



Description

Integrated machine is based on FPGA hardware architecture, adopts a plug-in card design, and has different interfaces that can flexibly match actual needs. It is characterized by low failure rate and high reliability. It is a comprehensive, visual audio and video control platform that integrates high-resolution acquisition, output customization, visual management and other technologies. It is mainly used in command centers, data control centers, and comprehensive management systems in the security industry. The system can integrate KVM seat management, large-screen splicing management, IoT device control, audio processing, video recording, optical moment seats, video conference management and other systems. The seat side supports a set of keyboards and mice to manage multiple devices, and can push the seat screen to the large screen, or capture the screen from the large screen to the seat. The platform software side can control the large screen display signal, audio control, screen recording, screen polling, and control of IoT devices such as on-site lighting and curtains. The systems are seamlessly connected to achieve unified on-site scheduling.

Feature

*Pure hardware plug-in architecture design, 19-inch standard rack-mount metal structure chassis ; built-in data exchange backplane, screen splicing, KVM seat management, display and control integrated design , support for insertion of video boards, fiber seat boards, central control cards, server cards, paperless server cards, video conferencing cards, video recording cards, digital conference cards, etc., and can achieve multi-functional unified management and control.

*It has 36 fully hybrid card slots, supporting access to 36 boards; 4 power module slots; 2 control card slots; and 3 functional board slots, supporting access to central control cards, server cards, paperless server cards, video conferencing cards, video recording cards, and digital conference cards.

*Supports power supply redundancy backup function and flexible switching between power supply modules. If any power supply fails, it can be supported by another power supply to achieve high reliability of the equipment .

*It supports dual control card backup function. When the main control card fails during operation, it will automatically and seamlessly switch to the backup control card. There will be no black screen and no audio jam during the switching process, achieving high stability of the equipment.

*Adopt lossless and uncompressed video processing technology, support 4096*2160@60fps, RGB4:4:4 video signal acquisition and display; and adopt ultra-low latency image, audio and video transmission technology. By optimizing image transmission and image cache mechanism, the end-to-end delay of the image is within 2ms, and the picture switches seamlessly, without black field, blue screen, flashing screen and other transition states during the switching process;

*The backplane adopts bidirectional signal transmission processing and supports hardware mixed plug-in design of data channels. The same card slot supports both input and output boards .

*It has a 7-inch touch screen, through which operations such as monitoring status viewing, parameter setting, and plan calling can be performed, and the touch screen supports online upgrades.

*The left and right side air duct inlet and outlet design has excellent heat dissipation effect, ensuring long-term stable operation of the equipment at an ambient temperature of 45°C.

*The system supports B/S and C/S management and control architectures, supports web access to the system backend, 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 supports real-time monitoring of the display control area; supports multi-user multi-platform synchronous operation, and supports real-time synchronization of operation interfaces on different platforms.

*The system is designed as a pure hardware architecture based on FPGA. The system runs efficiently and stably. The internal video data transmission adopts high-speed data parallel processing bus switching technology. The maximum bandwidth of the input and output bus is up to 2764.8Gpbs .



ControllerTV -68288

Integrated machine controller control embedded software V3.084

- *Supports optical moment seat function, adopts non-IP transmission technology, and switches images without black screen, achieving real-time and all-round rapid control.
- *The system supports customized input or output of the fiber seat board interface, and automatically matches by detecting the fixed number of the matching transmitter or receiver.
- *The display screen of a single seat supports seeing 4 signal source images at the same time, and can be operated on any signal source image with a set of mouse and keyboard. Supports remote cross-screen operation of seats, synchronous signal display between seats and seats, seats and large screens, and realizes the functions of displaying signals on one machine and multiple screens, one person and multiple machines, and one screen and multiple machines.
- *KVM seat management has a Chinese OSD semi-transparent menu, and you can use the mouse to directly click on the menu for operation. It has KVM role permission management, and the KVM signal management permission can be configured through the system.
- *Without adding external devices, it supports station logo, subtitle, and background map functions, among which the text background and position of the station logo are adjustable, the content, background, color, scrolling rate, scrolling direction, and position of the subtitles are adjustable, and the background map resolution supports 8K.
- *Video boards, fiber seat boards, central control cards, server cards, paperless server cards, video conference cards, video recording cards, digital conference cards, etc. support hot-swap functions, and the equipment does not need to be shut down, restarted, or set up; after replacing the video board, the previous layer data can be quickly restored to ensure normal playback of the picture, and the board can be flexibly replaced, which is convenient for maintenance.
- *Support direct access to various types of video boards such as HDMI, SDI, DVI, FIBER, HDBaseT, IP, etc., without the need for conversion through optical fiber or network cable.
- *Configure IP input card, use weighted polling load balancing algorithm, no need to configure streaming media server additionally, support unlimited access to ONVIF protocol, GB/T28181 standard monitoring signals, unified management and unified scheduling, and support visual preview, and can decode 4096*2160@30fps IP code stream.
- *Using deep neural network (DNN) and long short-term memory network (LSTM) algorithms, 32 voice commands can be customized. With the client software, voice control can be used to turn on/off audio, turn on/off subtitles, scene polling, switch scene plans, switch window modes (free mode, two-point mode, solidification mode), clear screen, lock screen, unlock screen and other functions.
- *The system supports real-time monitoring of device temperature, power online status, board status, and board interface status. It has offline, signal loss, and high temperature warning functions, which can improve the efficiency of system troubleshooting.
- *Supports online firmware upgrades for host, board, and touch screen. The firmware version is intelligently forward compatible. The upgrade process is safe, stable, and fast. It can refresh the firmware version information of the display device and each board in real time, which is convenient for quick confirmation of the upgrade results on site.
- *The host supports access to paperless server cards, supports SM2 and SM4 domestic encryption algorithms to encrypt data, supports ordinary and confidential conference modes (including custom anti-screenshot, file watermark and read-and-burn mechanism), and the conference host can divide any participants into multiple groups through signal management for screen broadcasting and document sharing. Group same-screen broadcasting can support 8 groups; it has 1 HDMI output interface, 1 DB9 interface, 1 RJ45 interface, and 4 USB3.0 interface communications.
- *The host supports access to digital conference cards. The board has audio clock synchronization transmission technology, end-to-end audio transmission <5ms, and can be expanded to carry 4096 wired conference microphones and 300 wireless conference microphones; it has 2 RS-232 interfaces, 1 RS-485 interface, and 4 RJ45 interfaces; the audio input interface has 1 Phoenix terminal; the audio output interface has 1 Phoenix terminal.
- *The host supports access to the central control card, adopts zero-code and low-code logic system architecture, supports scanning QR code control, and the central control board will automatically generate a QR code on the cloud platform when connected to the Internet. Scan the QR code through WeChat or browser to enter the control interface and control the central control board; support password permission setting; equipped with 3-way RS-485/RS-422, 3-way RS-232, 2-way IR_OUT, 2-way IO, and 2-way relay.
- *The host supports access to the video conference card and supports the repair mechanism when the IP network packet is lost. When the network packet is lost by 30%, the sound is clear and continuous, and the video is clear and smooth, without stuttering or mosaics; when the network packet is lost by 80%, the sound is clear and smooth, and can be accurately understood. At the same time, it has built-in meeting sign-in, electronic whiteboard, electronic voting, file sharing and other data conference functions; equipped with 2-way video input interface, 2-way video output interface; 1-way MIC IN, 1-way LINE IN; 1-way LINE OUT; 1-way RJ45; 2-way USB2.0 interface.
- *The host supports access to video recording cards, adopts H.264/H.265 video codec technology, has adjustable bit rate, supports video encoding 256kbps~12Mbps, resolution 4K, and has built-in 2TB storage space, supports automatic deletion of old files, and loop recording; it has 2 HDMI input interfaces, 2 3.5mm audio input interfaces, and 1 USB3.0 interface.
- *Supports access to video output boards, a single board can support 16 layers, and can realize arbitrary window opening, overlay, roaming, and zooming; supports superimposing multiple display windows of different video input signals on any video output display screen, with window image roaming, zooming, and overlaying.
- *A single video output card supports the creation of up to 4 screens, and a single device supports the creation of up to 140 screens; it has irregular screen creation, and can realize single card and single interface screen creation.
- *Supports setting 3000 scene plans.
- *Supports layer parameter settings, including zooming, top and bottom layers, layout mode, and overlay.
- *Supports custom settings for input and output resolutions, which can be saved as EDID templates and imported and exported. Multiple resolution setting modes are available, including preset resolution and 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, has board and interface status monitoring, and can actively report warnings when input source signal is lost.

Specification

Power button	1×Power button
Mixed card slot	36
Control card slot	2
Business card slot	3
Power module slot	4
touchscreen	1 block
HDMI interface	1 × HDMI output interface
Serial port	3×DB9 interface
Network port	2×RJ45 ports, supporting up to Gigabit network
USB interface	4×USB3.0
Technology architecture	Centralized , private protocol
Power supply	AC 220V
Rated power consumption	1250W
Dimensions (L x W x H)	482.6 mm × 500 mm × 621.5 mm (Height: 14U)
Weight	30 kg
Environment temperature	0 °C—+45°C
Environment humidity	10%-80% , no condensation