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

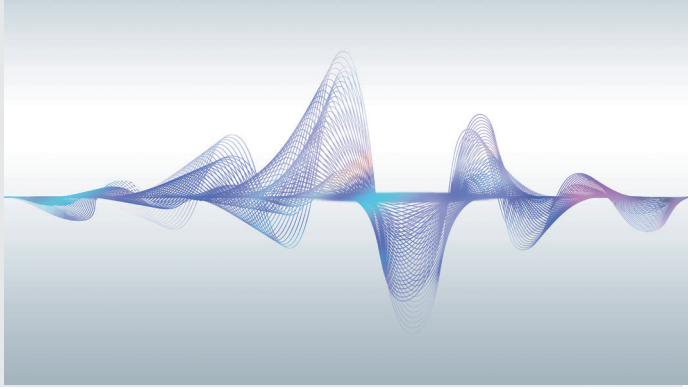
- Huawei's proprietary core technologies and high-computing hardware platform architecture for powerful performance
- Invisible watermarks embedded seamlessly into conference audio; anti-attack watermark extraction for audio leakage tracing
- One certificate for one endpoint, preventing device hijacking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

## 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

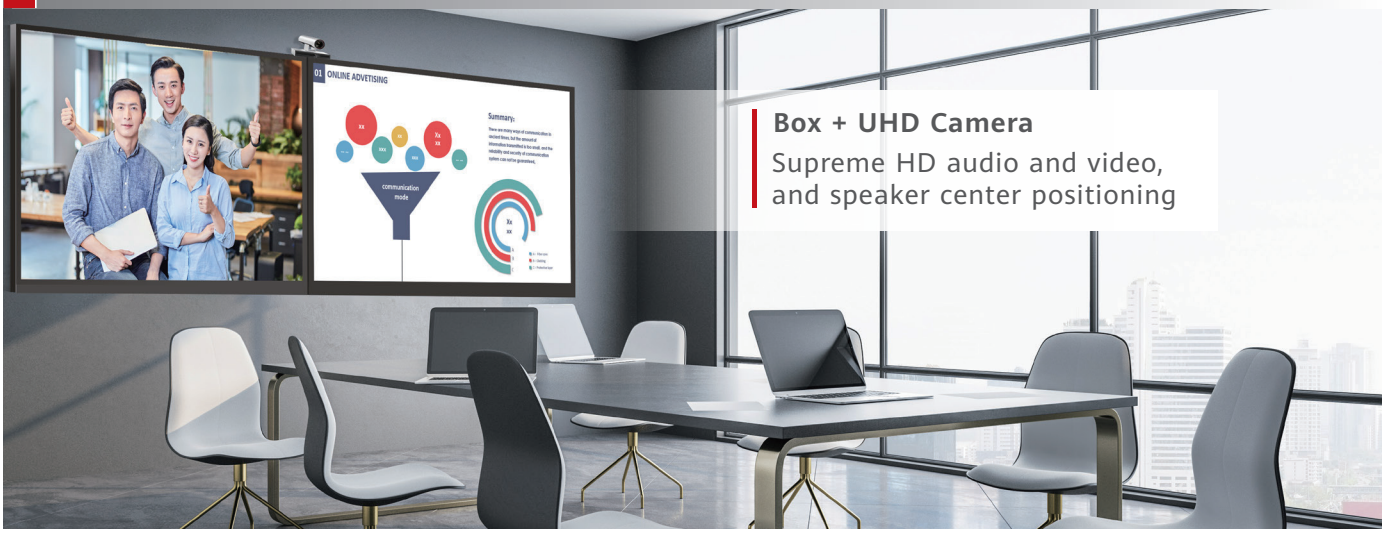
- Mainstream audio and video ports, which can be connected to the microphone array, loudspeaker, projector, and LCD/LED large-screen display device
- All-in-one HT-RX port integrates video transmission, camera control, and power supply with up to 100-meter long-distance connection

## 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 + UHD Camera**

Multi-level protection, high security and reliability

## 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.<br>• 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<br>• 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.<br>• 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.<br>• BYOM (Bring Your Own Meeting) |
| **Multiple layouts** | • Video and content can be displayed on one screen, but in different panes. |
| **Banner/Caption** | • Supports sending and receiving banners and captions via T.140 signaling. |
| **Multi-point conference recording** | • Supports SVC conference recording, enables scheduling of multi-point recording conferences via SiteCall, and provides pause/resume control during recording. |
| **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%.<br>• Opus ensures clear and smooth audio even when the audio packet loss rate reaches 80%.<br>• 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.<br>• 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.<br>• 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** | • 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 fps<br>• 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)<br>• Outputs: 1920 x 1080, 3840 x 2160 |
| **Other video features** | • Picture-in-picture (PiP) and picture out picture (PoP) display modes<br>• Video Motion Enhancement (VME)<br>• Video Intensifier<br>• View 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** | • Conference control via the web interface and remote control<br>• Bring Your Own Meeting (BYOM)<br>• Web-based remote browsing<br>• SiteCall<br>• Auto-Framing<br>• Address book import and export<br>• SVC recording<br>• T.140 banner/caption<br>• Remote camera control<br>• Multistream conference<br>• HD image snapshot (16:9 and 4:3)<br>• PiP (small window: 1/16 of the main window in size and adjustable position)<br>• LDAP address book<br>• Wallpaper settings<br>• Open APIs for third-party integration<br>• Output port priority configuration |

## Security and Stability

| | |
|---|---|
| **Network adaptability** | • IPv4 and IPv6, DiffServ, and URI call<br>• Super Error Concealment (SEC), Automatic Repeat Request (ARQ), Forward Error Correction (FEC), Intelligent Rate Control (IRC), and Packet Loss Concealment (PLC) |
| **Network Security** | • H.235/TLS for signaling encryption<br>• SRTP media encryption<br>• Conference access password, conference control password, and administrator password<br>• Dual-stream encryption |
| **Firewall traversal** | H.460 public-private network traversal, static NAT |
| **Environment requirements** | • Temperature: 0℃ to 40℃ (operating state) -40℃ to +70℃ (non-operating state)<br>• Relative humidity: 10% to 95% RH (operating state) 5% to 95% RH (non-operating state)<br>• 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<br>1080p 60 fps at 1 Mbit/s<br>1080p 30 fps at 512 kbit/s<br>720p 60 fps at 768 kbit/s<br>720p 30 fps at 384 kbit/s<br>H.265<br>4K 30 fps at 2 Mbit/s<br>1080p 60 fps at 768 kbit/s<br>1080p 30 fps at 384 kbit/s<br>720p 60 fps at 512 kbit/s<br>720p 30 fps at 256 kbit/s | H.264<br>1080p 60 fps at 1 Mbit/s<br>1080p 30 fps at 512 kbit/s<br>720p 60 fps at 768 kbit/s<br>720p 30 fps at 384 kbit/s<br>H.265<br>4K 30 fps at 2 Mbit/s<br>1080p 60 fps at 768 kbit/s<br>1080p 30 fps at 384 kbit/s<br>720p 60 fps at 512 kbit/s<br>720p 30 fps at 256 kbit/s |
| Dual-stream | 1080p 30 fps + 1080p 30 fps<br>1080p 60 fps + 1080p 60 fps<br>4K 30 fps + 4K 30 fps | 1080p 30 fps + 1080p 30 fps<br>1080p 60 fps + 1080p 60 fps<br>4K 30 fps + 4K 30 fps |
| Video input | 1 x HT-RX<br>2 x HDMI | 1 x HT-RX<br>3 x HDMI |
| Video output | 2 x HDMI | 3 x HDMI |
| Audio input | 1 x HD-AI (level 2)<br>1 x XLR connector<br>2 x HDMI (audio input)<br>2 x RCA | 1 x HD-AI(level 2)<br>1 x XLR connector<br>3 x HDMI (audio input)<br>2 x RCA |
| Audio output | 4 x RCA<br>1 x HDMI (audio output) | 4 x RCA<br>1 x HDMI（audio output) |
| Other ports | 1 x USB 2.0 Type-A<br>1 x USB 3.0 Type-A<br>2 x 10/100/1000 Mbit/s LAN<br>1 x PoE network port (Touch)<br>2 x RJ45 serial port<br>1 x Wi-Fi (built-in) | 1 x USB 2.0 Type-A<br>1 x USB 3.0 Type-A<br>2 x 10/100/1000 Mbit/s LAN<br>1 x PoE network port (Touch)<br>2 x RJ45 serial port<br>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<br>Package: 580 mm x 205 mm x 380 mm<br>Net weight: 4.2 kg<br>Gross weight: 8.1 kg | Endpoint: 442 mm x 58 mm x 285 mm<br>Package: 580 mm x 205 mm x 380 mm<br>Net weight: 4.2 kg<br>Gross weight: 8.1 kg |
| Electrical features | Working voltage: 100 V to 240 V AC<br>Working frequency: 50 Hz to 60 Hz<br>Max. power consumption: 100 W<br>Embedded AC/DC power module | Working voltage: 100 V to 240 V AC<br>Working frequency: 50 Hz to 60 Hz<br>Max. power consumption: 100 W<br>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.

# Oedering 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 | - | |

Learn More >>>

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