



MA-X4000S 4K60

4K60 AV Over IP System

Data Sheet

Introduction

4K@60 IP Based KVM Collaboration System is designed based on the concepts of AV over IP, video compression processing technology, network technology, visualization technology, centralized control and other advanced technologies to build an IP network as a link, integrating video splicing and processing, KVM collaborative management, audio processing, centralized control, optoelectronic mutual backup and other functions, which can easily realize large-scale transmission of audio and video signals, processing and sharing of large-scale audio and video signals. It has the characteristics of distributed, networked, visualized and decentralized server.

The product design takes into full consideration the synchronization, real-time, compatibility, breathing effect, color reproduction and other key performance in video processing. It can reach up to 4K@60HZ input and 4K@60HZ output, support LCD, LED and DLP splicing screen, support I/O, IR, RS232 and RS485 external control, and provide cost reduction, easy wiring, visualization control, decentralized operation and central control integrated comprehensive solution for various HD or 4K@60HZ video application scenarios.

This distributed seat system can be widely used in the accusation center, monitoring center, data center, scheduling center and other scenes, whether it is a room, a building or a campus, to achieve signal sharing and distribution at any time, break the geographical limitations, and build a highly efficient collaborative team.

Features

- Decentralized architecture, can expand any number of nodes without servers and control nodes, fully digital signal processing and transmission, signal access breaks through geographical location restrictions. Any input node or output node failure or power failure in the system will not affect the normal operation of the system, and both output/output support 4K@60HZ (3840X2160@60HZ);
- Supports mobile phone, PC, PAD, tablet computer system control, uses ARM embedded architecture of artificial intelligence AI computing chip, and each node unit uses powerful H.265/H.264 AI codec chip ensures smooth operation of the system, with end-to-end delay less than 50ms;
- Each node has ≥ 2 USB interfaces for connecting to the computer, without adding additional hardware, and the KVM function can be realized only through software authorization;
- Distributed node audio and video input and output integrated design, input and output at the same time does not affect signal transmission, and audio, video, network control and other functions can be realized through the network;
- Supports control of video, audio, environment, etc. in the system on a single page;
- Adopts unicast and multicast protocols, video H.264, H.265 codec, splicing video synchronization without tearing;
- It can simultaneously support multiple control terminal interface operations to achieve synchronization, and multi-person control is simple and convenient;
- Supports POE, adapter power supply, risk-free silent design;
- Supports Android, Apple IOS, System control and annotation of security video signals such as Windows and Linux; one-click screen clearing during annotation;

- Only one set of software operations is needed to achieve unified control of all devices in the system
- Support synchronous and asynchronous audio transmission; with high-quality AAC audio encoding protocol, no noise interference;
- Support the client to mirror the scene of display screen 1 to display device 2 in equal proportion, realizing sharing and same-screen seat functions;
- The USB interface supports data transparent transmission and USB-U disk data reading function;
- With local loop-out, the loop-out channel automatically follows the main/standby signal switching, and the loop-out signal is consistent with the input signal;
- With SFP+RJ45 hot backup, the switching between the two links does not exceed 2 seconds, and there is no black screen or flashing screen when switching video transitions. The main and standby dual links only occupy 1 IP, saving resources.
- Support offline custom editing of designer interface, support software interface design and configuration of B/S architecture, and synchronize design and configuration with tablet APP;
- Support cross-functional interactive direct control function, and realize direct control of multiple computers through a single tablet;
- Support single-screen output of 4 4K quality images, 16 2K image windows, support setting station logo, banner overlay, and scrolling subtitles;
- The output node supports streaming media signals of RTSP, onvif and other protocols, and can directly decode IPC network cameras on the screen;
- Support pre-setting of the operation terminal
- With volume adjustment, it ensures audio and video lip sync, mute and real-time volume;
- The user interface format and content can be customized by the freely programmable control

interface designer to customize the project;

- Lay out the key elements first, and when they need to be called, switch and send them to the screen with one click;
- It can open windows, roam, splice, overlay, cross screen, and split within the large screen display range. The signals are not affected. When switching between multiple signals, there will be no screen distortion, display asynchronism, or screen flashing.
- Supports element pre-layout function, the operation terminal can pre-layout the screen without affecting the current screen display;
- Full screen mode, single screen mode, roaming mode can be set according to needs;
- It has a multi-user and authorization mechanism, and can set permissions. Each operator has different operating permissions, and the control range of the corresponding signal source can be set for each operator;
- Supports visual voice intercom function between seat nodes and seat nodes (optional);
- Supports fingerprint recognition login, and can enter multiple groups of administrators or operators' permission fingerprint login (optional);
- Supports input signal multi-screen preview function, with full screen echo function, which can be accessed through computers, IPA The D terminal device controls the peripheral devices, such as the focal length and pan/tilt rotation of the conference camera, the large screen switch, the volume of the audio system, the light switch function, etc.;
- The output node supports customized output resolution, the input node supports up to 4K@60HZ, and the output supports up to customized resolution 4K@60Hz (3840X2160@60HZ);
- Support single screen to open 4-16 windows, overlay, roaming, free splicing, grid adsorption

function, and multiple sets of curtain wall settings and saves, and ensure that each window supports a resolution of no less than 1080P (1920X1080@60HZ), and the frame rate input node and output node are both 60HZ image quality. If the input resolution is 2K, it supports up to 16 rows and 30 columns of splicing. If the input resolution is 4K@60HZ, it supports up to 32 rows and 60 columns of splicing;

- Support remote KVM function, the remote signal source host can be controlled through the seat mouse and keyboard, support mouse cross-screen function, the seat can quickly slide between multiple display devices for multi-machine management, and support multi-level authority allocation, the authority range can be customized by the customer;
- With seat OSD menu, support local seat operators to take over, share, push, call and other functions of local signals through the OSD menu of embedded seats, support single display 4-16 screen control, support push window opening to large screen, realize seat management and collaboration;
- Support DID, LCD, LED splicing, with arc, arch, special-shaped splicing processing, support multi-curtain wall creation, control and management. The overall display layout can be saved and called;
- Supports saving and calling of multiple scenes, and the scene layout can be saved to the system to achieve fast and seamless switching;
- Signal source preview function, the control software can preview the signal screen in real time, detailed authority division control, and support multi-user grouping, hierarchical and decentralized control;
- Supports large-screen splicing, roaming, zooming, multi-layer overlay display, single screen or full

curtain wall supports 4-way main stream video signal layer overlay, window roaming, and supports custom window layout;

- Distributed nodes support two-way interactive capabilities of audio, video, and control. It has high-precision splicing synchronization frame technology to ensure the consistency of the entire large-screen display, reduce screen flicker, and greatly improve the viewing experience;
- Supports IPC forwarding box to forward mainstream IPC cameras (Hikvision, Dahua, Uniview, Tiandi Weiye, Tianshitong, etc.), supports Onvif/GB28181-2011 protocol, and each network camera forwarding box supports up to 8 main streams and 8 secondary streams, or supports 16 secondary streams of video streams at the same time. Support cascading, which can realize large-scale network cameras concurrently using input nodes to decode IPC on the wall;
- Support AI voice recognition control, which can accurately recognize voice semantics and quickly command and dispatch emergency command centers, conference rooms and other scenes (optional);
- Support tablet computer visual switching, push, sharing of video and signals to seat nodes, so that the seat nodes can be assigned control rights by the main administrator on the tablet (optional);
- Support multiple network streaming media devices to connect and display with third-party mainstream security platforms, and support pan-tilt control of network cameras. Realize platform unification and simplification;
- Support input signal coding vector logo function, support plan (scene) saving, name tagging and calling, support automatic polling editing and calling;
- Support subtitle function, no need for subtitle machine to deliver welcome words, support high-definition base map projection;

- Support signal sharing and distribution at any time, whether it is a room, a building or a park, breaking geographical restrictions, and can realize the interconnection of wide area network cross-regional input computers and KVM through public cloud servers or cloud server deployment, and build a city-level high-efficiency comprehensive dispatching and commanding collaboration system.
- Support mobile tablets to take over the signals and KVM of input node computers, control the keyboard and mouse of input nodes through the virtual mouse of tablets, and can focus on the content of input nodes on tablets, take screenshots and save, control video playback progress, flip through PPT, etc.
- Support AI voice recognition visual control of distributed seat system and environment control.
- Support multi-platform real-time multi-channel echo preview visualization operation, multi-terminal synchronous operation, the operation software can run on tablets (Windows/Android, etc.), different resolutions (analog/standard definition/high definition), and the configuration under multiple platforms can automatically synchronize the status without relying on the server;
- In order to ensure the smooth signal and image quality in complex network environment, the single-channel bandwidth of HD 3M-20M can be adjusted at will. Support TCP/IP transmission to meet the requirements of HD video in conferences and high-quality signal of the command center;
- Each node has multiple HD video interfaces, Phoenix head audio input and output interfaces, and the node has bidirectional RS232 and RS485 interfaces, which can support third-party central control to realize environmental control;
- By setting the timing operation, the window is automatically opened to switch the screen without

manual intervention; the system scene can provide a one-key recovery function; the node device has programmable storage capacity, which can automatically restore the system to the state before power failure after power failure and restart;

- The node supports DC direct current and built-in POE power supply; only need to lay a network cable to connect, audio, video, network central control, etc. can be realized.

Specification

Input node	
Function	Realize audio and video signal encoding and KVM transmission
Parameters	Interface type: HDMI, supports ring out Resolution: Compatible with 4K@60Hz and below resolution Audio transmission: 3.5mm audio input & output Control mode: network port Codec format: Intelligent H.265, H.265+ Power supply mode: 12V DC power supply and POE power supply
Output node	
Function	Realize video signal splicing screen window, roaming, superimposed
Parameters	Interface type: HDMI Support screen: support LED, DID, LCD, DLP splicing. IPC access: configure IPC-BOX concurrent box; Audio and video can be synchronized, asynchronous switching

	Resolution: Compatible with 4K@60HZ and the following resolution Audio transmission: 3.5mm audio input & output Control mode: network port Free window: support for free splicing of multiple images, roaming, superimposed, zoom display Power supply mode: 12V DC power supply + POE power supply Screen split mode: 1/4/9/16 split mode
KVM Collaboration Node	
Function	Realize codec and transmission of audio, video, keyboard and mouse signals;Support USB3.0/2.0 transmissions.
Parameters	Interface type: HDMI Resolution: Compatible with 4K@60Hz and below resolution Audio transmission: 3.5mm audio input & output, Control mode: Network port, Keyboard and Mouse Interface: 2*USB Type A, connect the mouse and key board to achieve KVM control Power supply mode: 12V DC power supply +POE power supply

System Diagram

