



Recording Controller TS-06504K

Automatic recording control embedded software V3.11



Description

The new fully automatic eight-position audio and video recording equipment adopts integrated hardware design, embedded Linux operating system, highly integrated UHD video acquisition module, recording module, live broadcast module, guide switching module, image segmentation and splicing module, and local echo output module to realize multiple functions such as live video broadcast, intelligent guide, ultra-high-definition recording, image recognition tracking, and multi-party interaction, meeting the needs of conference recording, training and learning, interactive teaching, etc.

Feature

I. Hardware parameters:

*Adopts domestic main control chip octa-core 64-bit processor, 8GB running memory. Integrated hardware design, embedded Linux operating system, highly integrated audio and video acquisition, encoding, decoding, professional director, live broadcast, on-demand, recording and other system modules, easy to use, easy to maintain and highly secure.

*The host comes with 2TB of storage space, and the recorded content can be stored for up to 2,000 class hours. It supports frequent use of the device for more than one year, and supports automatic overwriting of the oldest files when the hard disk memory is full, and loop recording.

*Display module: The host has a built-in 1.8-inch LCD display to display the device operation status, parameter information, hard disk capacity, audio status, resource channel recording status, and file copy progress. The device has 4 physical buttons, with the ability to record, stop, live broadcast and copy recorded files with one button.

*Video input: The host has 6 HDMI signal input interfaces, full HDMI interface video 4K resolution screen acquisition, 1 Type-C interface capture screen, 1080P resolution capture screen.

*Video output: The host has 4 HDMI signal output interfaces, 2 of which are 4K resolution and audio output simultaneously; the other 2 HDMI output ports have custom channel screen output.

*Audio interface: It has 1 3.5mm audio interface and 2 Phoenix terminals for audio collection; 1 3.5mm audio interface and 2 Phoenix terminals for audio output.

*Control interface: The host has 3 RS-232 Phoenix terminal interfaces and 1 RS-485 Phoenix terminal interface, 1 RS232 and 1 RS485 with 12V voltage power supply, which can be connected to various serial port protocol devices and power the device; it has 5 USB interfaces for connecting U disk to copy files or keyboard and mouse to operate the embedded director station. It has 4 short-circuit trigger I/O; it comes with a factory setting button, which can restore the factory settings with one click.

*Network interface: It has 1 802.3ab 1000Base-T Gigabit RJ45 network interface, 1 optical fiber network port, and supports IPv4 address and IPv6 address.

II. Software functions:

*Based on B/S architecture, you can log in to the web terminal to realize online directing, live broadcast management, signal management, group management, user management, file management, scheduled recording, central control management and system management.

*Support H.264/H.265 video codec protocol, support AAC audio encoding protocol, to ensure high audio restoration and accurate synchronous recording of audio and video.

*The device can realize 8-channel 4K network camera access decoding at the same time, and has 6-channel resource screen synthesis output 4K resolution PGM screen.

*Support 9-channel video stream recording at the same time, and the recorded file format supports MP4, AVI, MOV, FLV, TS and MKV formats. With independent recording function, each recording can be freely bound to the audio channel, and can be recorded and controlled independently.

*With user mode and advanced mode settings. User settings: support one-click setting of four levels: ultra-high definition, high definition, standard definition, and smooth; advanced settings: customizable resolution, bit rate, and frame rate. The bit rate supports 256kbps~20Mbps, supports dynamic encoding and static encoding selection; supports custom resolution, different resolution ratio settings, including 9:16, 16:9, 32:9 settings, supports 4K resolution; supports 25/30/60 frame rate settings, and also supports 15/20 low frame rate settings.

*Supports video file segmentation recording, and can customize the segmentation duration. The TS file format segmentation duration supports 30~480 minutes, and other file formats provide 30~240 minutes. A single recording can reach 12 hours of uninterrupted recording, and users can end the recording in advance as needed.

*Audio encoding supports multiple formats, including AAC, PCM, G.711A, G.711U, ADPCM formats, and audio sampling rates support 48K, 44.1K, and 8K. Provides audio management function, supports audio mixing management, and can set the mixing of 5 audio inputs and control the volume of each channel separately.

*Support local video preview and playback function, preview and view the currently recorded video, provide multiple multiple playback switching, support 0.5x, 0.75x, 1.5x, 2x, 3x video playback speed adjustment, and provide popular video modules and latest video modules.

*Support web-side file preview, built-in VOD on-demand module, users can play, pause, jump and other operations of video files online through the network.

*Support multiple directing methods: with embedded directing console, real-time preview of 9-channel images, 1-channel PGM image preview and 8-channel resource channel preview; support web-side web page directing, support fully automatic directing mode with built-in automatic directing module; support serial port control protocol and standard network API protocol, can connect to various third-party directing tools for device recording and directing control.

*Support screen layout: support picture-in-picture, three-screen, four-screen, six-screen and dialogue screen, and support 3 custom screen layouts and other 10 screen layouts to meet personalized needs; support custom screen layout, 6-way layer custom overlay, free setting of overlay position.

*Support switching effects: including gradient, upward fly-in, downward fly-in, blinds, box state expansion, and other 12 screen switching effects.



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- *Support subtitle settings: users can customize the size of subtitles, font colors provide red, green, blue, white, black selection, support mouse to drag the subtitle position, support letter solid color background selection and slogan background image upload.
- *Support adding title: the title can choose resource channel screen or custom uploaded picture display, and the uploaded picture format supports jpg, jpeg, png, bmp. Support adding watermark logo: users can customize the uploaded logo picture and support red, green, blue, white transparent color selection.
- *Support real-time display of audio input volume. On the director interface, it supports real-time viewing of whether the audio is connected normally. Support network access detection. On the director interface, when the network is disconnected or there is no network access, the director interface icon can display the network status in real time.
- *Live management: Support web live broadcast function, support live broadcast to 200 users at the same time in the local area network, have standard RTMP push streaming function, support 3-way push streaming at the same time, connect to third-party live broadcast platform for online live broadcast, conveniently expand the number of live broadcasts, and support custom start and end push streaming time.
- *File upload: The host supports automatic upload of backup files with third-party FTP file server. Supports rapid construction of file server through FTP server tools, and courseware is automatically pushed to the file server. File upload and download can automatically adjust the bandwidth to prevent network congestion.
- *Factory settings: The host supports software/hardware reset function. Users can easily restore the device to factory settings through physical buttons or remote commands of the device to avoid file damage, IP address loss, and administrator password loss that cause the system to be unusable.
- *User management: The host supports group management of B/S users, and can assign an account and password to each user. Users can watch live and on-demand files only after authentication and authorization, and the user group management function allows corresponding users to access corresponding courseware.
- *Encrypted recording: It can realize encrypted recording of recorded files, with 2 encryption methods; it can realize encryption of recorded videos or encrypt recorded files through configurable multiple dongles; encrypted videos need to be played with a decryption player, and encrypted videos need to be authorized to play with a U shield or password.
- *U disk recording: It supports real-time recording of U disks, which can be taken away after recording stops; it supports U disk read and write rate detection, and the host can set different bit rates for recording according to the U disk rate.
- *Scheduled recording: After the scheduled recording schedule is edited, it will automatically record at the scheduled time, and automatically generate a file name with information such as venue, speaker and topic. Web signal management supports the function of recording small resources separately.
- *Operation management: The host automatically records basic operation functions such as boot time, recording use, device interface detection, etc., and can connect to third-party platforms to provide operation data; it supports one-click import and export of all user configuration setting files of the host.
- *Abnormal repair: It has the function of repairing damaged video files caused by power supply abnormalities. The repaired file formats include but are not limited to MP4, AVI, MOV, FLV and MKV video packaging formats.
- *It has software central control. After filling in the central control instructions in the recording and broadcasting management interface, you can perform central control operations through the interface and connect to other devices for one-click control; it supports recording and broadcasting Android APP docking and control; it supports docking with private cloud platform servers. After successful docking, the cloud platform can uniformly control the equipment and facilitate the management of multiple recording and broadcasting devices.
- *It supports one-click upgrade function. When the system has new function iterations, it can realize function upgrade by importing firmware.
- *Support docking with the public service platform for educational resources to realize resource on-demand and shared application functions; support selecting viewing content by platform, school stage, subject, version and textbook, automatically cache and play high-definition video; support video content playback operations such as on-demand, drag and drop, replay, jump, etc.
- *Support docking with the voice transcription server to realize the voice transcription function, transcribe the voice into text and automatically generate subtitle files.

III. Interactive function:

- *Built-in video interactive function, which can realize the interaction of 4 recording hosts, and supports two interactive modes: discussion and mute: in discussion mode, the lecture room can choose to speak or mute the microphone at will; in mute mode, the lecture room cannot speak, but can watch the live broadcast of the lecturer.
- *Support address book function: in discussion mode, users can enter the device name or IP address in the top search box to find the corresponding contacts that have been added, or they can create new contacts on the right side of the search box. The added contacts can be dialed, edited, deleted, etc. through the buttons on the right side.
- *Support classroom convening function: In the interactive interface, the main lecture room can directly convene classroom terminals that have participated in classroom interaction with one click, without additional configuration, which is convenient and fast.
- *Support permission control function: In interactive mode, the main lecture room can set the opening and closing of the terminal screen and sound of the lecture room, and can set the screen layout of the interactive screen.
- *Support dual-screen dual display function: In audio and video interactive mode, HDMI output of the main venue and branch venue screens can be realized. When the main venue opens auxiliary stream sharing, the HDMI interfaces of the main venue and branch venue both output the computer courseware content of the main venue; when the main venue does not open auxiliary stream sharing, the HDMI interface of the main venue outputs the computer courseware content of the main venue, and the HDMI interface of the branch venue outputs the computer courseware content of the branch venue.
- *Support docking with the multimedia control unit (MCU), which can realize the interaction of 50 recording and broadcasting hosts. Support multiple screen layouts, up to 16 channels of screens can be displayed simultaneously, and interactive character screen polling can be performed automatically.
- *Dial-up call: Supports dial-up function, and audio and video interactive function can be realized by entering the interactive terminal IP.
- *Supports custom interactive frame rate, bit rate function, dynamic or static encoding, to ensure the smoothness of interactive audio and video under various network conditions.

IV. AI tracking function:

- *Built-in tracking strategy algorithm, no need to configure the tracking analysis host additionally. Supports free switching of tracking strategies to meet the needs of different tracking scenarios.
- *Supports free setting of teacher image tracking screen mode, and sets the size of the selected teacher tracking screen according to actual needs.
- *Supports setting the tracking lock release time. After the locked teacher leaves the screen tracking area, the person lock is automatically released after the tracking lock release time arrives, and returns to the default state, waiting for the next person to enter the screen to start re-locking tracking.
- *Supports setting the tracking shielding area, such as actively shielding the teacher observation area, window curtains, classroom door, large-screen LCD TV and other places that are easy to interfere with the tracking effect. The system will not perform image analysis and tracking operations on the shielded areas to avoid these places interfering with the overall tracking effect.
- *Student tracking supports locking the tracking object and multiple people appearing in the shooting screen, switching to a panoramic screen.
- *Teacher tracking supports height adaptation. After setting the close-up size screen, the system automatically recognizes the teacher's height to center the character screen.
- *Supports full-lens tracking of the teacher, always centering the character in the shooting, achieving a stable way of tracking without switching.



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Specification

Video protocol	H.264、H.265
Code stream	256Kbps~20Mbps
Video output format	Support MP4/MOV/MKV/FLV/AVI/TS
Audio protocol	AAC
Live broadcast protocol	Support RTSP and RTMP real-time protocol streams
Network protocol	Support TCP, UDP, RTMP, RTSP, FTP, DHCP, HTTP protocols
Video input interface	6-channel HDMI high-definition video interface
Video output interface	4-channel HDMI high-definition video interface
Split screen capability	Single picture, picture-in-picture, 2/3/4/5/6 pictures
Input resolution	3840x2160@30fps、2560*1600@60fps、2560*1440@60fps、2048*1152@60fps、 1920*1200@60fps、1920x1080@60/50/30/25fps、1680*1050@60fps、1280*720@60fps
Output resolution	3840x2160@30fps、1920x1080@60/50/30/25fps
Audio input interface	1-channel 3.5mm audio input interface, 2-channel Phoenix terminal input interface, 2-channel HDMI audio input interface
Audio output interface	1-channel 3.5mm audio output interface, 2-channel Phoenix terminal output interface, 2-channel HDMI audio output interface
Network port	1 Gigabit network interface, 1 optical fiber network port
USB interface	4 USB 2.0 interfaces, 1 USB 3.0 interface, support mouse/U disk/director switcher/keyboard
Control port	3 RS-232 interfaces, 1 RS-485 interface
Panel button	1×switch button, 4×function button
Software reset function	Support restoring factory settings
Indicator light	3×LED indicators, system operation, hard disk failure and recording prompt lights
Storage	2TB
Power supply	DC 24V/3A
Power consumption	45W
Weight	3.5kg
Size (L×D×H)	482.6×258.2×45mm
Operating temperature	-10℃~55℃ (ambient temperature under well-ventilated conditions)
Operating humidity	20%~80% relative humidity, no condensation