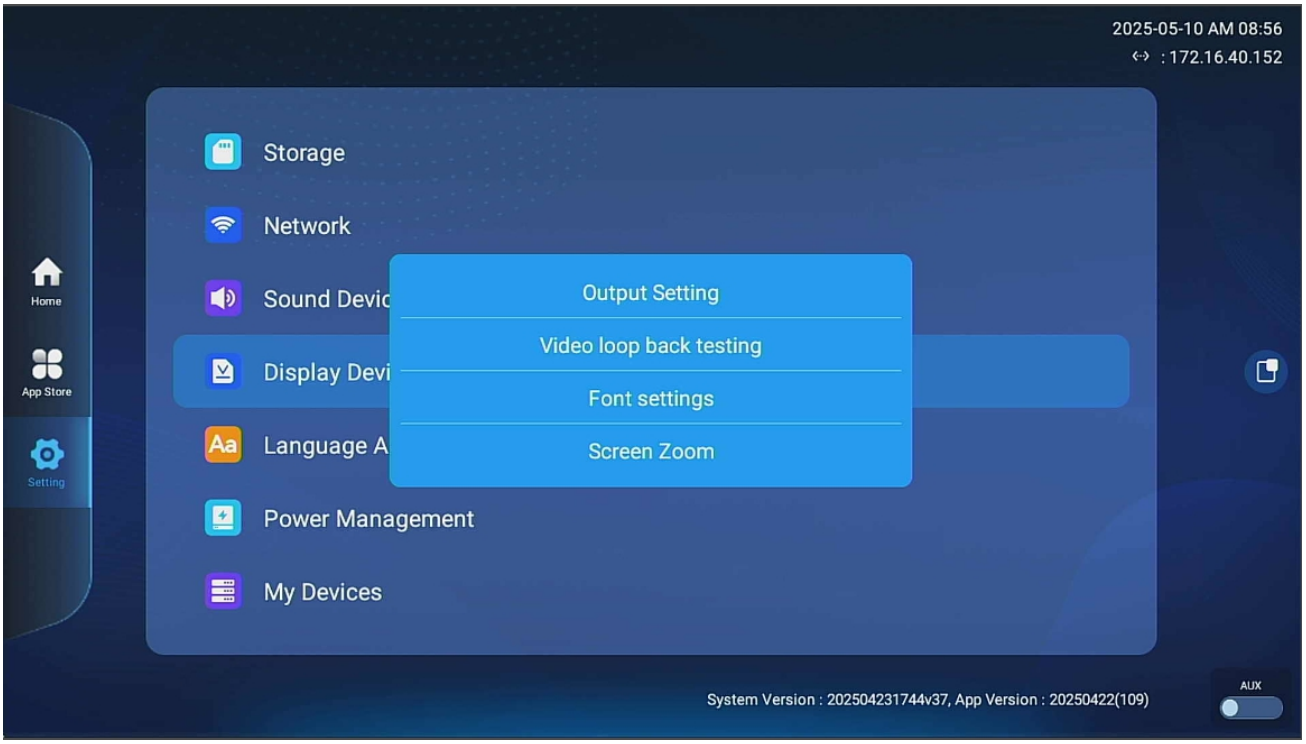


Figure 17-4

(1) Output setting: The terminal output resolution and scaling can be set, and the system will restart when the resolution is switched.

(2) Video loopback settings: Can display the screen captured by the terminal (CAMERA1, CAMERA2, PC IN).

(3) Font setting: Can set the interface font size, and you can press the right mouse button to return.

(4) Screen zoom: Can shrink or enlarge the content on the screen. Modifying this setting will restart the system.

17.5.Language and timezone

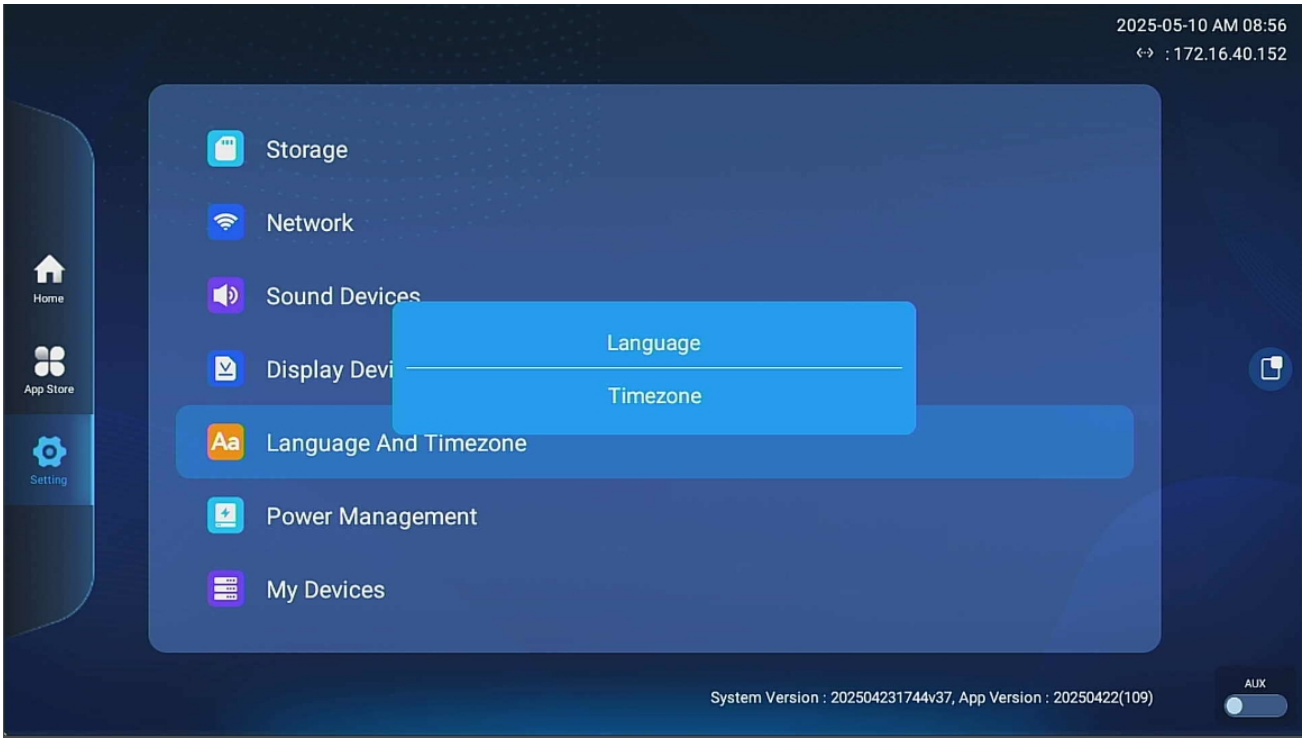


Figure 17-5

17.5.1.Language

Figure 17-5-1

(1) Different languages can be added (currently the startup software supports English and Chinese

for the time being).

(2) Swipe up to set the system language.

(3) Click on the upper right corner to remove the language.

17.5.2.Timezone

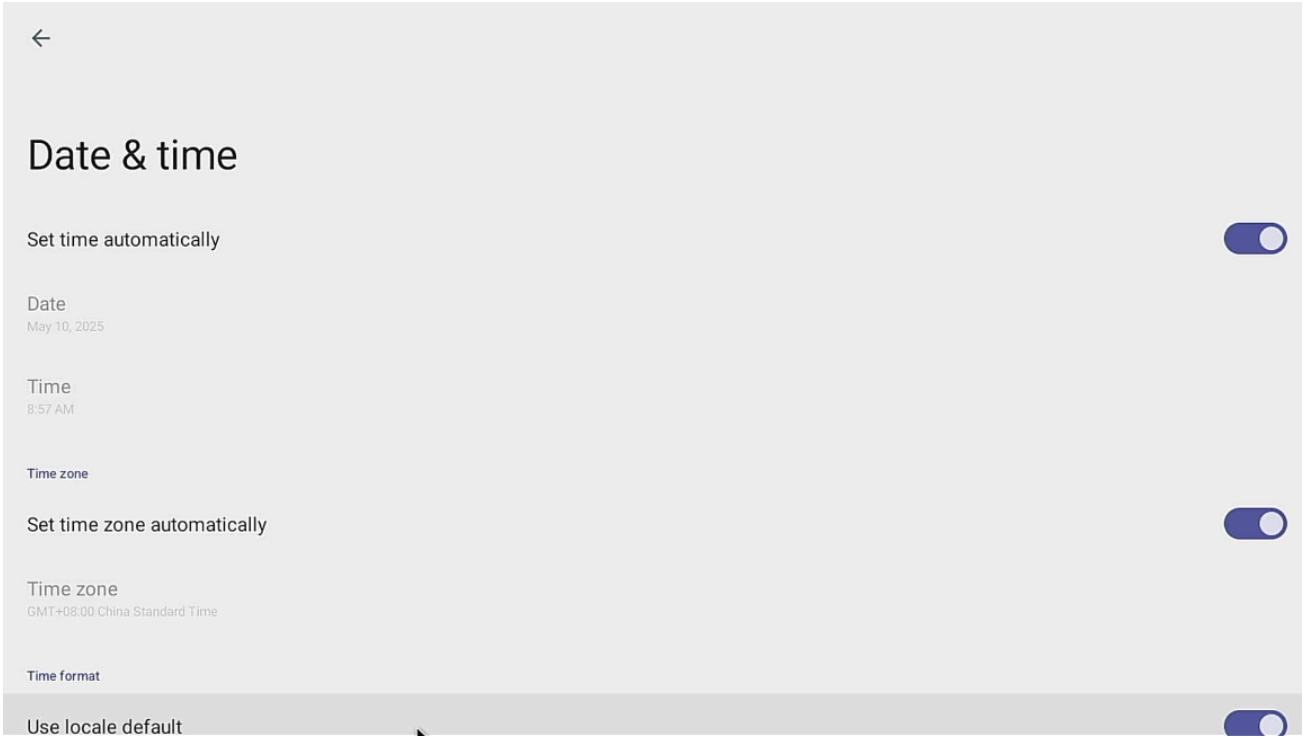


Figure 17-5-2

(1) Automatically set the time according to the time zone. The option can be turned off for manual setting of the date and time.

(2) Display the current year, month and day.

(3) Display the current time.

(4) Turn on the option to display the system default timezone. The option can be turned off for manual setting of the time zone.

(5) Once on, 24-hour system cannot be selected.

(6) 12-hour or 24-hour system can be selected.

17.6.Power Management

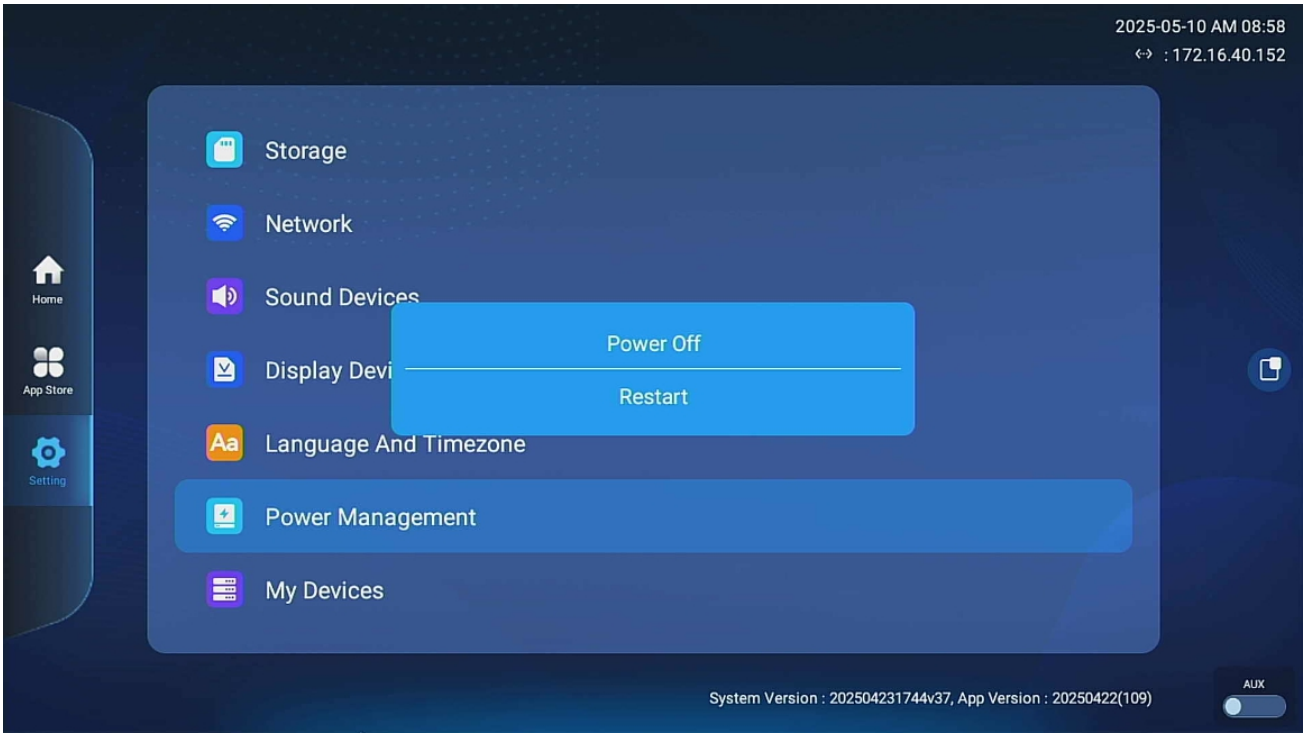


Figure 17-6

The terminal can be shut down or rebooted.

17.7.My Devices

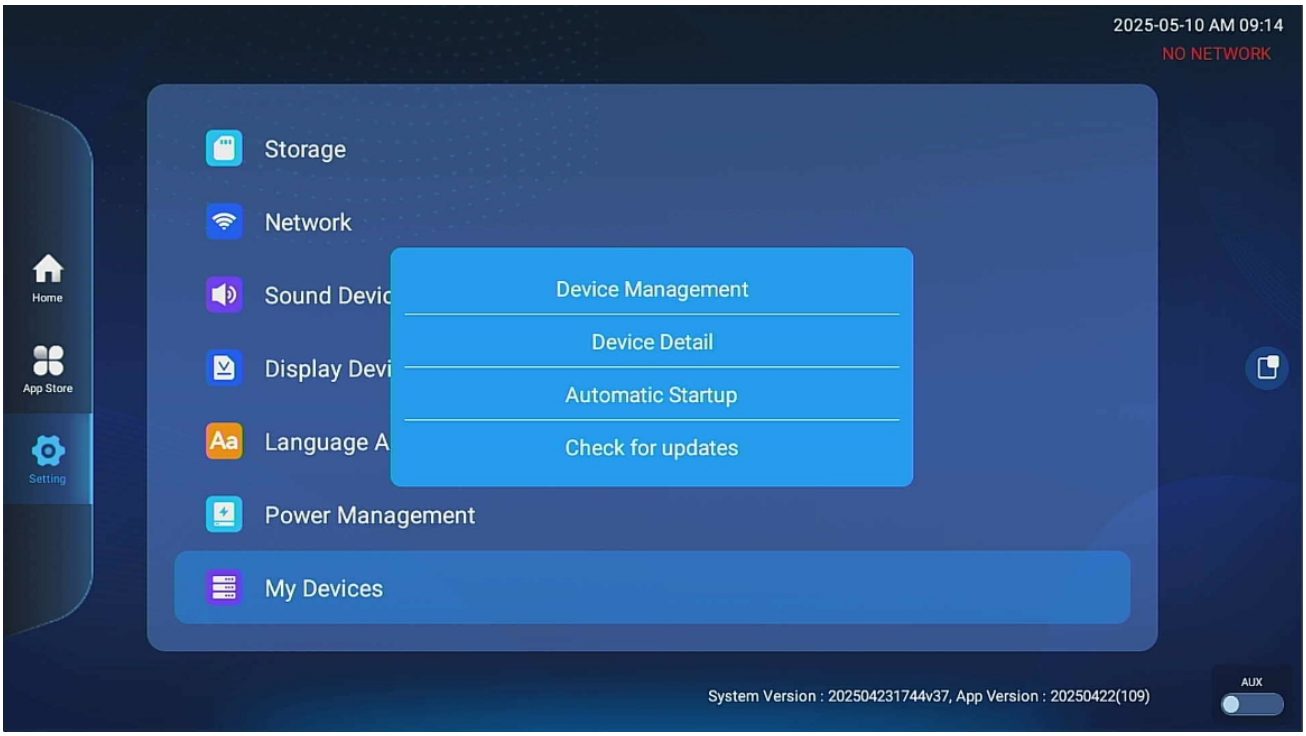


Figure 17-7

(1) Device management: Mainly control the fan switch of the device and power-on startup, system switching. See 17.7.1 for details.

(2) Device information: Mainly displays device-related information. See 17.7.2 for details.

(3) Power-on startup item: It can set the application displayed in the homepage. After the terminal is powered on, it directly enters the selected application. See 17.7.3 for details.

(4) Check for updates: Networking updates are available.

17.7.1.Device management

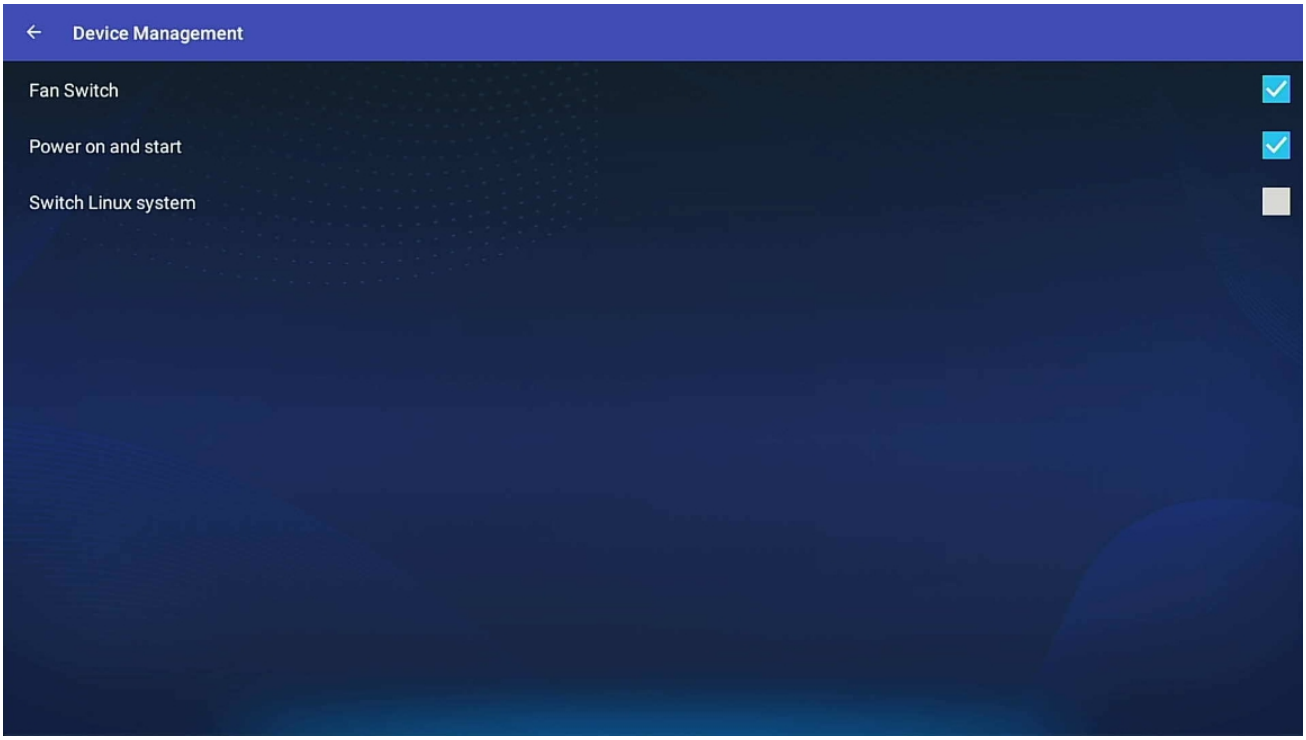


Figure 17-7-1

(1) Fan switch: Switch on/off the terminal fan.

(2) Power-on startup: When it is turned on, the terminal can be turned on automatically after powering up.

(3) Switch to Linux system: Click to switch to Linux system and the system will restart.

17.7.2.Device information

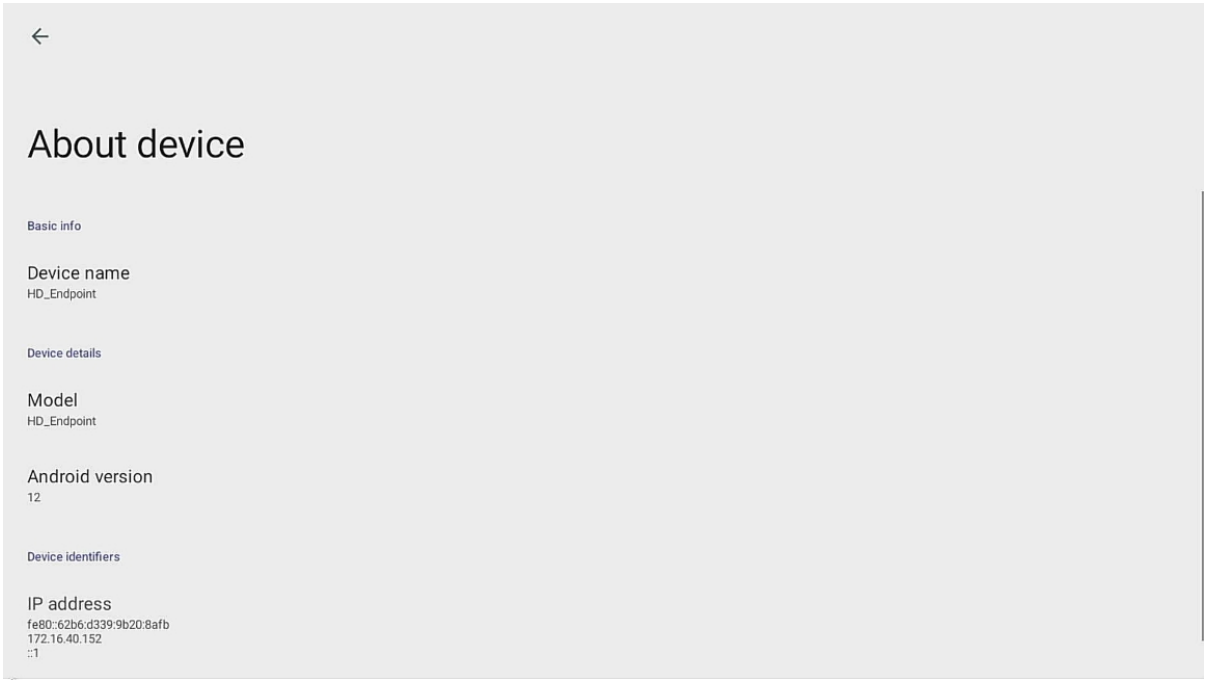


Figure 17-7-2

Displays device name, model, version information, IP address, etc.

17.7.3.Power-on startup item

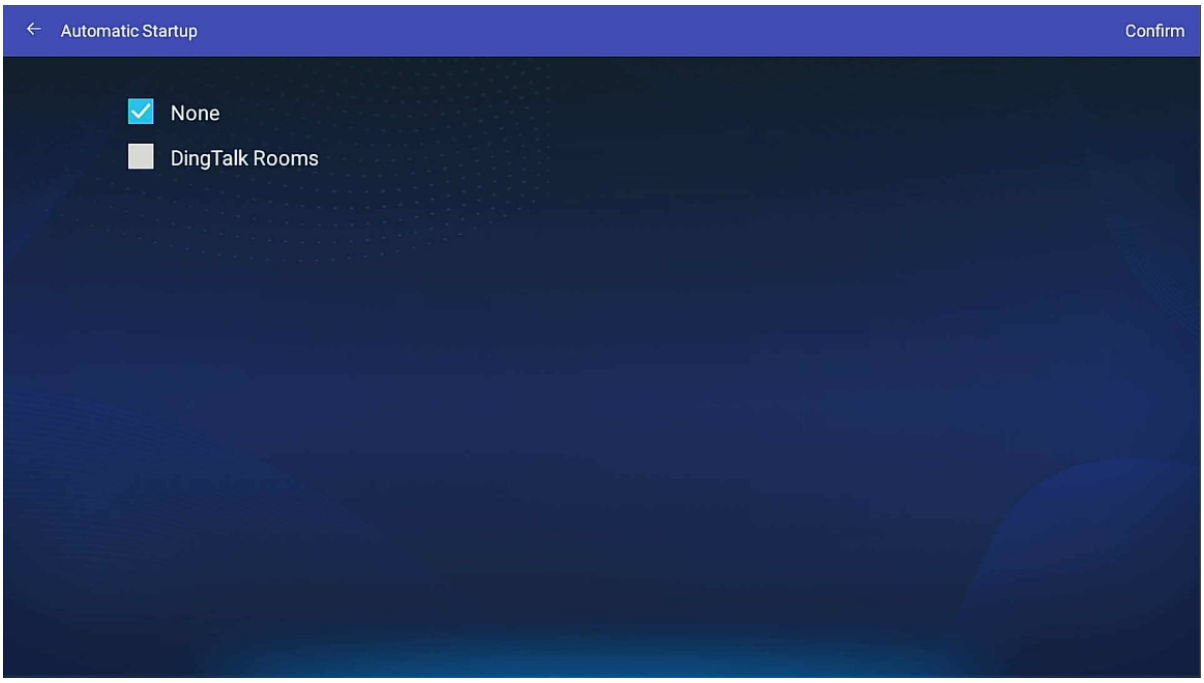


Figure 17-7-3

After setting, you can directly enter the corresponding software interface after the startup (only the software in the homepage can be set as the startup software).

18.Maintenance and Troubleshooting

18.1.Periodic Inspection

The conference administrator shall regularly check the working environment, cable connection, communication network connection and audiovisual input and output of the terminal to ensure the normal operation of the terminal system composed of the terminal and its peripheral equipment.

18.1.1.Regular inspection of the working environment

The work environment items that the administrator should check regularly.

Item	Terminal requirement
Working temperature	0℃~35℃
Working relative humidity	10%~80% (Refer to similar products)

Caution

If the environmental project exceeds the range of terminal requirements, it is recommended to cut off the terminal first, improve the environmental conditions and then start the terminal.

18.1.2.Periodic inspection of terminal cables

Periodic inspection of audiovisual cables

Check regularly (recommended once a week) for loose cables between terminals and peripherals, power supplies. Turn on the terminal power and start the terminal. Test whether the cable connection is normal. If loose, tighten immediately.

Regular inspection of communications cables

Start the terminal regularly (once a week) and test whether the communication cable connected to the terminal is normal. Test method: connect the MCU server through the terminal and join the conference.

•If access can be made, it can be determined that the communication cable connection under this access mode is normal.

•If access can not be made, please check whether the cable connection is correct, whether the cable connection is loose, whether the communication parameters are set correctly, if not resolved, please consult the network administrator to check the network.

18.1.3.Audio testing

Sound test	Detect local audio output links for normal operation, see 10.5
Back loop test	Detect local audio input and output links for normal operation, see 10.5

18.1.4.Video testing

Video testing	Detect local video input and output links for normal operation see 10.5

18.2.Software Upgrade

This product upgrade package is provided by our company. Please contact technical personnel for data backup and technical support before upgrading.

Caution

During the upgrade, please do not turn off the system power in case of irreparable failure.

18.3.Contact Technical Support

Technical support hotline

If you have an urgent trouble class problem, contact the technical engineer for help. Before calling the technical support department, it is recommended to open the terminal at this time to display the interface during communication.

- **Technical support hotline: 400-991-2218**

Appendix

A Safety Precautions

For the correct and safe use of the equipment, please read this carefully before use and follow it strictly when using.

Basic requirements

•In the process of storage, transportation and use of equipment, it must be strictly kept dry and must avoid fierce collision.

•Do not disassemble the equipment, please contact us when the equipment fails.

•Without authorization, no unit or individual may make structural, safety and performance design changes to the equipment.

•Use this equipment in accordance with relevant laws and regulations, respect the legitimate rights of others.

Environmental requirements

•Please place the equipment in a ventilated environment without strong light.

•Do not put the equipment near the water source or in a wet area.

•Please place the equipment on the stationary table. Please install the equipment strictly in accordance with the manufacturer's requirements.

•Do not place any objects on the equipment and leave more than 10 cm of heat dissipation space around and at the top of the equipment.

•Do not close the equipment to flammable objects, such as foam materials.

•Keep away from heat sources or exposed sources of fire, such as electric heaters, candles, etc.

•Keep away from electrical appliances such as microwave ovens, refrigerators, mobile phones, etc.

Use Notes

•Do not let children play equipment and accessories, to avoid swallowing, etc.

•Please use accessories and accessories recommended by manufacturers, such as power adapters and batteries.

•Do not allow water or other liquids to enter the equipment. If liquid enters the equipment accidentally, please disconnect the power immediately, unplug all cables connected to the equipment, such as power cords, telephone lines, etc., and contact us.
•Please prevent foreign bodies (such as metal) from entering the equipment through vents.
•Keep your hands dry when plugging the cable.
•Do not trample, pull and overbend the equipment cable to avoid equipment failure.
•Do not use damaged or aging cables.
•Please disconnect the power supply and pull out all cables connected to the equipment to avoid lightning damage.
•When the equipment is not used for a long time, please disconnect the power supply.
•Do not look directly at the infrared emitter of the remote control to avoid visual damage.
•If there are abnormal phenomena, such as smoke, abnormal sound, smell, etc., please immediately stop using and disconnect the power supply, pull out all the connection cables to the equipment, remove the remote control battery and contact us.
•Before connecting other lines, please connect the main ground wire; in the process of wire removal, please remove the ground wire.
•Please ensure that the three-phase socket is effectively grounded, null line and live line are not connected mistakenly.
•Do not scratch or abrade the device housing. The peeling paint may cause allergies to the human body, or abnormal equipment, such as falling into the host and causing short circuits.

Cleaning Notes

•Before cleaning, stop using the equipment and disconnect the power supply, pull out all cables connected to the equipment, such as power lines.
•When cleaning, do not use cleaning liquid or spray cleaner to clean the housing of the equipment. please use soft fabric to wipe the equipment housing.

Tips for LCD Screen Use

•Do not expose the surface of the LCD screen to the sun.
•Do not press, scratch or hit the LCD screen, do not place heavy objects on the screen.
•Do not keep staring at the screen for a long time, which may lead to eye fatigue and vision loss.

Cleaning of LCD Screen

•When using clean cloth, please follow the instructions attached. It is recommended to use soft cloth to gently wipe the dust off the screen surface.

•Do not use volatile solvents to clean the screen, such as alcohol, benzene or thinner, and do not allow rubber or plastics to touch the screen for a long time to avoid damage to the surface brightness.

Environmental protection

Do not throw waste equipment or batteries into the trash can. please comply with local decrees regarding equipment packaging materials, depleted batteries and disposal of used and end-of-life equipment and support recycling actions.

B Technical Indicators

Model		**NT90MB**			
Specification	WIFI	B500	B500-4	B500-8	B500-16
	5G (Optional)				
Built-in MCU		NO	4	8	16
Framework agreements		Comply with ITU H.323 and SIP protocols			
Power supply		DC 12V			
Video input		3-channel HD video input interfaces; support 1280*720P 60fps/50fps/30fps/25fps, 1920*1080P 60fps/50fps/30fps/25fps; 3840*2160 P60fps/50fps/30fps/25fps high-definition input interface			
Video output		2-channel HD video output interfaces; support 1024*768P 60fps, 1280*720P 60fps, 1920*1080P 60fps/30fp, 3840*2160P 60fps/30fps HD output;			
Audio input		4-channel audio input interfaces, MIC IN*1, LINE IN*1, HDMI*1, RJ45*1			
Audio output		2-channel audio output interfaces, HDMI*1、LINE OUT*1, can connect to speaker or mixer			
Net port		1 Gigabit Network，RJ45*1			
USB interface		≥2 USB interfaces for extensions and online upgrades			
Video protocol		Support H.261, H.263, 263+, H.264, H264HP, H.265 Video Standard Protocol			
Dual stream protocol		Supports H.239, BFCP dual stream protocol			
Audio protocol		Support G.711A, G.711U, G.722, G.722.1, G.722.1 C, OPUS and other audio codec protocol standards			
Video resolution		Video resolution supports QCIF, CIF, 4CIF, 480P, D1, 720P, 1080P			
Display mode		Support 4:3 and 16:9			
Access rate		Achieve 64Kbps–8Mbps access rate			

Audio quality	20KHz (support dual channel stereo effect), opus-48K
Audio processing	Support automatic noise suppression, automatic gain control and automatic echo cancellation function;
Audio features	Support venue mute and closed function, venue sound output size adjustable;
Other	Support hardware and software terminal hybrid network, support NAT traversing, support IP Precedence, Diffserv
Management maintenance	Terminal built-in WEB server, can be directly managed through WEB remote management or remote control;
	Network Ping test, network bandwidth test, network packet loss rate test; network state statistics function, can be connected in the communication protocol, rate and packet loss rate for real-time statistics;
	Support local audio, video circuit diagnosis function; one-key local audiovisual testing;
	Support for call log and history queries;
Environmental requirements temperature	0℃~35℃ (Working), -40℃~55℃(Non-working)
Relative humidity	10%~80% (Working state), 0%~95% (Non-working state) (Non-condensing)
Dimensions (L×W×H)	327mm×180mm×37.5mm (including foot size)
Weight	1.54Kg

C Tips

Web interface provides intuitive icons or text indicating the status or settings of the system.

Text Tips

web interface provides many text tips, the following table lists only common tips to help you quickly understand more tips and complete the operation.

Frequently Asked Questions Tips

Information	Reason
Fixed IP prompt save failed	IP address, mask, gateway filling is not legal, please confirm IP address legitimacy before filling in.
Failure to call IP address or account with dial-up keyboard	1)Check that the network link is normal 2)Dial mode selection error, dial to confirm the other number type and select the correct dial mode
The corresponding conference can not be queried in the terminal conference list after the server has booked and started the conference	1)Check if the terminal is logged into VCS account 2)The terminal conference list only shows the private type of conference on the server

D Terminology

720P	image resolution format with resolution of 1280×720.
4CIF	image resolution format with resolution 704×576.
CIF	image resolution format with a resolution of 352×288.
Multiple images	A monitor screen is distributed to display multiple venue images, such as 2,4,6,8,16,25.
Two-split screen	On a monitor screen, two scenes of the same size are displayed, each accounting for about 1/2 of the screen.
HD	Image resolution up to 720P, 1080I, 1080P. HD effect is composed of several parts, from camera to coding, output equipment is indispensable. Normally use the monitor output of 16:9 screen.
G.711	Speech codec standard (A law or U law) with pulse coding modulation (PCM) with a data speed of 64kbit/s.
G.722	Adaptive differential pulse coding modulation (APPCM) is used in speech coding. The speed of data is 48kbit/s, 56kbit/s or 64kbit/s.

H.239	ITU-T recommended criteria for allowing simultaneous sending of data content such as video and computer desktops in a video conference.
H.264	H.264 has strong BER resistance by providing the same high quality image for only half of the H.263 bit rate.
H.323	Framework standards for terminal communication within a non-QoS LAN.
Picture in picture	The monitor screen displays images from two video sources in a large and small picture overlay. The small picture is about 1/16 of the big picture.
XLR	(XLR) Three-core balanced analog audio interface, mainly used to connect microphones.
RCA	(RCA) Unbalanced analog audio interface, RCA audio cable consists of one red and one white two signal lines, providing stereo sound.
S-VIDEO	Five core interface, which consists of two video brightness signals, two video

	color signals and one common shielded ground wire, is also called S terminal.
Dual stream	Two independent video streams can be sent or received at the same time, one is called mainstream, the other is called active image, the other is called auxiliary stream, and it is generally computer desktop content. Two images can be output on two monitors respectively.

E Abbreviations

4CIF	Four times the Common Intermediate Format	Image resolution format with resolution 704×576
AAC_LD	Advanced Audio Coding-Low Delay	Advanced Audio Coding - Low Delay
ADSL	Asymmetric Digital Subscriber Line	Asymmetric digital subscriber line
AES	Advanced Encryption Standard	Advanced encryption standards. The Packet Cryptography Algorithm NIST (the National Standards and Technology Association of America
BNC	bayonet Neil-Concelman connector	By R, G, B three primary color signal and line synchronization, field synchronization five independent signal connector.BNC joints can reduce the interference between signals.
BRI	Basic Rate Interface	Basic Rate Interface
CAS	Channel Associated Signaling	Channel Associated Signaling
CCD	Charge Coupled Device	Charge Coupled Device
CCS	Common Channel Signaling	Common Route Signaling Mode
CIF	Common Intermediate Format	Common intermediate format, resolution 352×288
CRC	Cyclic Redundancy Check	Cyclic redundancy check (method)
CVBS	Composite Video Base Signal	Composite video baseband signal
DES	Data encryption standards. a packet cipher Data Encryption Standard algorithm based on NIST standard using a 56-bit key.Used by NIST in 1977 and replaced by AES (Advanced Encryption Standard) in 2001.	
DNS	Domain Name Server	Domain Name Server

DSCP	Differentiated Services Code Point	Distinguishing services
DVI	Digital Visual Interface	Digital display interface.DVI interface transmission speed, clear image DVI-I interface can be compatible with both analog and digital signals. ,
HD	High Definition	High definition image, referred to as high definition.
ISDN	Integrated Services Digital Network	Integrated Business Digital Network
MCU	Multipoint Control Unit	Multipoint Control Unit
NAT	Network Address Translation	Network address conversion
NTSC	National Television Standards Committee	National Television Council, North American and Japanese TV formats.
PAL	Phase Alternating Line	Line by line inverted phase system, a television system.
PPPoE	PPP Over Ethernet	Ethernet bearer PPP protocol
PRI	Primary Rate Interface	Base group rate interface

PSTN PTZ	Public Switched Telephone Network Pan/Tilt/Zoom	Horizontal, Vertical and Zoom Control of Public Switch Telephone Network Camera
Q QoS	Quality of Service	Quality of service
R RM	Resource Manager	One of the video network components, providing video resources and video business management.
S SDI SMB SXGA	Serial Digital Interface SubMiniature version B connector Super Extended Graphics Array	Serial digital interface. The standard is SMPTE-259M and EBU-Tech-3267, can transmit 270 Mbit/s serial digital component signals. Connectors are coaxial RF connectors developed in the 1960s to provide broadband capacity through clamp interface design. A display mode with a resolution of 1280×1024.

U USB	Universal Serial Bus	Universal Serial Bus
V VGA	Video Graphics Array	A display mode with a resolution of 640×480.
Y YPrPb		Analog component video. The video signal transmits brightness and two color difference signals by three cables.

itC

Warning

1. Do not block the vent.
2. If the power cord is damaged, stop using it immediately.
3. It should not be placed in the following places: poor ventilation; dusty; direct sunlight; high ambient temperature or close to heat sources; subject to vibration.
4. It is required to be protected from rain and moisture.
5. It cannot be placed in a container that can be filled with liquid.
6. The housing is required to be safely grounded.
7. The power plug and socket are required to be compatible.
8. Please do not open the housing cover by yourself to avoid electric shock. When it fails, please contact the supplier or the manufacturer for maintenance services, or you can entrust professionals in professional departments with professional certificates. Non-professionals are forbidden to disassemble the machine by themselves, otherwise electric shock may endanger the their life.

Specifications and parameters are subject to change without notice

Version 0.1

USER MANUAL