HUAWEI Box 300
20.1.1

Product Overview

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Huawei Technologies Co., Ltd.

Address: Huawei Industrial Base
Bantian, Longgang
Shenzhen 518129
People's Republic of China

Website: https://e.huawei.com

Contents

1 Product Positioning

The Box 600, Huawei's next-generation ultra-HD video conferencing endpoint, provides a powerful audio and video media processing engine and extensive audio and video ports. It can be used with a variety of cameras and display devices in meeting rooms of all sizes.

The Box 600 is suited for meeting rooms that are 40 to 60 m^2 and accommodate 13 people or more, such as medium-sized and large meeting rooms and executives' offices.

The Box 600 is classified into Box 600 and Box 600-NoWi-Fi models by product specification. The Box 600-NoWi-Fi model does not have a built-in Wi-Fi module.

2 Product Highlights

Professional-Grade Ultra-HD Video at an Ultra-Low Bandwidth

- 4K ultra-HD video with breathtaking colors delivers an immersive meeting experience.
- 4K content sharing presents every detail perfectly.
- H.265 codec and Huawei proprietary Video Motion Enhancement (VME) technology ensure strong network adaptability against 20% of packet loss concealment (PLC) and deliver 4K 30 fps at 2 Mbit/s.
- Intelligent face detection and backend image processing enhance light adaptability, reduce bandwidth consumption, improve image definition, and enhance motion images.
- The endpoint provides users with high-fi audio using two wide-band AAC-LD channels, Opus, acoustic echo cancellation (AEC), and automatic noise suppression (ANS).

Suited for Various Scenarios

- The endpoint supports mainstream audio and video ports and can be connected to the microphone array, loudspeaker, projector, and LCD/LED large-screen display device.
- One port named HT-RX functions as the network port, power port, and video port and supports video input within a maximum distance of 50 m.

Entirely New Intelligent Functionality

- Meeting functions, such as starting or joining a meeting, calling a participant, and adjusting the volume, are available using voice commands.
- The endpoint leverages voice tracking and facial recognition to automatically detect the location of the participant who is speaking and display his/her close-up video images. (This feature is supported when the endpoint is working with the Huawei VPT300 tracking camera.)

Intelligent Content Sharing

- You can push content from your PC or mobile device to an endpoint wirelessly through IdeaShare, with just one click or tap.

- When a participant is sharing content using IdeaShare, other participants are still allowed to start sharing, but the existing content sharing session will be dropped. Up to 20 IdeaShare clients can connect to the same endpoint.
- Audio, video, and images can be shared.

Multistream Conferencing

The endpoint can encode and decode multiple channels of streams in different formats at the same time, and present continuous presence in an appropriate layout, without consuming any encoding or decoding resources of the MCU. In this way, a large number of endpoints can join one meeting.

Easy to Use

- 10-inch Touch, which is stylish and easy to use
- User-friendly GUI
- PoE power supply; reserved Kensington security slot

Device-Cloud Synergy, Open Convergence

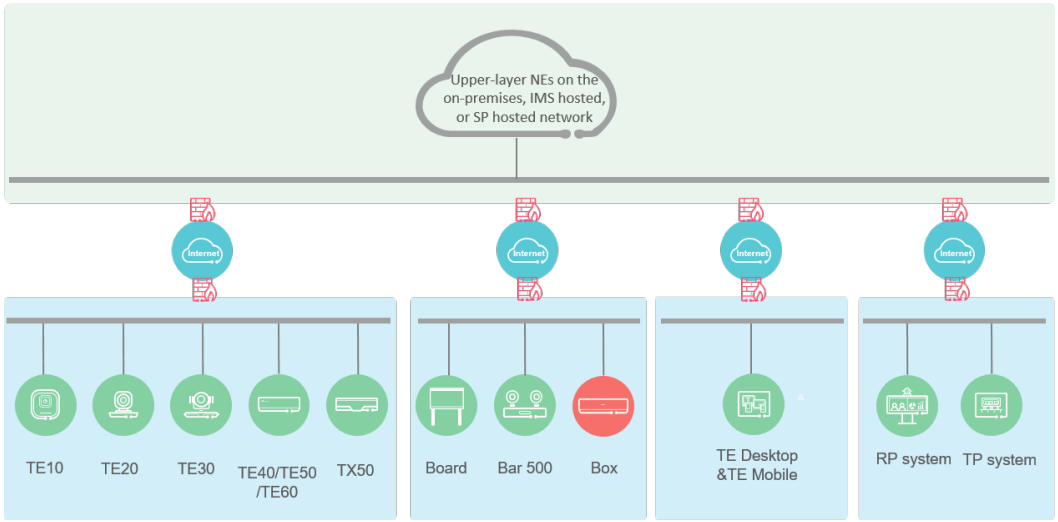
- The endpoint can be registered with HUAWEI CLOUD (that is, the public cloud developed by Huawei) and configured with just one click. No expertise is required for maintenance.
- The endpoint features sound interoperability with other NEs in the video conferencing solution and other mainstream terminals in the industry.
- A wide variety of APIs are available for integration with third-party systems and service customization.

3 Networking Schemes

3.1 CloudVC On-Premises Network

The endpoint can be connected to the CloudVC on-premises network to meet video communication requirements of enterprises and carriers.

Figure 3-1 Networking scheme



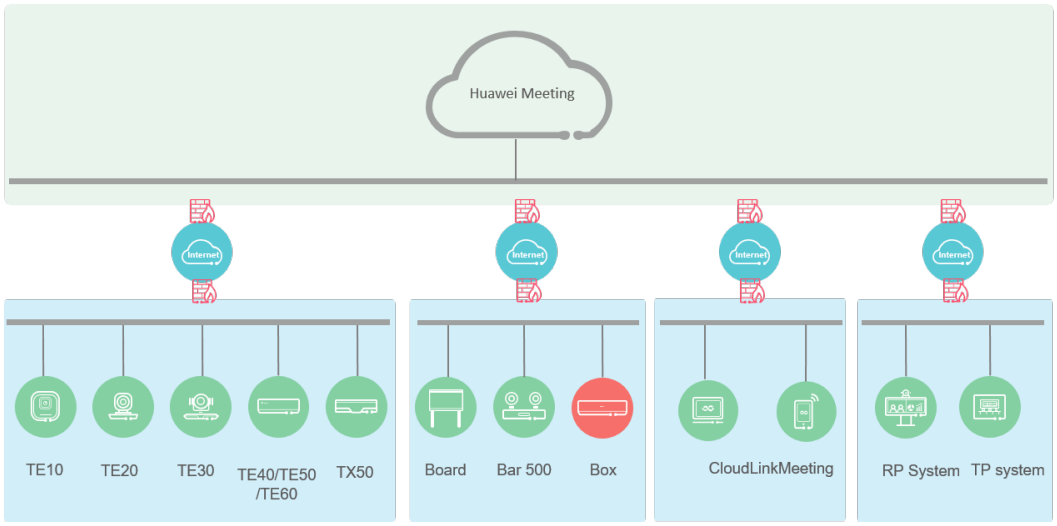
In this networking scheme:

- The endpoint connects to the on-premises network through standard H.323 or SIP.
- Audio and video calling, content sharing, and data collaboration can be implemented between the endpoint and various types of meeting terminals and clients.
- To learn more, visit **http://support.huawei.com/enterprise/en/index.html** or **http://support.huawei.com/carrier/en/hwe/index.html**, search for the solution's product documentation name, and view or download the documentation.

3.2 HUAWEI CLOUD Meeting Network

Meeting services are available on HUAWEI CLOUD, namely Huawei's public cloud platform, to provide enterprises with audio and video conferencing and data collaboration.

Figure 3-2 Networking scheme



In this networking scheme:

- The endpoint accesses the HUAWEI CLOUD Meeting service over the Internet through standard SIP, enabling video conferencing across branches, enterprises, and countries.
- A whole range of hard terminals and soft clients collaborate to extend video conferencing to all office scenarios. Cutting-edge technologies of hard terminals make them fit perfectly with various industries.

4 Product Structure

4.1 Appearance

Figure 4-1 Appearance

Table 4-1 Component description

No.	Component	Function
1	Kensington security slot	Connects to a Kensington lock to secure the endpoint. The Kensington lock should be prepared separately.
2	Heat emission holes	Used for heat dissipation. Do not block the holes during the installation.
3	LCD	Displays the IP address or site number, as well as startup, upgrade, sleep, or malfunction status.
4	Indicator (two-color)	Shows whether the endpoint is running, sleeping, or faulty.

4.2 Rear Panel

Figure 4-2 Rear panel

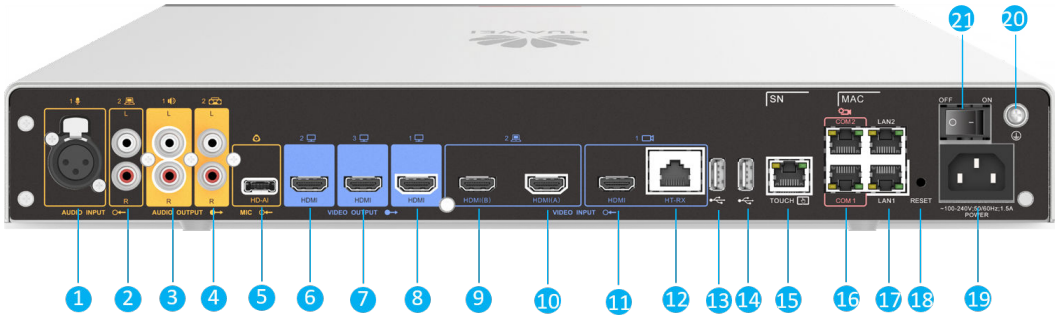


Table 4-2 Component description

Category	No.	Component	Function
Audio input ports	1	Microphone input port (XLR port)	Connects to the XLR port on a microphone.
	2	RCA port (L: left audio channel; R: right audio channel)	Connects to an audio input source such as a computer.
	5	HD-AI audio input port	Connects to a microphone array (VPM220 or Mic 500). Two microphone arrays can be cascaded.
Audio output ports	3	RCA port (L: left audio channel; R: right audio channel)	Connects to an external loudspeaker as the first output to deliver audio of the remote participants.
	4	RCA port (L: left audio channel; R: right audio channel)	Connects to a recording device as the second output to record audio of the local and remote participants.

Category	No.	Component	Function
Video output ports	6	HDMI HD video output port, which supports a resolution of up to 4K 60 fps and audio output **CAUTION** To display 4K 50 fps or 4K 60 fps videos, only HDMI 2.0 cables can be used. Otherwise, a black screen or screen crack may occur. To display videos with 4K 30 fps or lower resolutions, both the HDMI 1.4 and HDMI 2.0 cables can be used.	Connects to a display device as the second output. • When the dual-screen function is enabled, this port delivers participant video. • When the dual-screen function is disabled, no video is delivered by default. The local video can be displayed based on the configuration.
	7	HDMI HD video output port, which supports a resolution of up to 1080p 60 fps and audio output	Connects to a display device as the third output. Local and remote videos or conference materials can be displayed based on the configuration.
	8	HDMI HD video output port, which supports a resolution of up to 4K 60 fps and audio output **CAUTION** To display 4K 50 fps or 4K 60 fps videos, only HDMI 2.0 cables can be used. Otherwise, a black screen or screen crack may occur. To display videos with 4K 30 fps or lower resolutions, both the HDMI 1.4 and HDMI 2.0 cables can be used.	Connects to a display device as the first output. • When the dual-screen function is enabled, this port delivers shared content. If there is no content sharing, the projection code is delivered from this port. • When the dual-screen function is disabled, this port delivers video or shared content.

Category	No.	Component	Function
Video input ports	9	HDMI HD video input port, which supports a resolution of up to 4K 30 fps and audio input	• Connects to a content source (such as a local computer) as the second input. This port is the second content input port. • This port cannot be used with the primary content input port.
	10	HDMI HD video input port, which supports a resolution of up to 4K 30 fps and audio input	• Connects to a content source (such as a local computer) as the second input. This port is the primary content input port. • This port cannot be used with the second content input port.
	11	HDMI HD video input port, which supports a resolution of up to 4K 30 fps and audio input	• Connects to a Camera 200 or VPC800 directly or a VPC600, VPC620 or VPT300 using a conversion cable as the first input. • This port cannot be used with the HT-RX port.
	12	HT-RX port, which supports a resolution of up to 4K 30 fps	• Dedicated port for connecting to an HT-RX camera as the first input within a maximum distance of 50 m. This port supports video input, power supply, and camera control. • This port cannot be used with the HDMI camera input port.
Other components	13	USB Type-A port	Connects to a USB device, such as the IdeaShare or a USB flash drive.
	14	USB Type-A port	Connects to a USB device, such as the IdeaShare or a USB flash drive.
	15	TOUCH port	Connects to the HUAWEI Touch. The endpoint can also supply power to the HUAWEI Touch through this port.
	16	COM port (dual-mode serial communication port)	• Connects to a camera control cable to control the camera. It can also be used for fault diagnostics and maintenance of the endpoint. • A camera connected to the endpoint can be upgraded through this port or the HT-RX port.

Category	No.	Component	Function
	17	Ethernet port (10/100/1000 Mbit/s, full-duplex and half-duplex supported)	• LAN1 (primary): network port used for external services LAN2 (backup): internal management network port used to view and modify endpoint configurations and locate faults The LAN2 and LAN1 ports cannot be located on the same network. Otherwise, a network loopback may occur, causing a network storm. • Support Wake-on-LAN (WOL).
	18	Reset pin hole (Use the tip of a pen or similar to reset.)	• During startup, push the pin hole for 10s to restore the backup system. • When the endpoint is running, push the pin hole for 15s to reset it to factory settings.
	19	Power input port (100-240 V AC, 50/60 Hz, 1.5 A)	Connects to a power supply.
	20	Ground port	Connects to a ground cable.
	21	Power switch	Powers the endpoint on or off. **NOTE** Connect all necessary cables before powering on the endpoint.

4.3 Indicator

By checking the status of the indicator on an endpoint, you can check its operating status and ensure that it is working properly with other video conferencing devices.

Table 4-3 Indicator statuses and corresponding endpoint statuses

Indicator Status	Endpoint Status
Off	Powered off
Blinking green twice per second	Powering on
Blinking green four times per second	Upgrading
Steady green	Working properly

Indicator Status	Endpoint Status
Breathing green (gradually lighting, then dimming)	On standby
Blinking red once every 5s	Faulty hardware
Blinking red four times per second	Faulty software
Blinking red once every 2.5s	Overheated

4.4 Matching Touch

The HUAWEI Touch, a 10-inch touch panel, is used for operating the endpoint. The HUAWEI Touch provides a user-friendly UI where you can easily use meeting functions such as calling a participant and controlling a meeting through several taps.

Figure 4-3 HUAWEI Touch

Table 4-4 Component description

No.	Component	Function
1	Power button	Press to lock or wake up the HUAWEI Touch. Press and hold to turn the HUAWEI Touch on or off.
2	Type-C port	Connects to a power adapter using a Type-C cable to power the Touch. Prepare the Type-C cable and HW-050200C02 power adapter separately.

No.	Component	Function
3	PoE port	• Connects to the TOUCH port on an endpoint using the Touch network cable. The Touch is powered through the TOUCH port. • Connects to the PoE port on the PoE adapter using the Touch network cable. The Touch is powered through the PoE adapter. Connects the Touch to the endpoint over Wi-Fi. • Connects to the PoE port on the PoE adapter using the Touch network cable. The Touch is powered through the PoE adapter. The DATA port on the PoE adapter connects to the network where the endpoint is located.
4	Kensington security slot	Connects to a Kensington lock to secure the HUAWEI Touch. The Kensington lock should be prepared separately.

To learn more, see the *HUAWEI Touch Quick Start* delivered with the Touch.

4.5 Required Camera

The endpoint works with multiple Huawei HD camera models, including Camera 200, VPC600, VPC620, VPC800, and VPT300.

Camera 200

The Camera 200 is a 4K ultra-HD PTZ camera developed by Huawei. It works with Huawei HD video conferencing endpoints or cloud conferencing soft clients to provide users with HD video experience. The Camera 200 has the following highlights:

- Designed with simplicity, it has a stylish appearance, with silver as the dominant color.
- It has a half-hidden lens, which is protected by the solid metal structure and integrated housing from damage such as collision and dust.
- It supports ultra-HD video, as well as HD resolutions such as 1080p 50 fps and 1080p 60 fps. Moreover, it supports Automatic White Balance (AWB), Automatic Exposure (AE), and Automatic Focus (AF) to enable industry-leading video processing capabilities.

Figure 4-4 Camera 200

VPC600/VPC620

The VPC600 and VPC620 support HD resolutions such as 1080p 60 fps, 1080i, and 720p. They also provide industry-leading video processing capabilities through AWB, AE, and AF.

The VPC600 and VPC620 have the same appearance.

Figure 4-5 VPC600/VPC620

VPC800

The VPC800 is the industry's first 4K x 2K 60 fps ultra-HD camera that is compatible with HD resolutions such as 1080p 60 fps, 1080i, and 720p. Additionally, the VPC800 provides industry-leading video processing capabilities with AWB, AE, and AF.

The VPC800 has a sleek black design, with a half-hidden lens, aluminum-alloy structure, and integrated housing. The lens is well protected from damage and debris.

Figure 4-6 VPC800

VPT300

The VPT300 has a compact design and consists of one base, one sound pickup pole, and two VPC600s. Besides, the VPT300 provides 16 built-in microphones as a microphone array for sound localization, as well as a dual-camera system for face detection, to support speaker tracking with accurate localization and fast focus.

Figure 4-7 VPT300

4.6 Required Microphone Array

4.6.1 VPM220

The endpoint can be connected to a HUAWEI VPM220 microphone array. The VPM220 provides dual-channel wideband audio, delivering an unprecedented audio experience.

Figure 4-8 VPM220 microphone array

- High-quality audio

  The VPM220 supports a sampling rate of up to 48 kHz and a full frequency range. It is able to sample sound at rates lower than 22 kHz, which means that it can completely pick up any sound recognized by human ears. The VPM220 significantly reduces signal loss caused by analog transmission cables, while offering a hi-fi stereo experience. These capabilities are made possible through the integrated digital signal processing and transmission technology and the Acoustic Echo Cancellation (AEC), Automatic Gain Control (AGC), and Automatic Noise Suppression (ANS) functions.

- Superior audio experience

  Embedded with three microphones, a single VPM220 supports 360-degree sound pickup with an optimal range of six meters. This allows participants at the local site to hear every sound nuance coming from participants at the remote site.

- Power saving

  Highly energy-efficient, the VPM220 requires no more than 2.5 W of power when running.

4.6.2 Mic 500

The HUAWEI CloudLink Mic 500 compact microphone array supports 360-degree sound pickup with an optimal range of six meters, lossless broadband audio transmission, and excellent 3A audio processing technology. It works with Huawei's full series of video conferencing endpoints to deliver an entirely new hi-fi stereo audio experience. (3A = AEC: Acoustic Echo Cancellation; AGC: Automatic Gain Control; ANS: Automatic Noise Suppression)

Figure 4-9 Mic 500

- Elegant appearance and compact design with low power consumption

The appearance of the Mic 500 is designed by a top-notch design company. The metal grid design ensures an extraordinary sound collection. The top cover employs a black glossy style, circled by a bright silver edge, and provides one button for muting or unmuting. The microphone array presents itself as a small-sized (15 cm diameter), visually appealing, and technically professional device.

- Plug and play

  The Mic 500 can be directly connected to an endpoint for use, with no need for any configurations. It fits well with various meeting rooms and is effortless to use.

- Superb hi-fi audio

  The Mic 500 supports a sampling rate of 48 kHz, a full frequency range, and dual-channel hi-fi stereo to deliver an unimaginable audio experience. When working with the endpoint, it automatically adapts to various audio codec protocols such as Opus, AAC-LD, G.722, G.711, and G.728.

- Superior audio experience

  The Mic 500 supports 360-degree sound pickup with an optimal range of 6 meters. This allows participants at the local site to hear every sound nuance coming from participants at the remote site.

- Excellent audio processing technologies
  - Acoustic Echo Cancellation (AEC)

  This technology eliminates echo from video conferences, creating an enjoyable interaction experience.
  - Automatic Noise Suppression (ANS)

  This technology reduces noise for video conferencing to deliver high-fi audio.
  - Automatic Gain Control (AGC)

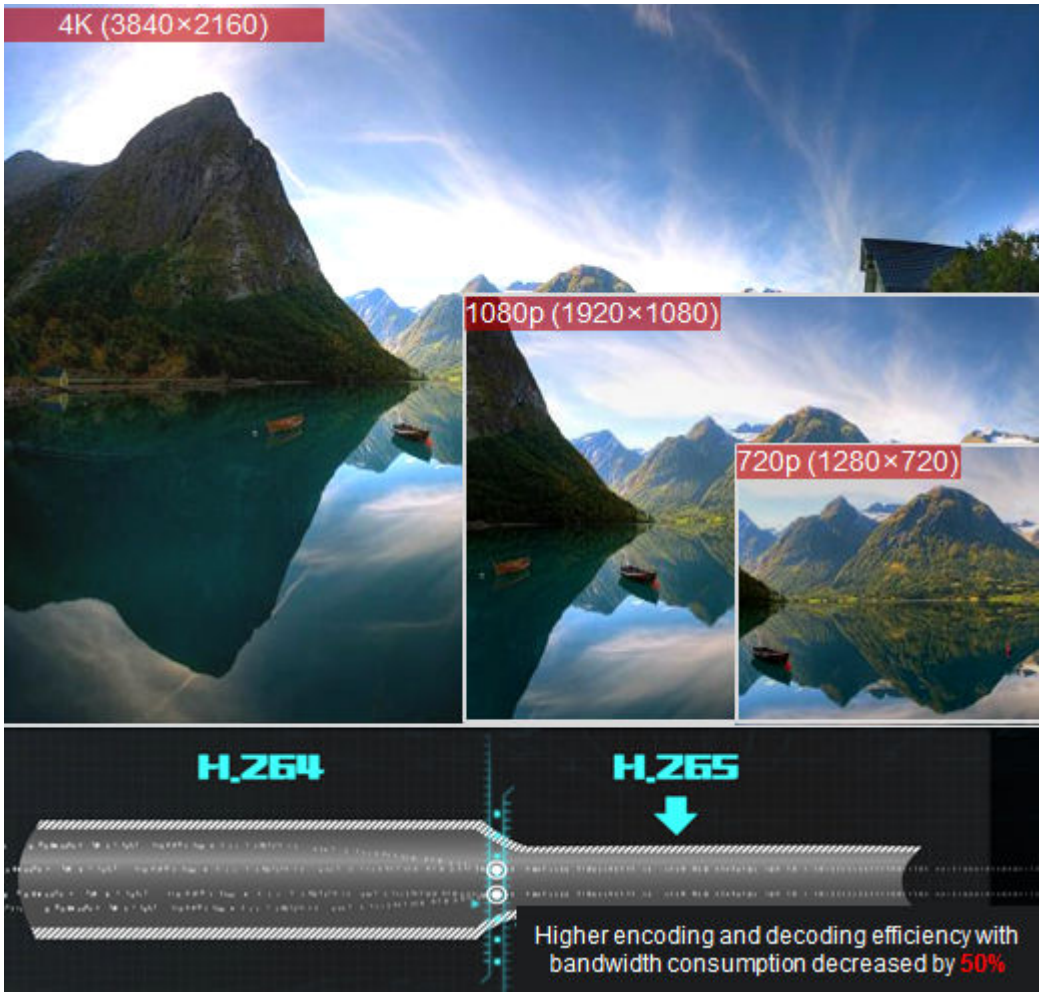
    This technology guarantees stable and natural audio.

5 Functions and Features

5.1 H.265 4K Ultra-HD Video

Huawei's proprietary VME technology, combined with H.265-based encoding and decoding for video and content, delivers a 4K ultra-HD video experience. 4K provides the incredible clarity and lifelike detail, with a resolution four times that of 1080p, on a larger screen.

Figure 5-1 H.265 4K ultra-HD video



5.2 Hi-Fi Audio

The endpoint provides hi-fi audio and clearer full-duplex digital audio, delivering a superb audio experience.

- The endpoint supports Acoustic Echo Cancellation (AEC), Automatic Noise Suppression (ANS), Automatic Gain Control (AGC), VoiceClear, AudioEnhancer, and lip synchronization.
- Opus-related technologies are adopted, including Forward Error Correction (FEC), Backward Error Correction (BEC), Packet Loss Concealment (PLC), Net Automatic Transfer-Enhancement (netATE), and Audio Jitter Buffer (AJB).
- The endpoint connects to a wired microphone array VPM220 or Mic 500 for sound pickup. If the meeting room is large, with participants dispersed, microphones can be cascaded for sound pickup within a wider range. Two microphones can be cascaded, with a maximum distance of 12 m between them. The recommended distance is 3 m to 6 m.

5.3 Intelligent Content Sharing

Content Sharing over a Cable Connection

You can connect your endpoint to a computer through the HDMI port to share the computer desktop. If no participants are sharing content in a meeting, your endpoint starts sharing content after the computer is connected. If someone is sharing content when your endpoint and computer are connected, you will be asked to confirm whether to start sharing content.

Wireless Projection

Wireless projection frees you from complex cable connections and allows you to share your PC and mobile device desktops. When multiple wireless projection sources are connected, you can switch among them. The endpoint supports a maximum of 20 projection sources.

- Using the IdeaShare Android client, you can share the screen of a mobile device.
- Using the IdeaShare PC client, you can share your computer desktop.
- Using the IdeaShare Key, you can share your computer desktop in one click.

Figure 5-2 IdeaShare Key

5.4 Intelligent Voice Assistant

You can say "Hey, Scotty" to the microphone to wake up "Scotty", the intelligent voice assistant, and then operate the endpoint using voice commands.

NOTE

The intelligent voice assistant is disabled by default. If you want to use this function, enable it on the HUAWEI Touch or web interface.

Using the intelligent voice assistant, you can:

- Call a participant or cancel the call
- Create a meeting

- Join a meeting
- Extend a meeting
- Leave or end a meeting
- Add or delete a participant
- View a participant or continuous presence
- Share content or stop sharing
- Turn up or down the loudspeaker of the local site
- Turn up/down the volume to the maximum/minimum
- Mute or unmute a participant
- Start an intelligent diagnostics

5.5 Facial Recognition Sign-In

With face detection and recognition technologies, the endpoint identifies a participant before or during a meeting and reports the participant information to the server for sign-in, implementing auto sign-in.

Endpoints allow you to view sign-in information on the Touch.

Figure 5-3 Facial recognition sign-in

There are the following facial recognition sign-in modes. The auto sign-in is used by default.

- Background sign-in

  Endpoints perform facial recognition sign-in in the background and do not display the sign-in window in full screen.

- Auto sig-in

  The system automatically enables the full-screen sign-in once the sign-in starts. Then, the system automatically switches to background sign-in after the conference starts.

- Full-screen sign-in

  The sign-in window is displayed in full screen.

5.6 On-Screen Name Tags

With face detection and recognition technologies, the endpoint automatically identifies participants and adds on-screen name tags of participants to the video for easy communication.

Figure 5-4 On-screen name tags

5.7 Intelligent Tracking

If intelligent tracking is required, connect a VPT300 to the endpoint. The VPT300:

- Uses voice tracking and facial recognition algorithms for sound detection and localization and collects images for facial recognition to achieve accurate and flexible tracking.
- Automatically presents the optimal view of participants in a meeting room, without requiring any manual intervention. This function is called AutoFrame.
  - The camera automatically identifies whether only one participant is speaking or two participants are having a conversation, and then presents the most suitable close-up of the speaker/speakers.
  - When no one is speaking, the camera automatically adjusts its lens to provide a dynamic overview of the entire meeting room based on the number and location of participants.
- Can be set to **Auto**, **AutoFrame**, or **Auto (no AutoFrame)** mode.
- Allows users to set the screen layout. When only one participant is speaking, the panoramic view is displayed in full-screen mode and the close-up of the speaker is displayed in a small window at a corner. When two participants are having a conversation, their close-up is displayed in two different panes. When no participant is speaking, the panoramic view is displayed in full-screen mode.

5.8 Multistream Conferencing

Multistream conferencing leverages the Scalable Video Coding (SVC) technology, with which the endpoint is responsible for video codec and continuous presence layout and the CloudMCU only forwards video streams at different resolutions or frame rates. In this way, the workload of the CloudMCU is relieved, the latency is reduced, and access of mass endpoints is made possible.

The CloudMCU can receive at most four channels of video streams at a resolution of 90p to 720p from endpoints, and a maximum of 16-channel video streams can be forwarded by the CloudMCU to endpoints. The resolution of the forwarded video streams depends on the actual bandwidth, and the maximum resolution is 720p.

5.9 Multiple Layouts

You can view the composite of video and content on one screen by adjusting the screen layout. In a data collaboration conference, video, content, and whiteboard can be simultaneously displayed on one screen.

The endpoint can be connected to three screens, which display different outputs from three HDMI ports.

Non-Multistream Conferencing

The following layouts are available:

- Full screen

  Video, content, or whiteboard is displayed in full-screen mode.
- Picture in Picture (PiP)

  The PiP mode includes one full-screen video and a small window that can be located at any of the four corners. By default, the small window lies in the upper right corner. In a video conference, the small window size is about 1/16 of the full screen size.
- Picture out Picture (PoP)

  Two or more panes are separately displayed on one screen.

Multistream Conferencing

The following layouts are available:

- Presenter view
  - When content sharing is in progress, shared content is displayed in the large pane.
  - When no content is shared, the large pane presents the speaker. A speaker can be configured to permanently stay in the large pane.
  - If a user chooses to broadcast or view a participant, the participant will be presented in the large pane.

- PiP view
  - When content sharing is in progress, shared content is displayed in the large pane. The small pane presents video of the broadcast participant, speaker, and other participants, in descending order of priority.
  - When no content is shared, the large pane presents the speaker. A speaker can be configured to permanently stay in the large pane. Video of other participants is displayed in the small pane.
  - If a user chooses to broadcast or view a participant, the participant will be presented in the large pane. The small pane presents shared content or video of other participants.
- Gallery view

  Video of participants and shared content are displayed in panes (16 at most) equivalently.

Figure 5-5 Video layouts

5.10 Strong Network Adaptability and High Security

- Leading technologies, including Super Error Concealment (SEC), Hybrid Automatic Repeat Request (HARQ), and automatic deceleration, are utilized to deliver clear and smooth video even when the packet loss rate reaches 20%.
- The Opus high-quality codec, Net Automatic Transfer-enhancement (netATE), and Audio Jitter Buffer (AJB) are supported to reduce the packet loss rate and improve audio quality.
- Bandwidth sharing is supported among video, content, and data in a meeting. This feature improves network utilization and delivers smooth HD video images.
- Huawei's proprietary Intelligent Rate Control (IRC) technology is used to automatically detect network service bandwidth occupation and intelligently select the optimal resolution based on the bandwidth to ensure high meeting quality.
- Various encryption measures are taken, such as SRTP, TLS, and HTTPS, ensuring secure and stable running of the video conferencing system.

5.11 Joining or Initiating a Meeting

Joining a Meeting

You can join a meeting from the **Next Meeting** popup box or by entering the meeting ID.

Initiating a Meeting

A meeting can be arranged using any of the following methods:

- Starting a meeting instantly

  You can start a meeting instantly through the Virtual Meeting Room (VMR) with just one click or through SiteCall. This function is applicable to the scenario where you have not scheduled any meetings but need to start a meeting right now. After a meeting is created, you can directly invite participants to the meeting by calling them. Alternatively, send the meeting ID to participants. They can then dial the meeting ID to join the meeting.
- Initiating a multipoint meeting

  Select multiple contacts to initiate a meeting and set parameters, such as the chairperson password and whether to encrypt the meeting.
- Initiating a point-to-point (P2P) meeting

  Enter keywords to search for a site, enter the site number or IP address, or directly select a site to place a call to the site.

5.12 Data Collaboration

- You can use the endpoint to join a data conference, then view the whiteboard, desktop, and annotation.
- Using the endpoint, you can share the desktop, but not make annotations or share the whiteboard.

5.13 Meeting Control

Both the chair participant and other participants in a meeting can control the meeting, but the operations they can perform are different, as listed in **Table 5-1**.

Table 5-1 Operations the chair participant and other participants can each perform

Role	Operation
Chair participant	• Inviting a participant • Deleting a disconnected participant • Redialing a participant • Disconnecting a participant • Muting or unmuting the microphone of a participant • Ending a meeting • Extending a meeting • Releasing the chairperson role • Setting continuous presence • Broadcasting a participant or continuous presence • Stopping broadcasting a participant or continuous presence • Viewing a participant or continuous presence • Giving the floor • Revoking the floor • Enabling or disabling voice activation • Locking a meeting • Unlocking a meeting • Broadcasting participants circularly in turn (available only on the web interface) • Viewing participants circularly in turn (available only on the web interface) • Locking the presentation sharing right for a meeting (available only on the web interface) • Stopping presentation sharing (available only on the web interface)

Role	Operation
Other participants	• Leaving a meeting • Viewing a participant or continuous presence • Applying for the chairperson role • Muting or unmuting the local microphone • Unmuting itself after being muted by the chairperson • Requesting the floor • Revoking the chairperson role (available only on the web interface) After the function of allowing common participants to perform meeting control is enabled, the following operations are allowed: • Inviting a participant • Redialing a participant • Extending a meeting

Figure 5-6 Meeting control on the Touch

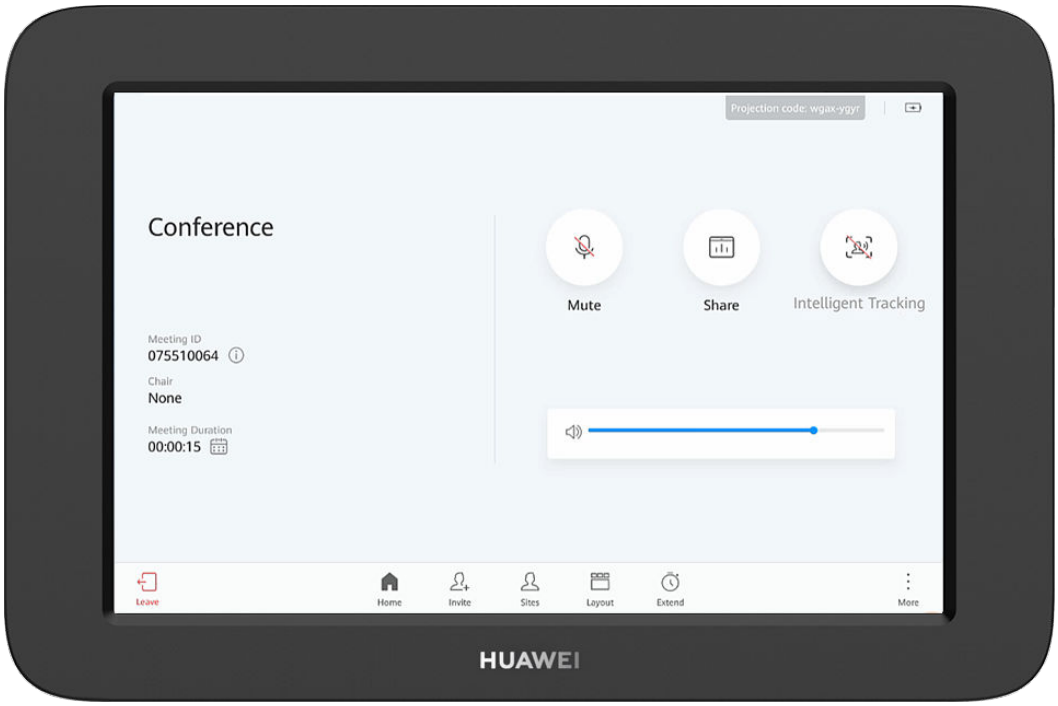
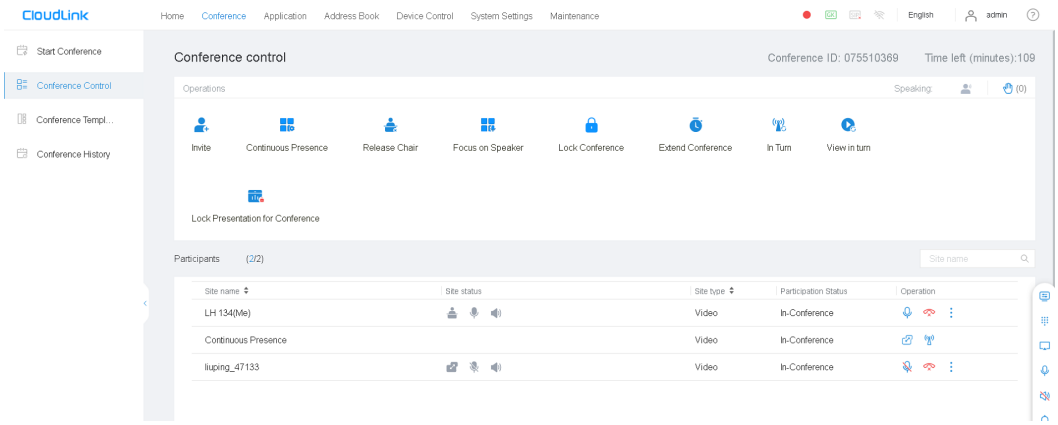


Figure 5-7 Meeting control on the web interface



5.14 Network Address Book

The network address book stores participant information. The endpoint can quickly obtain a participant's information from the network address book on the corporate directory or LDAP server.

The administrator can perform the following operations:

- Query, edit, and delete contacts on the web interface, sort contacts, add participants to the address book, and add groups. Contacts that are found from the LDAP address book server can be saved to the local address book, but those found from the corporate directory cannot.
- Update contacts in the local address book in batches by importing/exporting their information into/from the web interface.
- Initiate calls to participants or invite new participants to join a conference on the Touch or web interface.

5.15 Globalization

The endpoint, including its Touch and web interface, supports multiple languages and time zone settings. If some countries in the selected time zone use daylight saving time (DST), the endpoint automatically enables DST and changes its clock to comply with DST.

All GUIs of the endpoint support the following languages: Simplified Chinese, Traditional Chinese, English, Spanish (Europe), French, Russian, Japanese, German, and Portuguese (Brazil).

5.16 Wireless Connections

The endpoint supports 2 x 2 Wi-Fi technology (that is, 2-channel input and 2-channel output of Wi-Fi data), dual antennas, and dual bands (2.4 GHz and 5 GHz). The endpoint can serve as a Wi-Fi hotspot and connect to a Wi-Fi network as a client at the same time.

If the endpoint is configured as a client, it automatically detects and connects to Wi-Fi networks. You can set the endpoint IP address in DHCP or static mode. This

function applies to the scenarios in which no wired network is available and you need to connect the endpoint to the network through Wi-Fi.

When the endpoint has its Wi-Fi hotspot enabled, it can serve as a hotspot for connecting other devices (such as a PC) to Wi-Fi.

5.17 OAM

5.17.1 Automatic Configuration

Zero Configuration

The endpoint can automatically obtain the type of the connected cloud platform or server. You only need to set the endpoint and server IP addresses or enter the activation code to fast complete the endpoint configuration.

Configuration Using a USB Device

You can obtain a USB device with a configuration file from the agent or carrier, and then import the configuration file to the endpoint through the USB device. In this way, the configuration is automatically completed at a high efficiency.

5.17.2 Connection to eSight

The endpoint can be managed by eSight if it is connected to eSight.

- On eSight, you can perform many endpoint-related tasks, including query and set parameters, upload and download configuration files, upgrade and restart the endpoint, manage public and private networks, collect logs, and upload Call History Records (CHRs) data files.
- You can download CA certificates and server certificates from eSight and import them into the endpoint in batches.
- HTTPS-based bidirectional authentication is used for establishing a connection between the endpoint and eSight, enhancing communications security.

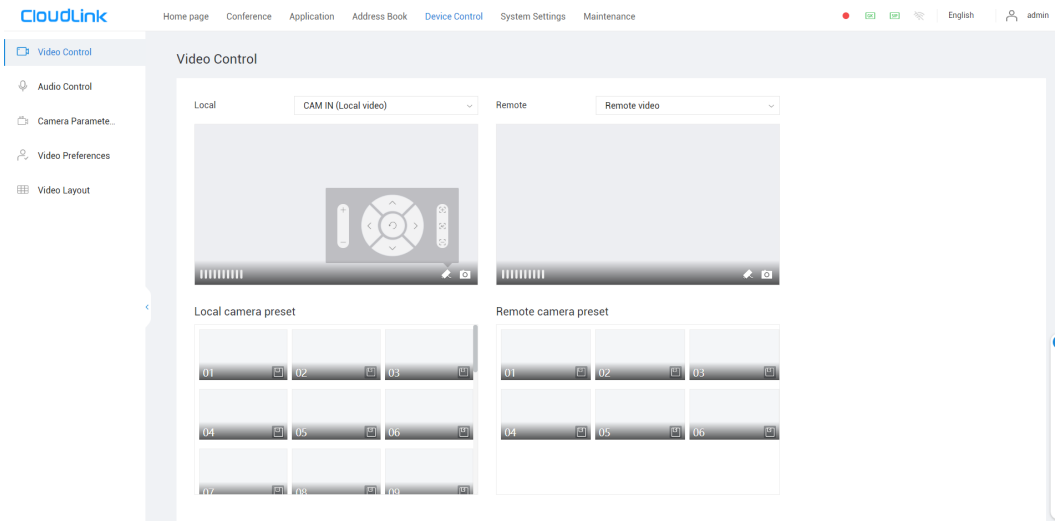
5.17.3 Customizing a Boot Screen and Changing a Wallpaper

- You can replace the customized boot screen and logo using the upgrade tool to meet personalized requirements.
- You can change the wallpapers of the home screens of the Touch and display through the Touch or web interface.

5.18 Web-based Monitoring

After the web-based monitoring function is enabled on the Touch, you can log in to the web interface to view the local and remote video in real time during a meeting, as shown in **Figure 5-8**.

Figure 5-8 Viewing local and remote video



CAUTION

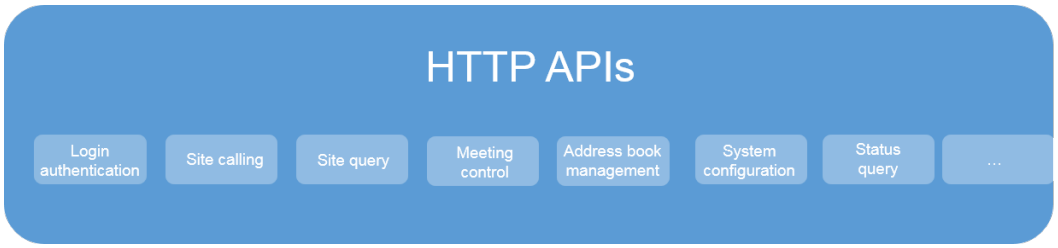
This function involves personal privacy. Ensure that its use complies with local laws and regulations.

5.19 APIs for Third-Party Integration

The endpoint provides HTTP-compliant third-party APIs to implement various functions, including login authentication, site calling, site query, meeting control, address book management, system configuration, and status query, as shown in **Figure 5-9**.

Users can choose necessary APIs based on their actual needs to develop required functions and integrate them into other products or applications.

Figure 5-9 Functions implemented through HTTP APIs



6 Security and Reliability

6.1 Operating System Security

Security maintenance for the system layer ensures that the operating system runs smoothly and also supports stable services at the application layer. The Touch uses a customized Android operating system, which delivers enhanced security and immunity to viruses.

6.2 Network Layer Security

The network layer security policies for the CloudVC on-premises network are as follows:

- The endpoint, SMC, and MCU are deployed in the trusted zone, isolated from the Demilitarized Zone (DMZ) and the untrusted zone. Furthermore, firewalls are deployed for security domain division and access control.
- Terminals in the untrusted zone communicate with NEs in the trusted zone through the Switch Center (SC) in the DMZ.

6.3 Firewall Technology (NAT)

The firewall protects your IP network by separating the internal and external network communication data. Using Network Address Translation (NAT) technology and signaling exchange between public network protocols and private network protocols, the firewall enables participants on local area networks (LANs) in different places to make use of video conferences. With NAT, a device on a LAN is allocated a dedicated internal IP address that uniquely identifies the device on the LAN, and the device uses an external IP address to communicate with external devices. Through NAT mapping, multiple internal IP addresses are mapped to one external IP address. NAT mapping not only reduces the number of IP addresses that are needed for users on a private network to access the Internet, but also enhances the security of the private network.

6.4 Traversal Between Public and Private Networks

The media latching and standard H.460 traversal technology are used to set up secure video call connections between public and private networks and between private networks through the firewall.

6.5 Email Security

To ensure the security of email accounts and sent emails, the STARTTLS protocol is used by default to authenticate the mail server and send encrypted emails.

6.6 Web Request Authentication

- When a user requests access to a specified web page or submits a Servlet request, the endpoint checks whether the user's session identifier is valid and whether the user is authorized to perform the operation.
- The server implements the final authentication on the user.
- Before transmitting user-generated data to clients, the server verifies the data and encodes it using HyperText Markup Language (HTML) to prevent malicious code injection and cross-site scripting attacks.
- Web security software is used to scan the web server and applications to ensure that there are no high-risk vulnerabilities.

6.7 Protocol Anti-Attack Measures

- The communication matrix is provided in the product documentation. Do not enable the services and ports that are not described in the communication matrix.

  The communication matrix contains the following information:

  - Open ports
  - Transport layer protocols used by the ports
  - NEs that use the ports to communicate with peer NEs
  - Application layer protocols used by the ports and description of the services at the application layer
  - Whether services at the application layer can be disabled
  - Authentication modes adopted by the ports
  - Port functions (such as data traffic control)
- To ensure the security and stability of the video conferencing system, the endpoint utilizes multiple encryption measures, including H.235 (for encryption of media and signaling streams), SRTP, TLS, and HTTPS.
- For network management, the endpoint supports the SNMP v3 protocol, which features higher adaptability and security. User names and passwords are needed to connect the network management system to the endpoint.
- Robustness testing tools are used to scan protocols to ensure that there are no high-risk vulnerabilities.

- By default, the LDAP over SSL (LDAPS) protocol is used to encrypt the address book, ensuring data integrity and preventing data from being stolen.

6.8 Protection of Sensitive Data

- The log, diagnostics, debug, and alarm information do not contain sensitive data such as passwords and ciphering contexts. If sensitive data is included, it is displayed as "***".
- Sensitive data is transmitted only through secure channels or after being encrypted.
- In the collaborative application scenario, the uPortal uses the root certificate for authentication through HTTPS to protect sensitive information such as accounts and passwords.
- The endpoint checks the complexity of passwords. When a password is being entered, each stroke is displayed as "." or "*", and the entered password cannot be copied.
- Only standard encryption algorithms and key negotiation mechanisms are used. Proprietary algorithms are not allowed.

6.9 Protection of AI Voice Commands

The AI voice commands collected by the endpoint are parsed on itself and destroyed immediately after being parsed. The endpoint does not store any information and forbids any access or acquisition to the information.

6.10 System Management and Maintenance Security

- Software packages (including patches) are released only after they are scanned by at least five types of mainstream antivirus software and no issues are detected. In special cases, explanation is provided for alarms.
- All user operations and system exceptions are logged.
- A two-level certificate chain is supported to ensure the transmission security of confidential data.

6.11 Security Design

- The non-metal parts of the exterior use the V1 flame retardant (FR) materials.
- The component security design meets the requirements of the nine countries in the EU, North America, Australia, Canada, and the Middle East, as well as China. The components of mechanical parts comply with the EU Machinery Directive 2006/42/EC.
- Labels and security tips are used.

6.12 Disaster Recovery

The endpoint can simultaneously connect to the active and standby corporate directories or SCs for disaster recovery (DR). When the active corporate directory or SC is faulty, the endpoint automatically switches to the standby corporate directory or SC to continue providing services.

6.13 Secure Startup

The endpoint supports secure startup. During the startup process, the integrity of the U-Boot, kernel, and application software is verified level by level to ensure that all software running on the endpoint is valid, thereby ensuring reliable and secure running of the endpoint.

7 Operations and Maintenance

7.1 GUIs

7.1.1 Touch UI

The HUAWEI Touch, a 10-inch touch panel, provides a user-friendly UI where you can easily use meeting functions through several taps, including:

- Joining a scheduled meeting
- Starting a conference
- Creating a conference
- Sharing content
- Setting continuous presence
- Performing meeting control
- Enabling intelligent tracking (VPT300 required)
- Defining system settings
- Controlling the microphone, loudspeaker, local camera, and remote camera
- Conducting diagnostics, changing the wallpaper, and configuring and sending captions

Figure 7-1 Home screen of the Touch

7.1.2 IdeaShare UI

IdeaShare is a wireless projection client designed for the endpoint. It can be installed on a PC or Android mobile device.

Figure 7-2 IdeaShare mobile client

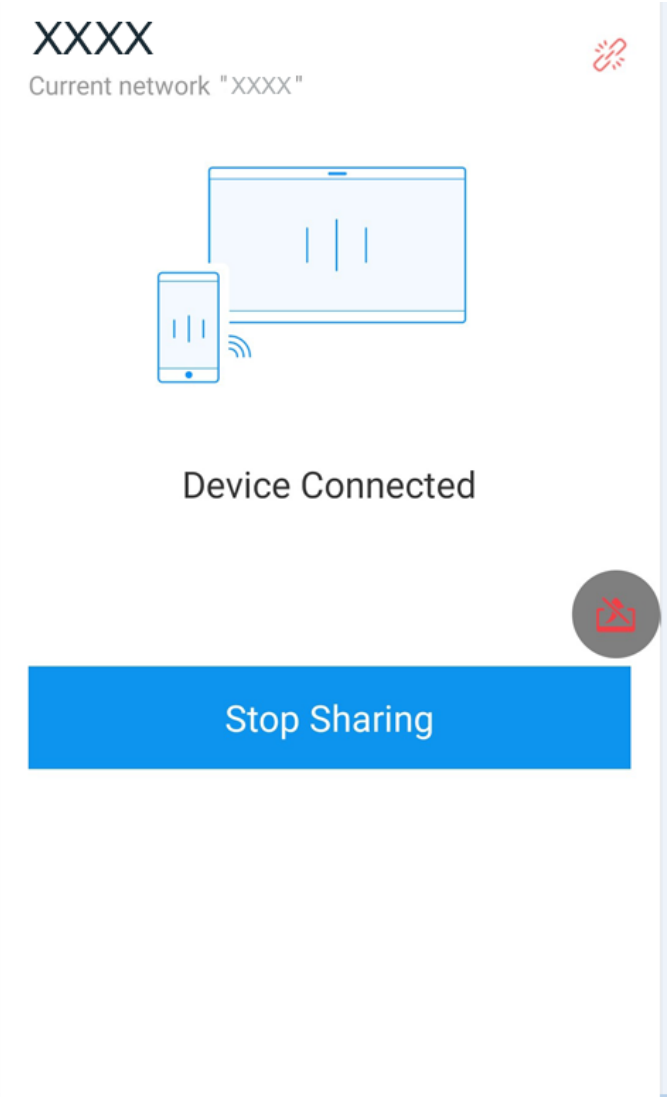
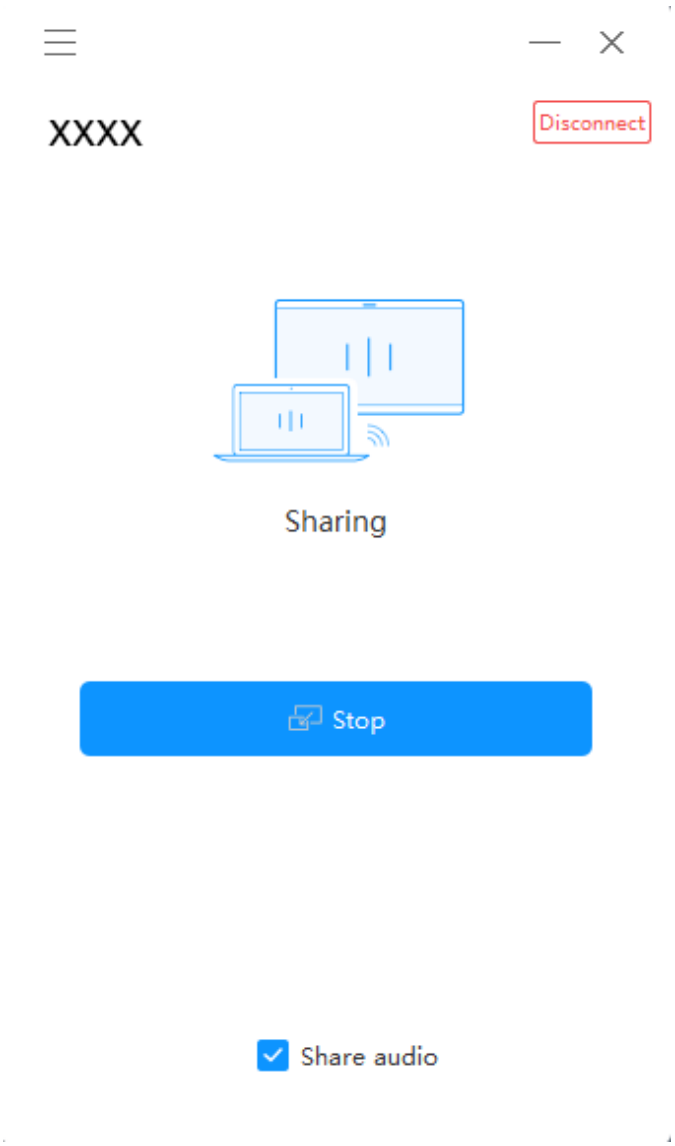


Figure 7-3 IdeaShare PC client



7.1.3 Web Interface

The endpoint can be remotely operated by the administrator from its web interface. The web interface allows simultaneous operations from up to 10 users through the same account. However, only the last operation takes effect.

The main functions available on the web interface are as follows:

- Configuring the address book
- Modifying system settings
- Configuring and sending caption
- Configuring the intelligent voice assistant
- Configuring the voice tracking function (VPT300 required)
- Performing system maintenance

- Placing calls and controlling meetings

7.2 Maintenance and Upgrade

7.2.1 Log Management

The endpoint records logs about user operations and system exceptions, helping the administrator maintain the system and locate faults.

Logs are stored as files. On the web interface of the endpoint, the administrator can query, export, or delete logs of a specified time frame or all logs.

7.2.2 Diagnostics

The endpoint can detect the hardware running status, network connections, audio input/output, video input/output, common parameter settings, and server registration status to help users locate faults.

7.2.3 Inspection

The endpoint can be inspected using the SMC2.0 and eSight. You can:

- Check the status of IP lines.
- Check the system software version.
- Check the system performance, including the temperature and fan status.
- Check the registration status.
  - SMC2.0: Check the H.323 and SIP registration status.
  - eSight: Check the SIP registration status.
- Check the camera control status.
- Check the content source connection status and input port settings.
- Check the video input cable connection status and video input port settings.
- Continue inspection after the endpoint restarts or ends a call.
- Report the inspection status and result to the SMC2.0.

7.2.4 Upgrade

You can upgrade the endpoint to the latest version to fix its vulnerabilities and use the new functions provided in the latest version.

- You can manually upgrade the endpoint using the upgrade tool or web interface.
- The endpoint can be first restored to factory defaults and then upgraded.
- The endpoint supports silent upgrade mode, in which the endpoint is upgraded at a scheduled time without affecting services.
- Endpoints can be upgraded in batches.
- The endpoint upgrade can be paused and resumed.
- Any endpoint connected to eSight can be upgraded using eSight.

- As a manageable device, the endpoint can be upgraded using the SMC2.0. If multiple endpoints exist, they can be upgraded in batches from the SMC2.0.
- The VPC600, VPC620, VPC800, and VPT300 used with the endpoint can be upgraded using the upgrade tool.

7.3 CHR Data Collection

After connecting to eSight, the endpoint can send its session and media CHR files to eSight. SessionInsight obtains CHR data files from eSight and analyzes them to quickly locate faults.

8 Technical Specifications

8.1 Physical Specifications

Table 8-1 Physical specifications

Item	Specifications
Electricity supply requirements	
Operating voltage	100–240 V AC
Operating frequency	50–60 Hz
Maximum power consumption	150W
Environmental requirements (in use)	
Ambient temperature	Endpoint: 0°C to 40°C (32°F to 104°F) Touch: 0°C to 35°C (32°F to 95°F)
Relative humidity	5% to 95%
EMC	Class A
Operating altitude	< 5000 m (16404 ft)
Ambient noise	< 46 dBA SPL
Environmental requirements (idle)	
Ambient temperature	–40°C to +70°C (–40°F to +158°F)
Relative humidity (non-condensing)	0% to 95%
Dimensions and weight	

Item	Specifications
Device dimensions (H x W x D)	58 mm x 442 mm x 285 mm (2.28 in. x 17.40 in. x 11.22 in.)
Package dimensions (H x W x D)	265 mm x 580 mm x 380 mm (10.43 in. x 22.83 in. x 14.96 in.)
Net weight	4.2kg
Gross weight	7.9kg
Wi-Fi	
Frequency bands	2.4 GHz and 5 GHz
Working frequency ranges (endpoint)	2.4 GHz: 2400 MHz to 2483.5 MHz 5 GHz: 5150 MHz to 5250 MHz
Working frequency ranges (Touch)	2.4 GHz: 2400 MHz to 2473.5 MHz 5 GHz: 5150 MHz to 5250 MHz
Maximum transmission power	< 20 dBm
Working range in an environment without barriers	Maximum: 20 m (65.6 ft) Recommended: 10 m (32.8 ft)
Peripherals	
Microphone	Up to two VPM220s or Mic 500s can be connected.
Camera	The Camera 200, VPC600, VPC620, VPC800, and VPT300 are supported.

8.2 Performance Specifications

Table 8-2 Performance specifications

Item	Specifications
Call bandwidth	64 kbit/s to 8 Mbit/s

Item	Specifications
Video capabilities (H.264)	Minimum bandwidth required to deliver video of a specific resolution (without any packet loss): ● 1 Mbit/s for 1080p 60 fps ● 512 kbit/s for 1080p 30 fps ● 768 kbit/s for 720p 60 fps ● 384 kbit/s for 720p 30 fps ● 128 kbit/s for 4SIF/4CIF 30 fps ● 64 kbit/s for SIF/CIF/QSIF/QCIF/SQSIF/SQCIF 30 fps
Video capabilities (H.265)	Minimum bandwidth required to deliver video of a specific resolution (without any packet loss): ● 2 Mbit/s for 4K 30 fps ● 768 kbit/s for 1080p 60 fps ● 384 kbit/s for 1080p 30 fps ● 512 kbit/s for 720p 60 fps ● 256 kbit/s for 720p 30 fps
Content sharing capabilities	● Content sharing over a wireless connection In a local meeting: – IdeaShare mobile client (Android operating system): up to 1080p 15 fps – IdeaShare PC client (Windows): up to 4K 15 fps ● Content sharing over a cable connection Input resolution (HDMI): 3840 x 2160 25/30 fps, 1920 x 1200 60 fps, 1920 x 1080 24/25/30/50/60 fps, 1680 x 1050 60 fps, 1600 x 1200 60 fps, 1600 x 900 60 fps, 1400 x 1050 60 fps, 1440 x 900 60 fps, 1366 x 768 60 fps, 1360 x 768 60 fps, 1280 x 1024 60/75/85 fps, 1280 x 960 60/75/85 fps, 1280 x 800 60/75/85 fps, 1280 x 768 60/75/85 fps, 1280 x 720 60/75/85 fps, 1280 x 600 60 fps, 1152 x 864 60/75/85 fps, 1024 x 768 60/70/75/85 fps, 800 x 600 56/60/72/75/85 fps, 640 x 480 60/72/75/85 fps Codec resolution: CIF (352 x 288), 640 x 480, 4CIF (704 x 576), 800 x 600, 1024 x 768, 720p (1280 x 720), 1280 x 1024, 448p (768 x 448), 1080p (1920 x 1080), 1600 x 1200, 1920 x 1200, 1152 x 864, 1280 x 600, 1280 x 768, 1280 x 800, 1280 x 960, 1360 x 768, 1366 x 768, 1440 x 900, 1400 x 1050, 1600 x 900, 1680 x 1050, 2048 x 1152, 2048 x 1236, 2048 x 1536, 2048 x 1556, 2560 x 1440, 2560 x 1600, 2560 x 2048, 2880 x 1620, 2880 x 1800, 3200 x 1800, 4K (3840 x 2160) Output resolution: 1920 x 1080 and 3840 x 2160

Item	Specifications
Dual-stream (video + content) capabilities	Video conferencing: 1080p 30 fps + 1080p 30 fps, 1080p 30 fps + 4K 8 fps, 1080p 60 fps+1080p 60 fps, 1080p 60 fps + 4K 15 fps, or 4K 30 fps + 4K 30 fps Data conferencing: 1080p 30 fps, 4K 8 fps
Operating system and hardware requirements for IdeaShare mobile client installation	Android 5.0 or later, CPU with the ARMv7 Neon chip or above, dominant frequency of 1.5 GHz or above, memory of 1 GB or above
Operating system requirements for IdeaShare PC client installation	32-bit or 64-bit Windows 7, 8, 8.1 or 10
Recommended distance away from the microphone when you are using the voice assistant	If the microphone is VPM200/Mic 500, the distance cannot exceed 1 m. If a gooseneck microphone is used, the recommended distance is within 0.5 m.

8.3 Ports and Protocols

Table 8-3 Ports and protocols

Port	Description and Quantity	Standards and Protocols Compliance	Remarks
Video input ports	• 3 x HDMI (4K 30 fps, audio input supported) • 1 x HT-RX (4K 30 fps)	HDMI 1.4	• Users can select any display mode for video input. • The HT-RX port supports video input within 50 m or less.
Video output ports	• 2 x HDMI (4K 60 fps, audio output supported) • 1 x HDMI (1080p 60 fps, audio output supported)	HDMI 1.4/2.0	-
Audio input ports	• 1 x XLR connector • 2 x RCA • 1 x HD-AI (level 2) • 3 x HDMI (audio input supported)	-	Up to two VPM220s or Mic 500s can be connected.
Audio output ports	• 4 x RCA • 3 x HDMI (audio output supported)	-	-
USB ports	• 2 x USB 2.0 Type-A	USB 2.0	-
Network ports	• 2 x 10/100/1000 Mbit/s LAN • 1 x PoE (Touch) • 2 x RJ45 serial port	-	-
Wireless ports	1 x Wi-Fi (built-in)	-	-
Ground stud	1 x ground stud	-	-

Port	Description and Quantity	Standards and Protocols Compliance	Remarks
Power input port	1 x power input port	-	-

8.4 Standards Compliance

Table 8-4 Standards compliance

Item	Standards
Video encoding and decoding protocols	H.265, H.265 Screen Content Coding (SCC), H.264 HP, H.264 BP, H.264 SVC, H.263, and H.263+
Audio encoding and decoding protocols	AAC-LD (mono/stereo), G.711A, G.711U, G.722, G.722.1C, G.729A, and Opus
Multimedia framework protocols	ITU-T H.323 and IETF SIP
Data conference	Data conference 1.0/2.0
Dual-stream protocols	ITU-T H.239 and Binary Floor Control Protocol (BFCP)
Network transmission protocols	TCP/IP, RTP, RTCP, DHCP, DNS, SMTP, SNMP, SNTP, Telnet, SSH, HTTP, HTTPS, and TR-069
Other communications protocols	H.225, H.235, H.241, H.245, H.281, H.350, H.460, RFC2833, LDAP, and LDAPS
IP protocol	IPv4 and IPv6 dual stack
Encryption protocols	Chinese cryptographic algorithm, H.235, STARTTLS, TLS, and SRTP
Wi-Fi standards	IEEE 802.11 a/b/g/n/ac, IEEE 802.1p/q, IEEE 802.1x, WEP, WPA, WPA2, and WPS

8.5 HEVC Authorization

A Glossary

Numerics	
4CIF	4 x Common Inediate Format A video resolution of 704 x 576 pixels.
4SIF	4 x Source Input Format A video format with a resolution of 704 x 480 pixels that uses progressive scanning.
A	
AAC	Advanced Audio Coding
AEC	Acoustic Echo Cancellation
AGC	Automatic Gain Control
AI	Artificial Intelligence
AJB	Audio Jitter Buffer
ANS	Automatic Noise Suppression
API	Application Programming Interface A particular set of rules and specifications that are used for communication between software programs.
AutoFrame	Based on the number, location, and motion of participants, this function automatically adjusts the camera to provide a dynamic overview of the full room.
Address Book	Stores the information of remote participants, including the IP address, number, type, and bandwidth.
C	
CHR	Call History Record
CIF	Common Intermediate Format

CPE	Customer Premises Equipment Any terminal and associated equipment located at a subscriber's premises and connected with a carrier's telecommunication channel at the demarcation point.
CSCF	Call Session Control Function The core component of the IMS network. It performs the functions such as registration, authentication, session control, service triggering, topology hiding, QoS control, NAT traversal, and security management.
D	
DMZ	demilitarized zone A buffer area between an insecure system and the secure system and is used to solve the problem of an external network being unable to access an internal network equipped with a firewall. The DMZ is located between the internal network and the external network. The DMZ contains some public server facilities, such as the enterprise Web server and FTP server. The DMZ protects the internal network.
DNS	Domain Name System A mechanism that maps easy-to-remember domain names to IP addresses recognizable for network devices.
DVI	Digital Visual Interface
DVI-I	Digital Visual Interface-Integrated
E	
EUA	Enterprise Unified Address Book A next-generation address book server launched by Huawei. It provides LDAP-based unified address book services for Huawei videoconferencing and enterprise communication solutions.
G	
G.722	Audio codec standard that uses adaptive differential pulse-code modulation (ADPCM). Its data rate is 48 kbit/s, 56 kbit/s, or 64 kbit/s.
G.728	Audio codec standard that uses low-delay code excited linear prediction (LD-CELP). Its data rate is 16 kbit/s.
H	
H.239	A standard recommended by ITU-T. It enables a video conference to simultaneously transmit both video and data content (for example, computer desktop).

H.263	A video codec standard for video conferences at low rates. Five formats are available: SQCIF, QCIF, CIF, 4CIF, and 16CIF.
H.264	Compared with H.263, H.264 can provide the same-quality video at half of the bit rate, with strong error resilience.
HD	High Definition
HDMI	High Definition Multimedia Interface
HTTP	Hypertext Transfer Protocol
HTTPS	Hypertext Transfer Protocol over Secure Sockets Layer An HTTP protocol that runs over transport layer security (TLS) and Secure Sockets Layer (SSL) for secured transactions. It is used to establish a reliable channel for encrypted communication and secure identification of a network web server.
loopback test	The terminal can transmit audio or video data on a channel to simulate the actual application and test whether the output is satisfactory. A user can perform a local loopback test to check the local network connection or a remote loopback test to check the remote network connection. If a remote loopback test is performed, data is transmitted from the local site to a remote site, and then back to the local site.
I	
IMS	IP multimedia subsystem
IWB	interactive whiteboard
initiate call	To initiate a call is a process where the calling party dials the called party's alias or IP address to set up a call and exchange audiovisual information with the called party.
L	
LAN	Local Area Network
LCD	Liquid Crystal Display
LDAP	Lightweight Directory Access Protocol A network protocol based on TCP/IP, which allows access to a directory system agent (DSA). It involves some reduced functionality from X.500 Directory Access Protocol (DAP) specifications.
M	
MediaX	Media Switch Server
media stream	Data stream (such as audio, video and fax) between different bearer networks.
N	

netATE	Net Automatic Transfer-enhancement
P	
PPPoE	Point-to-Point Protocol over Ethernet
Q	
HD display	An HD plasma TV that is used to display the video from a telepresence codec.
R	
RSE	Recording & Streaming Engine
RTCP	Real-Time Transport Control Protocol A protocol used to monitor data delivery. RTCP enables the receiver to detect if there is any packet loss and to compensate for any delay jitter.
S	
SBC	Session Border Control
SEC	Super Error Concealment
SIF	Source Input Format
SIP	Session Initiation Protocol
SMC	Service Management Center A videoconferencing service management system that manages videoconferencing devices (including GKs, MCUs, and participant endpoints) and allocates videoconferencing resources.
SP	service provider A system that provides services to users. In IAM, the SP for federated identity authentication is the public cloud system.
SRTP	Secure Real-time Transport Protocol A real time transport protocol with enhanced security and encryption mechanism-based RTP.

SSH	Secure Shell A network security protocol formulated by the IETF's Network Working Group on the basis of the application layer to implement secure remote login and other secure network services. The use of SSH can effectively prevent information leakage during remote management. It is initially a program in the Unix operating system and adopted by other operating platforms soon. SSH can fix vulnerabilities on the network when it is used correctly. The SSH client is applicable to multiple platforms. SSH can run on almost all UNIX platforms, including HP-UX, Linux, AIX, Solaris, Digital UNIX, Irix, and other platforms.
STG	Security Traversing Gateway
STUN	Simple Traversal of UDP through NAT
SVC	Scalable Video Coding
SVGA	Super Video Graphics Array
power on	To start up a computer; to begin a cold boot procedure; to turn on the power
sound pickup distance	The maximum distance within which sounds can be picked up by a microphone.
dual-stream	During a conference, two channels of video streams can be sent or received simultaneously. One channel is used for transmitting video (such as the video captured by a camera) and the other channel is used for transmitting content (such as a computer desktop).
T	
TCP/IP	Transmission Control Protocol/Internet Protocol
TLS	Transport Layer Security
V	
VGA	Video Graphics Array
VMR	Virtual Meeting Room
VTS	Versatile Tools Suite
W	
WPA	Wi-Fi Protected Access A wireless security protocol replacing WEP and aiming to provide stronger security for the IEEE 802.11 WLAN. WPA is a subset of IEEE 802.11i, whose core is IEEE 802.1x and TKIP.

Wi-Fi	Wireless Fidelity A short-distance wireless transmission technology. It enables wireless access to the Internet within a range of hundreds of feet wide.
Switch Center	A Switch Center (SC) is Huawei's new-generation network switch system that provides H.323 GK, SIP server, and media proxy functions.
X	
XGA	Extended Graphics Array
Y	
schedule conference	Specify the start time and duration of a conference. Then the system schedules the conference automatically.
Z	
telepresence	The Huawei telepresence system provides users with a comfortable video conferencing environment in which they can have true-to-life and face to face remote conferences.
Endpoint	A device that converts voice, sound, text, image, table, data and video from physical display to electronic signals or from electronic signals to physical display. A terminal generates and sends signals (such as telecommunications circuit setup or release) that maintain the normal running state of the telecommunications network, and it receives the call signals of telecommunications switch and transmission.
chair site	A site that has chair control rights.
caption	Text information that appears on video. During a conference, a site can add captions to the video sent by the local site. Users can add captions to the top, middle, and bottom areas of the screen.