



Building a Fully Connected, Intelligent World

CloudLink Box 310/610

Ultra-HD Video Conferencing Endpoint



HUAWEI CloudLink Collaborative Telepresence Endpoints
Eliminate Time and Space Limitations | Connect Teams | Ignite Creativity

Ultra-HD Video Conferencing Endpoint

HUAWEI CloudLink Box 310 and CloudLink Box 610 are next-gen ultra-HD video conferencing endpoints built on Huawei's proprietary core technologies and high-computing hardware platform architecture. The Box 310 and Box 610 are equipped with H.265 4K dual-stream audio and video media processing capabilities and extensive audiovisual ports. It is compatible with a variety of cameras and display devices for meeting rooms of all sizes.



CloudLink Box 310/610

Ultimate Performance. Unlimited Scalability.



Next-gen hardware platform with independent core technologies



4K 30 fps video + content, H.265 encoding and decoding



An extensive range of ports for fast integration in meeting rooms

Highlights



Security and Reliability

- Huawei's proprietary core technologies and high-computing hardware platform architecture for powerful performance
- Invisible watermarks embedded seamlessly into conference audio; anti-attack watermark extraction for audio leakage tracing
- One certificate for one endpoint, preventing device hijacking and spoofing
- End-to-end encryption and media and signaling encryption measures, such as H.235 and SRTP/TLS, ensuring meeting



Professional-Grade Ultra-HD

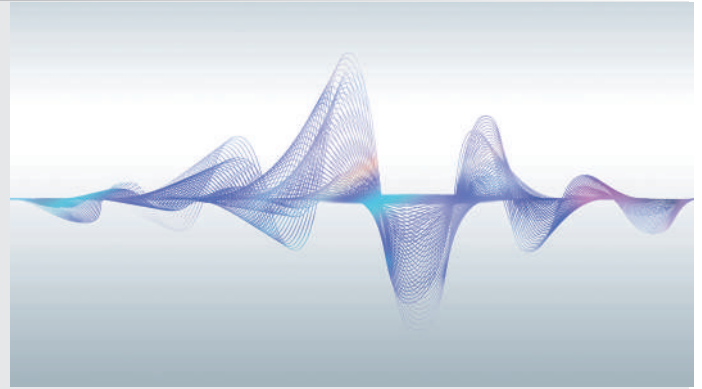


- H.265 hardware codec + Huawei's proprietary video motion enhancement (VME) technology, effectively removing noises from moving images and delivering 4K ultra-HD videos with natural colors
- H.265 4K multistream conferences, enabling endpoints to encode and decode multiple channels of video streams in different formats at the same time and allowing users to flexibly adjust the continuous presence layout and view any site
- Powerful network adaptability and 30% video packet loss concealment



Hi-Fi Audio

- Supreme audio built on acoustic echo cancellation (AEC), automatic noise gain (ANG), and automatic gain control (AGC)
- Audio multistreaming, enabling endpoints to decode multiple channels of audio streams at the same time, mix them, and output them, to reduce platform resource consumption
- Opus+NetATE+AJB for clear and smooth voice even when the packet loss rate reaches 80%
- Omnidirectional microphone cascading, enhancing long-distance sound pickup



Remote Sharing



- 4K remote sharing with ultra-HD content
- Wired and wireless projection modes
- One-tap wireless sharing from a PC or mobile phone, avoiding complex cabling



Flexible Adaptation

- Mainstream audio and video ports, which can be connected to the microphone array, loudspeaker, projector, and LCD/LED large-screen display device
- All-in-one HT-RX port integrates video transmission, camera control, and power supply with up to 100-meter long-distance connection



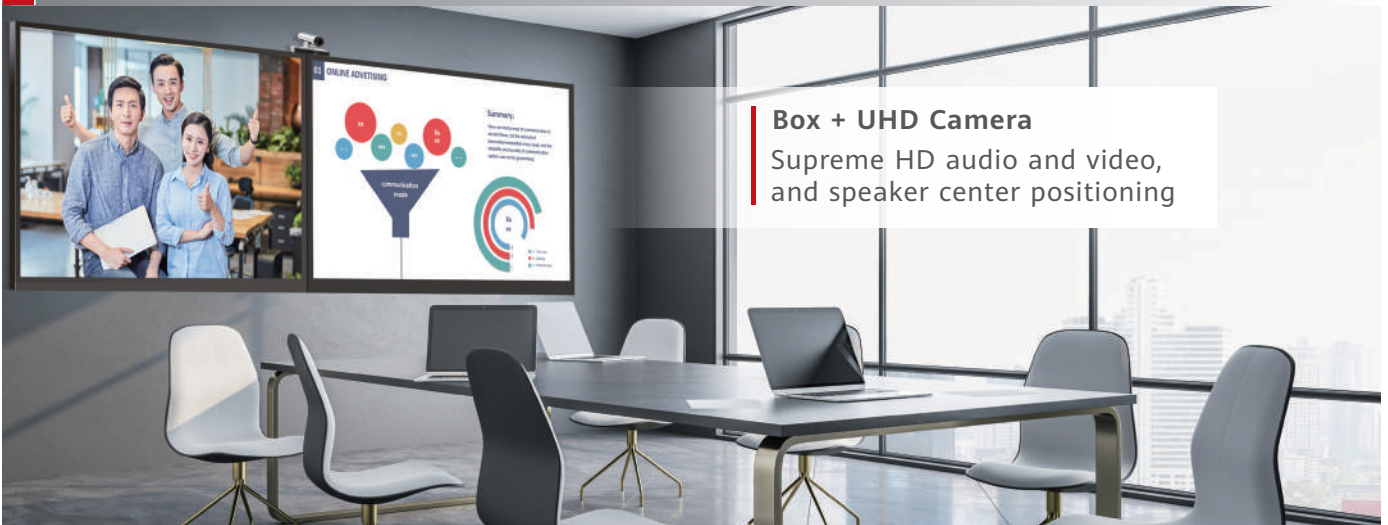
Easy Operations



- A 10.1-inch Touch is available, which is stylish and easy to use
- User-friendly GUI
- PoE power supply and a Kensington security slot

Flexible Application Scenarios

Business Meeting Room



Box + UHD Camera

Supreme HD audio and video,
and speaker center positioning

Lecture Hall



Box + 4K camera + Large screen

Present every detail perfectly
in large conference rooms

Administrative Meeting Room



Box + VPT300

Locate speakers accurately and
present their close-up

Features and Functions

Ultra-HD video

- H.265-based encoding and decoding for both video and content delivers 4K UHD video effects with breathtaking colors for an immersive meeting experience.
- Intelligent face detection and backend image processing enhance light adaptability and reduce bandwidth consumption, providing quality image definition and motion enhancement.

Hi-Fi audio

- Acoustic Echo Cancellation (AEC), Automatic Noise Suppression (ANS), Automatic Gain Control (AGC), VoiceClear, AudioEnhancer, and lip synchronization.

Intelligent content sharing

- Wired and wireless presentation
- 4K ultra-HD content sharing

Multistream conferencing

- With the H.265 4K multistream video capability of the product, users can adjust the continuous presence layout and seamlessly view any participant. In addition, platform resource consumption and video conference delay are minimized, allowing for the access of a large number of endpoints.
- The multistream audio capability enables the endpoint to adapt to multiple sampling rates and decode multiple audio streams concurrently and mix them for output, effectively reducing platform resource consumption.

Convenient control

- 10.1-inch touch panel supports PoE power supply with user-friendly GUI.
- BYOM (Bring Your Own Meeting)

Multiple layouts

- Video and content can be displayed on one screen, but in different panes.

Network adaptability

- Super Error Concealment (SEC) and Hybrid Automatic Repeat Request (HARQ) retransmission deliver clear and smooth video even when the packet loss rate reaches 30%.
- Opus ensures clear and smooth audio even when the audio packet loss rate reaches 80%.
- Forward Error Correction (FEC), Backward Error Correction (BEC), Packet Loss Concealment (PLC), Net Automatic Transfer-Enhancement (netATE), and Audio Jitter Buffer (AJB).

Independent core technologies

- Audio watermarks are seamlessly embedded into every frame of the audio data, with the watermark field being the site number. In cases where there is no site number available, the watermark field is replaced by the IP address. If the conference audio is recorded and shared without authorization, the intercepted audio clip can be analyzed to extract the watermarks and trace the source of the leakage.
- Each device is equipped with one certificate preset during manufacturing, effectively preventing spoofing and hijacking.

Independent core technologies

- Huawei's proprietary core technologies and high-computing hardware platform architecture for powerful performance.
- Core audiovisual technologies: audio and video capability enhancement, H.264/H.265/super-resolution technology, QoS network optimization technology, anti-feedback technology, and active noise suppression algorithm.

Openness

- Open APIs for third-party integration

Specifications

Components

Ultra-HD codec, ultra-HD camera (optional), microphone array (optional), Touch panel, cables, and power adapter

Communications Protocols

Multimedia frame protocols	ITU-T H.323 and IETF SIP
Video codec protocols	H.265, H.265 SVC, H.264 HP, H.264 BP, H.264 SVC, H.263, H.263+
Audio codec protocols	G.711A, G.711U, G.722, G.722.1C, G.729A, G.719, AAC-LD, and Opus
Dual-stream protocols	ITU-T H.239, IETF BFCP
Other communication protocols	H.225, H.235, H.241, H.245, H.350, H.460, RFC2833, LDAP
Network transmission protocols	TCP/IP, RTP, RTCP, DHCP, DNS, SMTP, SNMP, SNTP, SSH, HTTP, HTTPS and TR-069

Video Features

Presentation resolution	<ul style="list-style-type: none">HDMI input: 640 x 480 60/72/75/85 fps, 800 x 600 56/60/72/75/85 fps, 1024 x 768 60/70/75/85 fps, 1152 x 864 60/75/85 fps, 1280 x 600 60 fps, 1280 x 720 60/75/85 fps, 1280 x 768 60/75/85 fps, 1280 x 800 60/75/85 fps, 1280 x 960 60/75/85 fps, 1280 x 1024 60/75/85 fps, 1360 x 768 60 fps, 1366 x 768 60 fps, 1440 x 900 60 fps, 1400 x 1050 60 fps, 1600 x 900 60 fps, 1600 x 1200 60 fps, 1680 x 1050 60 fps, 1920 x 1080 24/25/30/50/60 fps, 1920 x 1200 60 fps, 3840 x 2160 25/30/50/60 fpsCodec 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)Outputs: 1920 x 1080, 3840 x 2160
Other video features	<ul style="list-style-type: none">Picture-in-picture (PiP) and picture out picture (PoP) display modesVideo Motion Enhancement (VME)Video IntensifierView Processing
Audio features	Acoustic Echo Cancellation (AEC), Automatic Noise Suppression (ANS), Automatic Gain Control (AGC), VoiceClear, AudioEnhancer, and lip synchronization

Meeting Features

Languages	Simplified Chinese, Traditional Chinese, English, Spanish (Europe), French, Arabic, Japanese, Italian, Portuguese (Brazil), Thai, Turkish, Korean, Kazakh, Romanian, and Bulgarian.
Features	<ul style="list-style-type: none">Web-based meeting controlWireless ProjectionSiteCallLDAP address bookMeeting control via TouchHD image snapshot (two display modes: 16:9 and 4:3)PiP: (small window: 1/16 of the main window in size and adjustable position)Open APIs for third-party integration and development



Security and Stability

Network adaptability	<ul style="list-style-type: none">IPv4 and IPv6, DiffServ, and URI callSuper Error Concealment (SEC), Automatic Repeat Request (ARQ), Forward Error Correction (FEC), Intelligent Rate Control (IRC), and Packet Loss Concealment (PLC)
Network Security	<ul style="list-style-type: none">H.235/TLS for signaling encryptionSRTP media encryptionConference access password, conference control password, and administrator passwordDual-stream encryption
Firewall traversal	H.460 public-private network traversal, static NAT
Environment requirements	<ul style="list-style-type: none">Temperature: 0 °C to 40 °C (operating state) -40 °C to +70 °C (non-operating state)Relative humidity: 10% to 95% RH (operating state) 5% to 95% RH (non-operating state)Ambient noise: < 46 dBA SPL
Certification and standards	CQC, CE (RoHS, REACH, and WEEE), Network Access License of MIIT, and Radio Type Approval Certification

Feature		
Model	Box 310	Box 610
Positioning	Business model	Professional-grade model
Usage	Small and medium-sized meeting rooms	Medium and large meeting rooms
Video resolution	H.264 1080p 60 fps at 1 Mbit/s 1080p 30 fps at 512 kbit/s 720p 60 fps at 768 kbit/s 720p 30 fps at 384 kbit/s	H.264 1080p 60 fps at 1 Mbit/s 1080p 30 fps at 512 kbit/s 720p 60 fps at 768 kbit/s 720p 30 fps at 384 kbit/s
	H.265 4K 30 fps at 2 Mbit/s 1080p 60 fps at 768 kbit/s 1080p 30 fps at 384 kbit/s 720p 60 fps at 512 kbit/s 720p 30 fps at 256 kbit/s	H.265 4K 30 fps at 2 Mbit/s 1080p 60 fps at 768 kbit/s 1080p 30 fps at 384 kbit/s 720p 60 fps at 512 kbit/s 720p 30 fps at 256 kbit/s
Dual-stream	1080p 30 fps + 1080p 30 fps 1080p 60 fps + 1080p 60 fps 4K 30 fps + 4K 30 fps	1080p 30 fps + 1080p 30 fps 1080p 60 fps + 1080p 60 fps 4K 30 fps + 4K 30 fps
Video input	1 x HT-RX 2 x HDMI	1 x HT-RX 3 x HDMI
Video output	2 x HDMI	3 x HDMI
Audio input	1 x HD-AI (level 2) 1 x XLR connector 2 x HDMI (audio input) 2 x RCA	1 x HD-AI (level 2) 1 x XLR connector 3 x HDMI (audio input) 2 x RCA
Audio output	4 x RCA 1 x HDMI (audio output)	4 x RCA 1 x HDMI (audio output)
Other ports	1 x USB 2.0 Type-A 1 x USB 3.0 Type-A 2 x 10/100/1000 Mbit/s LAN 1 x PoE network port (Touch) 2 x RJ45 serial port 1 x Wi-Fi (built-in)	1 x USB 2.0 Type-A 1 x USB 3.0 Type-A 2 x 10/100/1000 Mbit/s LAN 1 x PoE network port (Touch) 2 x RJ45 serial port 1 x Wi-Fi built-in
Microphone cascading	2	2
Bandwidth	IP: 64 kbit/s to 8 Mbit/s	IP: 64 kbit/s to 8 Mbit/s
Dimensions	Endpoint: 442 mm x 58 mm x 285 mm Package: 580 mm x 205 mm x 380 mm Net weight: 4.2 kg Gross weight: 8.1 kg	Endpoint: 442 mm x 58 mm x 285 mm Package: 580 mm x 205 mm x 380 mm Net weight: 4.2 kg Gross weight: 8.1 kg
Electrical features	Working voltage: 100 V to 240 V AC Working frequency: 50 Hz to 60 Hz Max. power consumption: 100 W Embedded AC/DC power module	Working voltage: 100 V to 240 V AC Working frequency: 50 Hz to 60 Hz Max. power consumption: 100 W Embedded AC/DC power module

* The technical specifications described in this document include but are not limited to parameters and performance indicators and vary depending on the actual release.

Ordering Information

Product Name	Product Model	Sample Photo
HUAWEI CloudLink Box 310	Box 310	
HUAWEI CloudLink Box 610	Box 610	
1080P30-to-1080P60 Codec Software License	-	
1080P60-to-4K30 Codec Software License	-	
1080P30-to-4K30 Codec Software License	-	

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