Controller TV-6840S

Splicing matrix controller embedded software V3.085

Description

The splicing matrix all-in-one machine is based on FPGA hardware architecture and adopts a plug-in card design. Different interfaces can flexibly match actual needs and are characterized by low failure rate and high reliability. A comprehensive, visual audio and video control platform that integrates high-score collection, output customization, visual management and other technologies. It is mainly used in command and dispatch centers in the fields of government, military, transportation and other fields, as well as large, medium and small conference rooms of government and enterprise units and other places. It is a display and control solution for various industries such as conference rooms, national defense forces, public security, electric power, rail transit, and industrial automation.

Feature

*Pure hardware card-type architecture design, 19-inch standard rack installation, metal structure chassis;
*Adopting 8U metal structure chassis, the shell protection level of the prototype meets the IP20 requirements of GB/T4208-2017;
*Built-in 7-inch touch screen, through which monitoring status viewing, parameter setting, plan calling and other operations can be performed, and the touch screen supports online upgrades;
*The device adopts a card-type design, with a built-in data exchange backplane, which can detect device temperature and power online status;
*The device supports 64 inputs and 40 outputs, and supports preview and echo functions;
*A single device supports simultaneous access to 16 input cards, 10 output cards, 1 preview card, and 1 back-up graphics card; with corresponding boards and cards, it supports 4096*2160@60fps, RGB4:4:4; at the same time, the back-up graphics card supports output monitoring through the HDMI video interface, and the resolution supports 1920*1080@60fps.
*It has Gigabit network port, and support 1Gbps bandwidth.
*Based on pure hardware FPGA architecture, the host has the functions of splicing and matrix integration, the output end can choose splicing or matrix mode, and has the function of intelligent audio control. It does not require an independent audio card and supports separate audio transmission. The HDMI board can choose external analog audio or HDMI embedded audio input or output;
*It has the function of fan speed adjustment, and the speed can be adjusted according to the actual scene;
*It has the function of input and output port backup. When any link of any link fails, the system will automatically switch to the backup link to ensure that the image of the display device is not affected;
*Supports signal cropping function, which can remove black edges and crop the input signal source to solve the problem of black edges in the front-end signal source, or partially amplify the signal, and can input pixels for precise cropping, or visual cropping by dragging the mouse;
*Supports pre-walling function. Users can preset the windows and plans of the large screen on the virtual wall in advance, and apply them to the current large screen after confirmation;
*Supports station logo setting function. Text station logo or picture station logo can be set. Users can customize and upload high-definition pictures as the station logo of the signal source, and can also drag and drop =Change the station logo position by way of;
*Supports background image setting function, and can upload 8K resolution pictures as large-screen background image display;
*Supports subtitle display function, users can customize subtitle content, subtitles can be set to static or dynamic display, can adjust scrolling speed, scrolling mode, and can adjust subtitle size, position, background color, font color, font, alignment;
*Input board, output board, preview board, and echo board support hot-swap function, the device does not need to shut down, restart and set, after replacing the board, quickly restore the previous layer data to ensure normal playback of the picture, and can realize flexible board replacement and convenient maintenance;
*Supports HDMI, SDI, DVI, FIBER, HDBaseT, VGA, DP, IP and other image interfaces;
*Excellent heat dissipation system design, adopts the side left and right air duct inlet and outlet design, optimizes the air outlet rate, improves the heat dissipation capacity of the whole machine, and ensures long-term stable operation of the equipment at an ambient temperature of 45℃;
*The system adopts B/S and C/S management and control architecture, supports web access to system background management, and supports system management and real-time status monitoring through a web browser. It can be expanded to support the use of iPad tablet software, Android tablet software, and Windows computer clients to perform visual management of the system, signal switching, screen overlay, picture-in-picture, screen splicing, screen roaming, screen zoom in/out, screen movement/closing, and other operations, and support real-time monitoring of the display control area; support multi-user multi-platform synchronous operation, support real-time synchronization of operation interfaces on different platforms; the client comes with a guide operation video;

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* The system is designed as a pure hardware architecture based on FPGA, the system runs efficiently and stably, and the internal video data transmission adopts high-speed data parallel processing bus exchange technology. The input and output bus bandwidth is up to 1794Gbps, the video bus transmission bandwidth of a single input board card is up to 4 x 6.5 Gbps, and the video bus transmission bandwidth of a single output board card is up to 16 x 6.5 Gbps;
* Configure IP input card, use weighted polling load balancing algorithm, no need to configure streaming media server additionally, support unlimited addition of access to ONVIF protocol, GB/T 28181 standard monitoring signals, unified management and unified scheduling, and support visual preview, can decode 4096*2160@30fps IP code stream;
* In order to improve the troubleshooting efficiency of the equipment, it has the function of monitoring the host temperature and power supply online status, intelligently identifying the board interface combination, board and interface status monitoring, signal loss warning, and visual graphic management and control, with access board number statistics and access channel number statistics functions.
* Support online firmware upgrade, the firmware version is intelligently forward compatible, the upgrade process is safe, stable and fast, the success rate is as high as 100%, and the firmware version information of the display device and each board can be refreshed in real time, which is convenient for quick confirmation of the upgrade results on site;
* A single output board can open 16 layers, which can realize arbitrary window opening, superposition, roaming and zooming;
* Support simultaneous preview of all input sources, and support echo of all outputs;
* When the video input source is 60Hz, the image delay time from video source input to output is 32ms;
* Supports superimposing display windows of multiple different video input signals on any video output display screen, with window image roaming *Supports multiple users to be online and send data at the same time, the operation response time is less than 1s, and the firmware can be upgraded online; *A single card of the device can create 4 screens, and a single device can create 40 screens; it has irregular screen creation, and can realize single card single interface screen creation; *Supports setting 3000 scene plans; *It has layer parameter setting function, including scaling, top and bottom layers, layout mode, and overlay; and uses infinite scaling algorithm to ensure that the details of the picture are not lost when it is enlarged or reduced; *Supports custom settings for input and output resolutions, which can be saved as EDID templates, and can be imported and exported. Multiple resolution setting modes are optional, including Including: preset resolution, custom resolution;
*Supports real-time viewing of monitoring equipment operating parameters and status information on the device side, including device name, device SN, device interface connection status, operating status, IP address, and firmware version;
*The device can intelligently identify the board interface combination, with board and interface status monitoring, and can actively report warnings when input source signal is lost;
*Supports dual control card backup function, automatically and seamlessly switches to the backup control card when the main control card fails during work, and there is no black screen and no audio jam during the switching process, achieving high stability of the device;
*Supports dual power supply backup function, dual power supply access can be switched arbitrarily, and one power supply can be supported by the other power supply after a power supply failure. Achieve high reliability of equipment;
*Use deep neural network (DNN) and long short-term memory network (LSTM) algorithms, can customize 30 voice commands, with client software can realize voice control to turn on/off audio, turn on/off subtitles, scene polling, switch scene plans, clear screen, lock screen, unlock screen and other functions;
*Support to connect to the central control system through RS-232 and TCP/IP control, realize visual interface management, users can preview, zoom in, zoom out, drag and switch splicing matrix video signals in real time through the control terminal, can set the input signal source to the bottom, top and one-click clear screen, support setting touch and delivery trigger switching mode.

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Specification

Power button	1*Power button
Input card slot	16
Output card slot	10
Preview card slot	1
Echo card slot	1
Control card slot	2
Touchscreen	1
Input maximum resolution	4096×2160@60Hz
Output maximum resolution	4096×2160@60Hz
Technology Architecture	Centralized, private protocol
Power supply	AC 220V
Rated power	650W
Size (L*W*H)	482.6mm*315mm*354.8mm
Weight	20kg
Environment temperature	0℃—+45℃
Environment humidity	10%-80%