Fully Digital Smart Conference Controller

TS-0400MH



Description

The fully digital conference system is built on a Gigabit network audio transmission architecture. It supports multi-channel concurrent processing, allowing 128 microphones to be turned on simultaneously for stable speech. The system highly integrates audio processing and conference discussion control, offering professional-grade audio capabilities with an ultra-low end-to-end latency of 2–3 milliseconds from microphone pickup to output. Additionally, the system innovatively integrates practical functions such as multi-room management with a single Controller and identity recognition, fully empowering a high-quality and high-efficiency conference sound reinforcement experience.

Features

*Built on a Gigabit network audio transmission architecture, all core components utilize domestic chips. It can connect digital wired microphones, digital wireless microphones, and analog microphones; it supports multi-channel concurrent processing, allowing 128 microphones to be turned on simultaneously for stable speech.

*Ultra-large system capacity, supporting the simultaneous connection, management, and use of 65,535 wired conference units and 300 wireless conference units; supports 65,535 conference units participating in conference agendas (sign-in, voting, service, etc.) and speech control at the same time.

*Highly integrated DSP audio processing functions, featuring ducking, automatic gain control (AGC), equalizer, compressor, expander, automatic mixing, feedback suppression, echo cancellation, environmental noise reduction, matrix routing, EQ adjustment (supports 8-band, 10-band, 15-band, and 31-band EQ adjustment), crossover, volume dB value adjustment, and delay adjustment functions, etc.

*Possesses professional-grade audio processing capabilities. Through segmented compression mixing technology and high-precision clock synchronization transmission technology, it achieves an end-to-end link processing delay as low as 2–3 milliseconds from conference unit pickup through ducking, automatic gain control, equalizer, compressor, expander, automatic mixing, feedback suppression, matrix routing, EQ adjustment (supports 8, 10, 15, 31-band), crossover, and volume dB adjustment, to the final audio processing output.

*Industry-innovative adoption of "One Controller, Multiple Areas" and "Multi-Controller Interconnection" functions. A single Controller can be divided into 8 independent conference partitions; each partition possesses dedicated microphone and audio channels, while conference functions are mutually independent and do not interfere with each other, including sign-in, voting, priority, etc., ensuring conference space isolation and independent operation. Meanwhile, the system supports flexible audio interaction modes, enabling cross-partition two-way intercom to meet the requirements of scenarios such as group discussions and centralized training. Multiple Controllers can be interconnected via the network to achieve unified management, significantly improving resource utilization and making system deployment and expansion more flexible and efficient.

*Multi-mode conference management and high-concurrency processing: The system supports creating 8 independent conference rooms and can flexibly switch between 7 speech modes for each room, including FIFO, Normal mode, Request mode, Voice Control mode, LIFO, Free Discussion, and Queue mode, to adapt to different conference forms.

*Ultra-high data processing capability: The system supports 128 conference units speaking simultaneously; it features a customizable conference unit speech quantity function, where the speech quantity range for wired conference units can be set to any number between 0 and 128; the speech quantity range for wireless conference units can be set to any number between 0 and 8.

*Supports pairing with recording software to realize the independent recording function of microphone speech audio; it can separately record the speech audio of 128 conference units. After recording, the audio for each microphone will generate an individual WAV format file saved locally.

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*Features U-disk recording and playback functions; supports individual or mixed recording of any 8 channels (IN1~IN8), and can independently select to record wired/wireless microphones or perform mixed recording. Meanwhile, it supports playing audio via USB, with options for 19 output channels (LINE OUT 1, LINE OUT 2, OUT 1~OUT 16) for individual or combined playback functions, meeting the diverse needs of conference records and multimedia applications.

*All 8 input channels support independent configuration of 48V phantom power supply on and off; each input channel supports sensitivity adjustment.

*Features a 9-in/19-out audio matrix routing function. Audio output channels can be configured as Wired Role Separation output mode, Wireless Role Separation output mode, Simultaneous Interpretation (SI) output mode, and Phasing mode; each audio output channel can independently adjust audio parameters, including volume adjustment, equalizer adjustment, delay adjustment, limiting adjustment, and phase inversion adjustment functions.

*Among them, the analog output channels (OUT1-16) can set the output channel effective mode, supporting 8-channel signal output mode and 16-channel signal output mode. When switched to 16-channel output mode, the maximum number of active microphones for wired units is 64. When switched to 8-channel output mode, the maximum number of active microphones for wired units is 128.

*Role Separation output mode enables wired or wireless units to output independently based on ID numbers. Through expansion, wired units support 128 channels of independent audio output, and wireless units support 8 channels of independent audio output; it also supports individual recording for each unit via recording software or interfacing with voice transcription equipment to achieve role separation.

*Supports 16-channel Simultaneous Interpretation (SI) output mode; SI audio is output independently according to channel numbers, which can be used by recording or monitoring equipment. Furthermore, the number of output channels can be cascaded by external audio processors.

*When the output mode is Phasing mode, the matrix routing can customize any routing between 12 input channels and output channels (LINE OUT 1, LINE OUT 2, USB recording, Wired Downlink, Wireless Downlink, OUT 1~OUT 16). Each channel can be customized as Mixing Group 1 or Mixing Group 2, and functions such as feedback suppression, echo cancellation, and environmental noise reduction can be customized for activation.

*The Controller is compatible with connecting digital wired microphones, digital wireless microphones, and analog microphones simultaneously, and the three can be used in parallel; it adopts cross-domain audio synchronization technology and provides an input configuration function, supporting the selection of any input channel to switch between microphone input or line input, and adjusting phase inversion, volume, ducking, automatic gain control, equalizer, compressor, and expander; in microphone input mode, it can also control the phantom power switch.

*Features automatic mixing functions, including Gain Sharing automatic mixing and Gate-threshold automatic mixing; features 2 sets of mixing group settings. Mixing modes include: Gain Sharing automatic mixing and Gate-threshold automatic mixing. Gain Sharing automatic mixing can set audio parameters such as output gain, gain step, slope, response time, and mute switch, including the gain, mute, priority, and automatic mixing settings of the input source; Gate-threshold automatic mixing can set audio parameters such as output gain and mute switch, including the gain, mute, sensitivity, and automatic mixing settings of the input source.

*Supports adjusting the output channel equalizer function; each channel has an 8-band parametric equalizer or graphic equalizer, providing 10, 15, and 31-band graphic equalizers. The parametric equalizer supports the selection of high-shelf, low-shelf, and parametric filter types, as well as parameter settings such as frequency, gain, and Q/OCT; the graphic equalizer supports 3 mode configurations: Narrowband, Normal, and Broadband.

*The system features conference sign-in, voting, election, rating, satisfaction, and customizable functions.

*Features a device positioning function; supports initiating device positioning via software; after initiating positioning, the device will display prompt information.

*Supports custom microphone identity and permission configuration; microphones can be defined as Chairman units or Delegate units according to onsite requirements; Chairman units can be set with Default Priority speech permission, Intermediate Priority speech permission, or Advanced Priority speech permission; supports custom setting of unit names and function configurations (including custom selection to initiate hardware sign-in/voting or participate in hardware sign-in/voting).

*Features 2 types of backup mechanisms; supports Controller dual-machine hot standby function, where one device can be set as the Master and the other as the Slave. When the Master fails, it can automatically switch to the Slave to run, achieving a dual backup function; built-in two-way ring dual-link backup function, requiring no additional expansion equipment. When one link of the conference unit fails, it can achieve millisecond-level automatic switching to the standby link (switching time ≤5ms), ensuring the continuity and stability of system operation.

*Features a fire alarm linkage trigger interface, supporting interfacing with smoke detectors for real-time detection. After triggering, fire alarm information can be synchronized to the microphone interface and the Controller interface to remind personnel in the venue to evacuate urgently at the first opportunity, ensuring the safety of participants.

*Features 1 RS-485 interface, supporting the connection of 5 cameras to achieve camera tracking, supporting PELCO-D and VISCA control protocols.

*Features 2 RS-232 interfaces: 1 channel supports interfacing with cameras to achieve camera tracking functions; 1 channel supports interfacing with voice transcription systems to achieve role separation voice transcription functions.

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*It features client, web, 4.3-inch touchscreen, and Android phone/tablet control methods. The client allows adjustment of audio matrix parameters (including EQ, volume, delay, conference unit sensitivity, etc.), audio channel output mode switching, conference unit on/off control, and language switching (Simplified Chinese, English, Russian, French, Traditional Chinese, Spanish, Arabic, and Portuguese). It also supports separate control roles for the host device. The touchscreen allows adjustment of conference modes, the number of wired/wireless conference units that can be used, ID assignment, host/slave settings, and language options (Simplified Chinese, English, Russian, French, Traditional Chinese, Spanish, Arabic, and Portuguese). It also allows adjustment of display brightness/output volume, display of remaining usage days, and host registration via registration code. The Android phone/tablet allows control of conference unit on/off, enabling check-in, voting, receiving conference service information, and one-click deactivation of wireless conference units, all without PC operation.

*Supports expansion by cascading conference network audio processors. Audio is transmitted via the network between the Controller and the conference network audio processor. Wired units support the simultaneous transmission of 128 audio channels, and wireless units support the simultaneous transmission of 8 audio channels, providing functions such as feedback suppression, smart mixing, and automatic gain audio adjustment processing.

*Supports simultaneous interpretation function; the system can simultaneously transmit 63+1 channels of wired simultaneous interpretation.

*The system supports deeply adapted to voice transcription systems; data is interacted between systems via the network to achieve role separation voice transcription functions without a tedious wiring process.

*Features a node management function, supporting viewing the power usage status of each channel of the device (Aviation Port 1 ~ Aviation Port 4) through the display screen; features an automatic overload alarm function.

*Brightness can be adjusted through the display screen; users can flexibly set any brightness value within the range of 1~100 according to the onsite environment; supports microphone control functions, which can manage microphones in 8 different conference rooms, including one-key closing of all wireless microphones and unified control of the lifting or lowering of microphone lifts.

*Supports displaying device statistical information through the touch screen, supporting statistics on the total number of online microphones and the online status of Chairman units, Delegate units, Interpreter units, network audio processors, and expansion Controllers.

*The touch screen provides a gain adjustment function, allowing for the independent adjustment of the gain values of 18 output channels, with an adjustment range of -72dB to 12dB.

*Possesses an AP list display function, which can display the sequence number, SSID, and channel information of the AP; supports configuring the AP and adding multiple channels to the blacklist.

*Supports the wireless microphone audio downlink function; after activation, wireless microphones with built-in speakers can locally play back live speech audio to achieve local sound reinforcement.

*Supports interface language switching, offering font options for Simplified Chinese, English, Russian, French, Traditional Chinese, Spanish, Arabic, and Portuguese.

*The conference Controller features a registration days display function, allowing users to view the remaining days of use after registration at any time; supports directly inputting the registration code on the touch screen to complete Controller registration.

*The front panel has 14 status indicator lights, which can display the usage status of the Controller and wired/wireless conference units; 1 is the Controller status light, which is in a flashing state when the Controller starts normally; 4 are communication indicator lights for wired conference speech units, which are in a flashing state when wired conference units are in normal communication and use; 1 is the communication indicator light for wireless conference speech units, which enters a flashing state when the wireless transceiver is connected and in normal use; it does not light up when no device is connected, allowing for quick detection of link usage status. 4 are HDMI input interface indicator lights, which are in a steady-on state during normal communication and use. 4 are HDMI output interface indicator lights, which are in a steady-on state during normal communication and use.

*It features a 4-in, 4-out video matrix function. It supports integration with a conference host to enable video tracking of speakers in a conference room setting. The outputs support seamless switching between 4 channels of 2K60 resolution and seamless switching between 4 channels of 4K30 resolution.

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Specification

1.Microphone Capacity	Wired microphones ≤ 65,535; Wireless microphones ≤ 300
2.Simultaneous Interpretation Channels	63+1 channels
3.Frequency Response	20 Hz ~ 20 kHz
4.Dynamic Range	≥ 110 dB (A)
5.THD (Total Harmonic Distortion - Analog I/O	+4 dBu, ≤ 0.002%
6.Main Power Supply	200–240V~ 50/60Hz
7. Audio Input	8-ch Phoenix connectors (775 mVrms balanced)
8. Audio Output	1-ch LINE OUT (1 Vrms balanced)
9.Audio Output	1-ch LINE OUT (1 Vrms unbalanced)
10.Audio Output	16-ch Phoenix connectors (775 mVrms balanced)
11. EXTENSION Port	2x RJ45 network ports (100/1000 Mbps) for connecting conference system expansion devices
12.TRS Network Port	1x RJ45 network port (100/1000 Mbps) for connecting wireless AP
13.PC Network Port	1x RJ45 network port (100/1000 Mbps) for PC connection
14.RS-232 Interface	2 ports (1 for camera tracking, 1 for external device integration)
15.RS-485 Interface	1 port for camera control
16.DELEGATES Output Interface	4 ports for connecting conference units
17.HDMI Input	4 ports for camera connection
18. HDMI Output	4 ports for display connection
19.Wired Microphone Connection	Dedicated 6-pin cable
20.Power Consumption	350 W
21. Touch Control	4.3-inch touch screen
22. Dimensions (W×D×H)	482.6 × 307.6 × 95.7 mm
23.Installation	19-inch standard rack mounting
24. Net Weight	Approx. 5.4 kg