Colorlight

CS16K

Multimedia Server

Specification V2.1.1



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Update Notes

Version No.	Revision Date	Revision description
V2.1.0	2026.09.01	Replace sound card and graphics card
V2.1.1	2026.10.16	Partial Description & Parameter Amendment

01 INTRODUCTION

1.1 Overview

The CS16K is a high-performance, scalable, and reliable multimedia server. Powered by robust hardware, it supports two 8K video decoding and playback, as well as 8 × 4K@60Hz video output. Equipped with Colorlight's professional playback and control software GrandShow, the CS16K supports simultaneous decoding and playback of multiple media formats, enabling flexible display layouts, including multi-screen splitting, irregular splicing, and combination. Moreover, it offers features such as multi-layer and multi-scene management, multi-server cascading, and seamless switching, making it ideal for demanding professional playback and control applications.

The deep integration of GrandShow software and the CS16K multimedia playback server further improves the intelligence and ease of use of the playback control system. Widely applied in art performances, smart city construction, conferences, exhibitions and other scenarios, the system supports cross-platform operation. With excellent compatibility, it can directly play common files such as audio, video and images without transcoding. Combined with split-screen display and lightweight interactive design, it enables more flexible content playback and control. Featuring a wide color gamut, high dynamic range and exquisite image quality, the CS16K multimedia playback server accurately restores true-to-life colors and delivers an immersive visual experience to users.

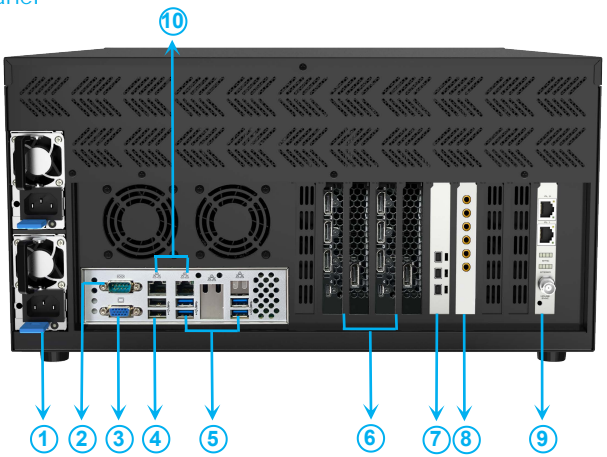
1.2 Appearance

Front Panel



No.	Name	Description
1	USB 3.0	2×USB 3.0 ports for external devices (keyboard, mouse, USB flash drive, etc.)
2	Power switch	Power on/off the device

Rear Panel



No.	Name	Description
1	AC power connector	2×AC 100-240V, 50/60Hz
2	COM	1×DB9 port
3	VGA	1×VGA output port (connecting to an LCD monitor for software operation)
4	USB 2.0	2×USB 2.0 ports
5	USB 3.2	4×USB3.2 Gen 1 ports
6	DP1.4	8×DP 1.4 output ports (display output)
7	Mini DP 1.4	3×Mini DP 1.4 output ports (connecting to an LCD monitor for software operation)
8	Dedicated sound card	Audio ports for audio input and output devices, supports 7.1 surround sound channels
9	Video sync card	Sync signal port
10	LAN	2×1 Gb Ethernet ports

02 FEATURES

Features

- 8×DP output ports (up to 4K@60Hz per port)
- Per server: pixel-to-pixel playback and control at 16,384×4,608@60Hz
- Supports master-slave backup for multiple devices
- Supports quick control via external MIDI consoles
- Plays various media materials including videos, images & texts, PPTs, text files, web pages, streaming media and NDI sources
- Enables editing, previewing, switching, saving and copying of multiple scenes
- Provides quick functions such as background image display and scene switching
- Supports 10-bit HDR video decoding and playback
- Supports creative display effects including arbitrary image rotation, ultra-wide screens, irregular spliced screens and irregular split screens
- Real-time monitoring of system operating status with early warnings for device faults and abnormal media files
- Supports pre-preview of scene content and real-time monitoring of device output images
- Supports time-limited device licensing (customized)
- Supports signal input from various optional capture cards
- Supports scheduled software startup and shutdown for automatic cyclic scene playback
- Supports Wake-on-LAN, power-on auto-start and scheduled shutdown to realize unattended operation
- Supports control via Pad APP for visual operations including real-time output preview and arbitrary scene switching
- Compatible with central control protocols to realize scene switching, media playback, volume adjustment and other functions

- Features timeline playback for flexible program arrangement; supports timeline special effects that change dynamically over time
- Comes with a startup page for quick access to recent projects; supports automatic screen connection to reduce manual configuration steps
- Supports performance monitoring to check playback resource occupancy and playback logs
- Supports scheduled command lists, enabling the software to execute timed instructions and operations such as software launch/close/restart, server shutdown/restart, play, pause and stop
- Provides window special effects for media materials, including color wheel, feathering, fisheye, color inversion, kaleidoscope, keying, marquee, mask, mosaic, night vision, embossment, sharpening, screen flashing and vortex
- Supports transition effects including fade in/out, left/right slide, up/down slide and more

03 APPLICATION DIAGRAM



Note: The illustration is for reference only. Actual products may vary.

04 SIGNAL FORMATS

4.1 Output Interface Specifications

DP 1.4				
Resolution	Color Space	Sampling	Color Depth (bit)	Frame Rate (Hz)
4K 4096x2304	YCbCr	4:2:2	8/10	23.98,24,25,29.97,30,50,59.94,60
	YCbCr/RGB	4:4:4	8/10	
4K 3840x2160	YCbCr	4:2:2	8/10	23.98,24,25,29.97,30,50,59.94,60
	YCbCr/RGB	4:4:4	8/10	
2K 2048x1080	YCbCr	4:2:2	8/10	23.98,24,25,29.97,30,50,59.94,60,100,120
	YCbCr/RGB	4:4:4	8/10	
2K 1920x1080	YCbCr	4:2:2	8/10	23.98,24,25,29.97,30,50,59.94,60,100,120
	YCbCr/RGB	4:4:4	8/10	

Note: The above lists standard resolutions. Non-standard resolutions are supported within the port bandwidth limits.

05 SPECIFICATIONS

Product Information	
Series	CS
Model	CS16K
Specifications	
Chassis	5U
CPU	Intel Xeon 16-core 32-thread processor
RAM	128G
Storage	1×2TB M.2 high-speed SSD (expandable)
Capture card(optional)	HDMI, SDI, DVI,DP ports
Graphics card	2×RTX 16GB professional graphics cards
Video port	8×DP1.4
Max output (per port)	4,096×2,304@60Hz
Max output (entire device)	16,384×4,608@60Hz
Audio	Audio input and multi-channel output
Network	2×1GbE
Playback & control software	GrandShow
Physical Dimensions (W×H×D)	
Device	482.60mm×221.76mm×620.40mm (excluding rubber feet) (19.00''×8.73''×24.43'')
Packaging	585mm×350mm×726mm (23.03″ ×13.78″ ×28.58″)
Weight	
Net	20.6kg (45.42lbs)
Gross	27.86kg (61.42lbs)

Electrical Parameters	
Power supply	AC 100-240V,50/60Hz,6A×2
Power consumption	1300W
Operating Environment	
Temperature	0℃~45℃/32° F~113° F (24/7 continuous operation)
Humidity	0%RH~85%RH, non-condensing
Storage Environment	
Temperature	-40℃~70℃/-40° F~158° F
Humidity	0%RH~95%RH, non-condensing
Placement Requirement	
This device can only be placed horizontally. Do not invert the device or place it vertically.	
Packing List	
CS16K multimedia server	1 pc
GrandShow software kit	1 pc
DP cable	8 pcs
MiniDP to HDMI cable	1 pc
Power cord	2 pcs
Keyboard & mouse combo	1 pc
After-sales service card	1 pc
User manual	1 pc

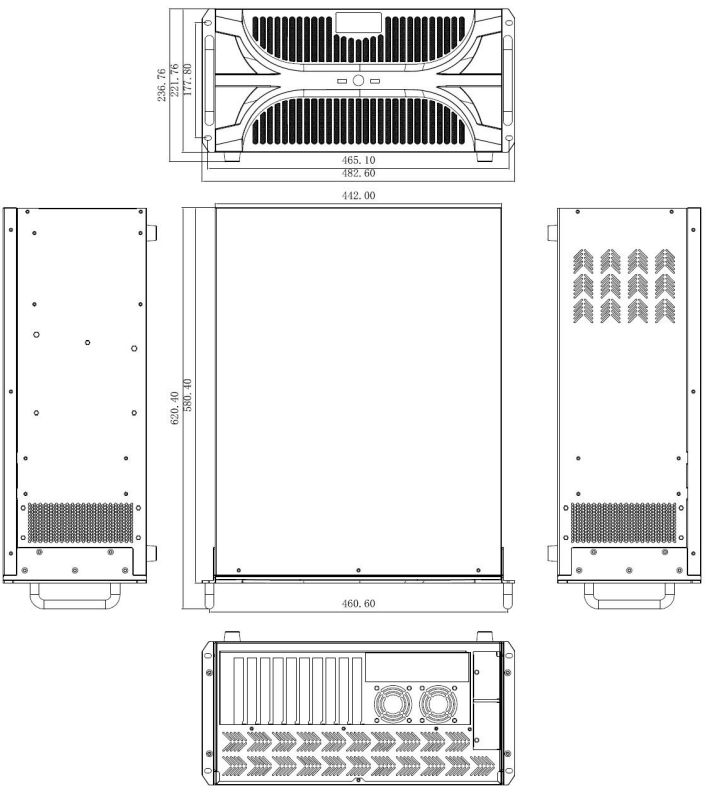
Note: Prerequisites for synchronized splicing display:

1. Multiple DP ports are all connected to senders;
2. All servers are configured with the same EDID.

06 MULTIVIEW

Unit: mm

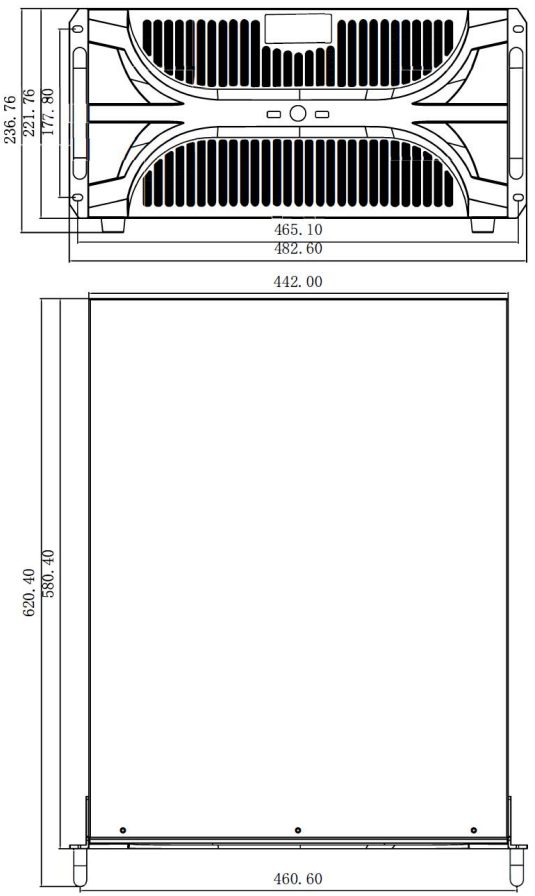
Tolerance: ±0.2mm



07 REFERENCE DIMENSIONS

Unit: mm

Tolerance: ±0.2mm



08 STATEMENT

8.1 Certifications

CCC, CE, UKCA, FCC, IC, RoHS

Note: If the product does not have the relevant certifications required by the countries or regions where it is to be sold, please contact Colorlight to confirm or address the problem as soon as possible. Otherwise, the customer shall be responsible for the legal risks or Colorlight has the right to claim compensation.

8.2 Statement

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