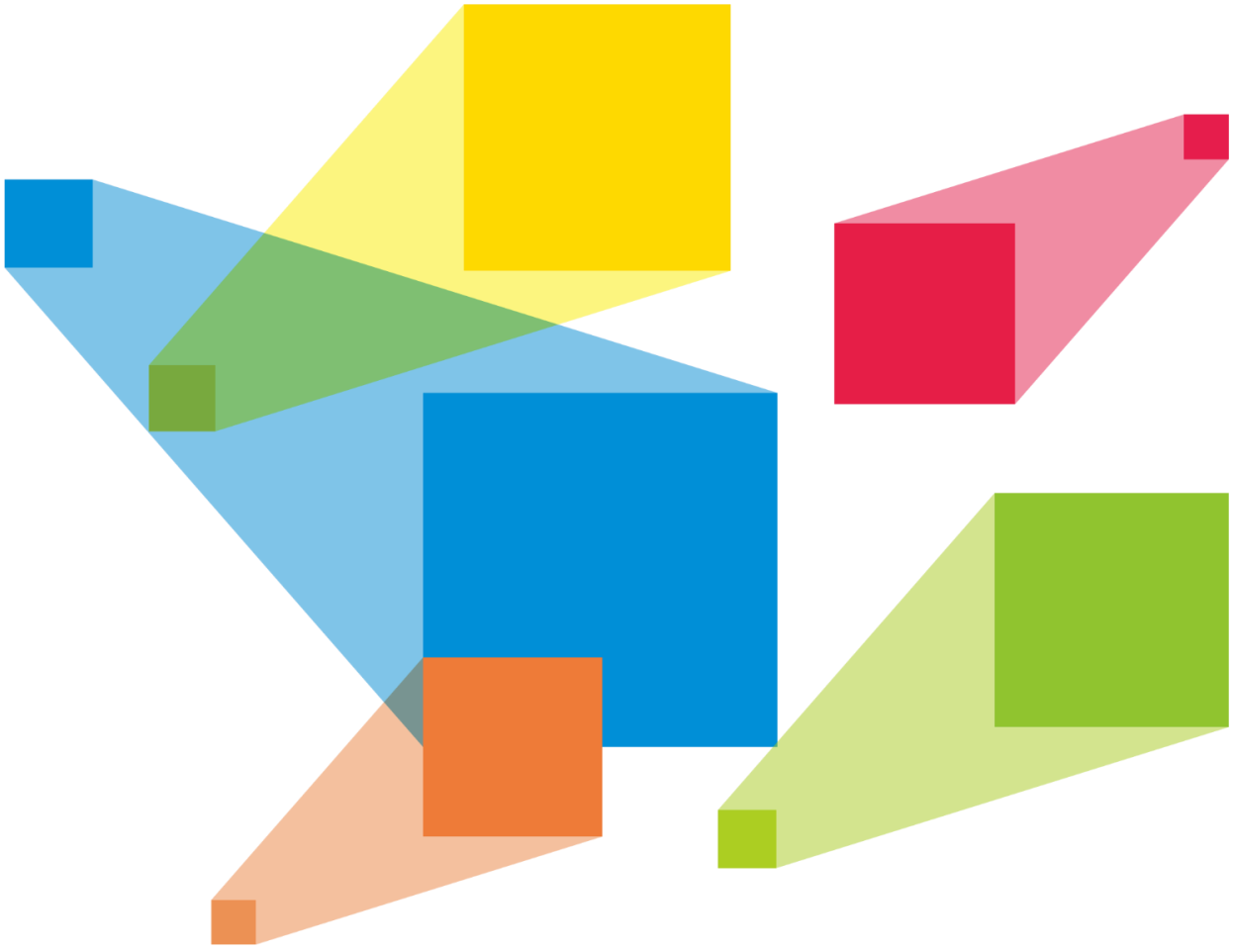
ET16S-G

Media Server



Specifications

Change History

Version	Release Date	Description
V1.2.0	2025-08-31	• Changed HPG4000 graphics card to HPGA4000. • Changed HPGA5000 graphics card to HPGA4500 Ada.
V1.1.0	2024-11-30	• Updated the product selection section. • Added the optional items section.
V1.0.0	2024-10-31	First release

Introduction

The ET16S-G is a media server from NovaStar, boasting a 16K ultra-high resolution, pixel-to-pixel screen loading, and multiple high-performance graphics cards.

Equipped with a powerful workstation motherboard, Intel Xeon processor, and ECC high-speed memory, the ET16S-G enables flawless frame-synchronized output of four graphics cards. A single media server can replace four traditional media servers with single graphics card configurations, while also having the ability to link multiple servers for frame-synchronized mosaic and backup, perfect for meeting the requirements of ultra-high resolution displays exceeding 16K.

Incorporating the latest version of Kompass FX3 multimedia playback software, the ET16S-G showcases its ability to hardware decode up to four channels of 8K60fps high-definition video content simultaneously, giving full play to the decoding and rendering capabilities of all available GPUs. Furthermore, it offers a range of functionalities, including multi-channel audio and video playback and processing, visual media management and program arrangement, as well as output partitioning and reorganization, enabling seamless control and creative display in mosaic configurations using multiple graphics cards.

With all these advanced features, the ET16S-G is well-suited for various fixed installation scenarios requiring exceptional resolution and powerful playback control, such as large-scale outdoor advertising displays, naked-eye 3D, immersive experiences, data centers, and exhibition showcases.

Certifications

CE, FCC, IC, CB, KC, RoHS

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

Features

- A single device supports up to 16K×8K output capacity, ultra-high resolution video decoding and pixel-to-pixel display
- Splitting, reassembly, and rotation of multiple outputs, enabling loading of irregular displays and achieving creative mosaic display
- Dividing output into up to 64 partitions, accommodating ultra-wide screens and rapid mapping adjustments
- Simultaneous playback of 12x mixing layers and 1x audio
- Visualized program arrangement and management
- Live and pre-edit modes
  - The program editing and playback are in sync in live mode
  - Edit the programs before displaying them on the screen in pre-edit mode
- Media library management, including videos, pictures, PowerPoint files and audios
- Media file sorting
- Media file batch import
- NDI sources, website page sources, sources from capture devices, streaming media sources and text sources supported
- Media collection configurations
- Custom OSD
- Up to 1080P PowerPoint files
- Using a laser pointer for moving between slides in PowerPoint
- Multi-screen management and control
- Configuration and playback of frame sequences in bmp, tiff, tga, jpg, and png formats

- External LTC and MTC timecode inputs, ensuring precise and synchronized playback control
- Playback progress management
- Shortcut key for program jumping and auto jumping settings
- Configurable layer size and priority
- Main KV jumping settings
- Main media based playback progress management
- Crossfade on program switching
- Layer mask, cropping, keying, blurring and opacity adjustment
- Inheritance of audio properties supported

  The audio properties remain unchanged when you replace the layer audio media of the program
- Auto startup of built-in software on system power on
- Auto program playback on software startup
- Remote control via UDP or TCP/IP
- Controlled by a central control unit
- Auto saving of project file being edited
- Controlled via NovaStar's Visual Intelligent Control Platform (VICP), enabling a highly efficient and user-friendly control experience

Appearance

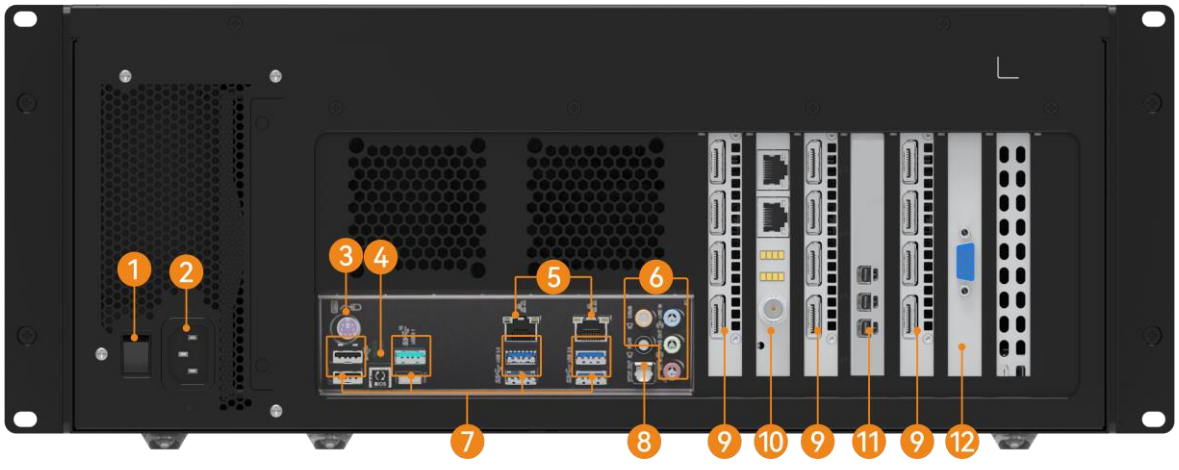
Note

All product pictures shown in this document are for illustration purpose only. Actual product may vary.

Front Panel

No.	Area	Function
1	Power button	Turn on or turn off the device.
2	USB	2x USB 3.0 • Connect to the mouse and keyboard. • Insert a USB drive for importing media files.

Rear Panel



No.	Area	Description
1	Power button	Power on or power off the device.
2	Power	Connect to an external power source.
3	PS/2	Connect to the mouse and keyboard.
4	USB BIOS Flashback button	For the BIOS program update of the motherboard
5	RJ45	2x RJ45 connectors for Ethernet networking
6	3.5 mm audio	• 1x MIC IN: 3.5 mm microphone input connector • 1x Line IN: 3.5 mm external audio input connector • 3x Line OUT: 3.5 mm audio output connectors for 6 channel connections
7	USB	• 2x Type-A USB 2.0 • 1x Type-A USB 3.1 Gen2 • 1x Type-C USB 3.1 Gen2 • 4x Type-A USB 3.1 Gen1 Connect to the mouse and keyboard or insert a USB drive.
8	Optical port	S/PDIF digital audio output
9	Output	Graphics card slots At most four graphics cards can be configured. Single card output: • Up to 4x 5120×2880@60Hz outputs • Four connector mosaic output, with a maximum total width or height of 16384 pixels • Single connector width: 480–8192 pixels • Single connector height: 300–8192 pixels Note • The graphics card does not support irregular mosaic layouts. The mosaic layout must be 1×2, 1×3, 1×4, 2×2, 2×1, 3×1 or 4×1. • The output resolutions of the graphics card connectors that are used for mosaic must be the same.
10	Sync card	• 2x RJ45 Accept a frame lock signal and output the signal. • 1x BNC Accept an external sync signal. • LED indicators

		Indicate the statuses of the sync signal connections.
11	Control UI	3x Mini DP • Max single connector output: 4096×2160@60Hz • Connect to a monitor for displaying the software user interface.
12	VGA	1x VGA Only used for display software interface and system installation during production

Hardware/Software

Power supply	1300 W
CPU	Intel Xeon Gold Processor
Memory	ECC DDR4 high-speed memory
Hard drive	High-speed SSD
Motherboard	High-performance workstation motherboard
Keyboard & Mouse	Keyboard and mouse suit
OS	Windows 10 Enterprise LTSC
Built-in software	Kompass FX3 software with licensing dongle

Product Selection

Model	Configuration	Graphics Card
ET16S (2A4)-G	• Processor: 1x Intel Xeon Gold Processor • Memory: 64 GB (default), expandable • Hard drive: 1 TB high-speed SSD (default) • Sync card: 1x Sync Card II • 8x DP cables	• 2x HPGA4000 Single card spec: – Video memory: 8 GB GDDR6, 256 bit – Smooth playback of 1x hardware-decoded 8K×4K@60fps SDR video files • 1x MPGT400
ET16S (3A4)-G	• Processor: 2x Intel Xeon Gold Processors • Memory: 128 GB (default), expandable • Hard Drive: 1 TB + 960 GB high-speed SSDs (default) • Sync card: 1x Sync Card II • 12x DP cables	• 3x HPGA4000 Single card spec: – Video memory: 8 GB GDDR6, 256 bit – Smooth playback of 1x hardware-decoded 8K×4K@60fps SDR video files • 1x MPGT400
ET16S (Dual CPU)-G	• Processor: 2x Intel Xeon Gold Processors • Memory: 128 GB (default), expandable • Hard Drive: 1 TB + 960 GB high-speed SSDs (default)	• Graphics card is optional, which can be selected from Optional Items. – HPGA4000, select max 4 Each includes 4x DP cables. – HPGA4500 Ada, select max 2 Each includes 4x DP cables. – HPGA6000, select max 2 Each includes 4x DP cables. • MPGT400, required for multi-card synchronization • Server sync card, required for multi-server synchronization

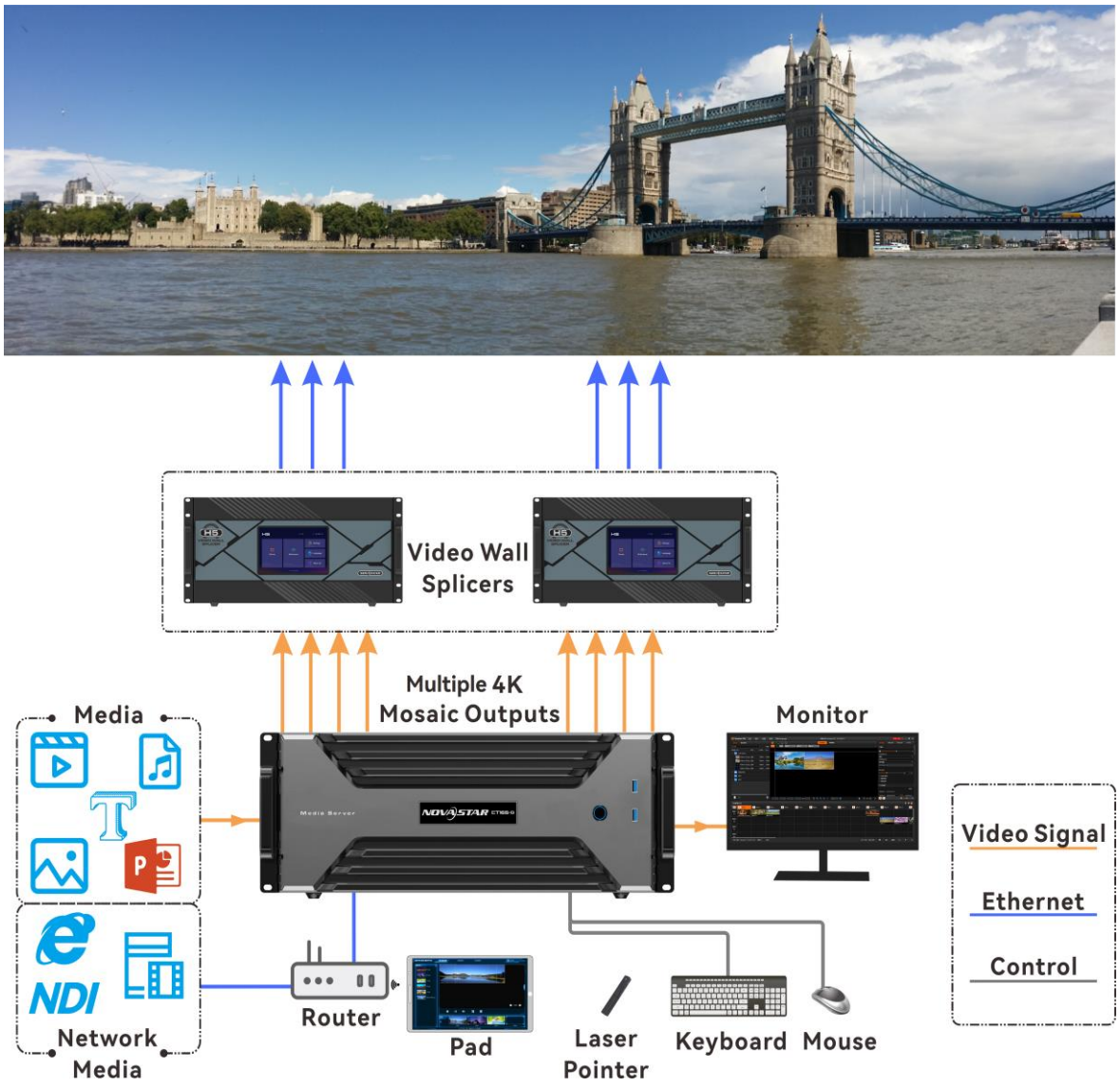
Optional Items

The following table lists the optional items that you need to purchase from NovaStar separately.

Graphics Card and Sync Card	Description
Graphics Card MPGT400	 3x miniDP For displaying the software user interface only, not for output
Graphics Card HPGA4000	 4x DP 1.4 • Up to 4x 5120×2880@60Hz outputs • Four connector mosaic output, with a mosaic width or height of up to 16384 pixels • Single connector width: 480–8192 pixels • Single connector height: 300–8192 pixels • Playback of 1 layer of 8K×4K@60fps SDR video (hardware-decoding) • Memory: 16 GB • Type: GDDR6 • Bit width: 256 bit
Graphics Card HPGA4500 Ada	 4x DP 1.4 • Up to 4x 5120×2880@60Hz outputs • Four connector mosaic output, with a mosaic width or height of up to 16384 pixels • Single connector width: 480–8192 pixels • Single connector height: 300–8192 pixels • Playback of 1 layers of 8K×4K@60fps or 4K×2K@60fps SDR video (hardware-decoding)

Graphics Card and Sync Card	Description
	• Memory: 24 GB • Type: GDDR6 • Bit width: 192 bit
Graphics Card HPGA6000	 4x DP 1.4 • Up to 4x 5120×2880@60Hz outputs • Four connector mosaic output, with a mosaic width or height of up to 16384 pixels • Single connector width: 480–8192 pixels • Single connector height: 300–8192 pixels • Playback of 3 layers of 8K×4K@60fps SDR video (hardware-decoding) • Memory: 48 GB • Type: GDDR6 • Bit width: 384 bit Note • The graphics card does not support irregular mosaic layouts. The mosaic layout must be 1×2, 1×3, 1×4, 2×2, 2×1, 3×1 or 4×1. • The output resolutions of the graphics card connectors that are used for mosaic must be the same.
Sync card	 The sync card must work with the HPGA4000, HPGA4500 Ada and HPGA6000 graphics cards. • 2x RJ45 Accept a frame lock signal and output the signal. • 1x BNC Accept an external sync signal. • LED indicators Indicate the statuses of the sync signal connections.

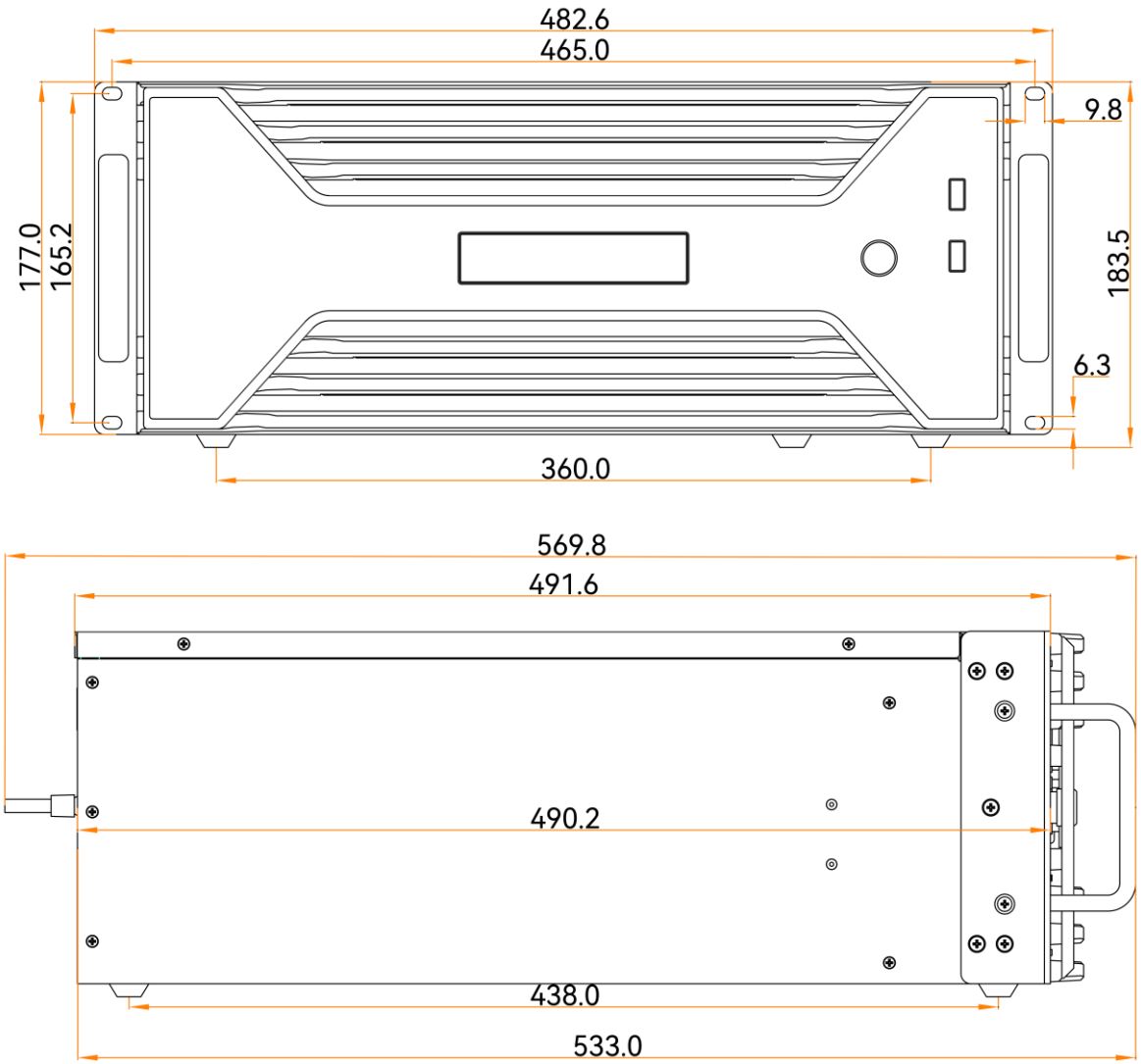
Applications



Note

- This product can only be placed horizontally. Do not mount vertically or upside-down.
- The product can be mounted in a standard 19-inch rack capable of withstanding at least four times the total weight of the mounted equipment. Four M5 screws should be used to fix the product.

Dimensions



Tolerance: ±1 Unit: mm

Specifications

Electrical Characteristics	Power connector	100–240V~, 8A 50/60Hz
	Max power consumption	1100 W
Operating Environment	Temperature	0℃ to +40℃
	Humidity	0% RH to 80% RH, non-condensing
Storage Environment	Temperature	–10℃ to +60℃
	Humidity	0% RH to 95% RH, non-condensing
Physical Specifications	Dimensions	482.6 mm × 183.5 mm × 569.8 mm
	Net weight	17.9 kg
	Gross weight	24.5 kg
Packing Information	Accessories	1x Power cable 1x Mini DP to HDMI cable 1x Keyboard and mouse suit 1x VGA to HDMI cable 1x Certificate of Approval 1x Safety Manual Note Cables and adapters from the product selection are not included in this packing list.
	Packing box	735 mm × 660 mm × 300 mm

Media File Types and Formats

The media server supports the decoding of various common video coding formats, such as H.264, H.265, MPGE-4/2 and WMV.

Type	Format
Video	mp4, avi, mkv, flv, mov, wmv, mpeg, mpg, m4v
Image	jpg, jpeg, bmp, png, gif, ico
Audio	mp3, aac, flac, amr, ape, wav, wma
Office	PowerPoint, Excel, Word, PDF

Note

Recommended video coding formats:

- 4K < resolutions ≤ 8K, width or height ≤ 8192 pixels: H.265 (HEVC) or VP9 recommended
- Resolutions ≤ 4K: H.264 (AVC) recommended
- When the video size exceeds 8K, it is recommended to split the video into multiple files for playback.

For a better image quality experience, the following video bitrates are recommended.

- Recommended video bitrates for SDR uploads – single media server and single graphics card:

Type	Video Bitrate Standard Frame Rate (24 Hz, 25 Hz, 30 Hz)	Video Bitrate High Frame Rate (48 Hz, 50 Hz, 60 Hz)
4320 (8K)	75 to 90 Mbps	110 to 135 Mbps
2160 (4K)	35 to 45 Mbps	53 to 68 Mbps
1440 (2K)	16 Mbps	24 Mbps
1080p	8 Mbps	12 Mbps

- Recommended video bitrates for SDR uploads – multiple media servers and multiple graphics cards (frame synchronization required):

Type	Frame Rate	Video Bitrate	Video Coding
4320 (8K)	60 Hz	30 Mbps	H.265
2160 (4K)	60 Hz	30 Mbps	H.264

Note

If frame synchronization output is not required in the application scenario that has multiple media servers and multiple graphics cards, please refer to the recommended video bitrates for SDR uploads – single media server and single graphics card.

Notes and Cautions

Notes For Battery

- The battery is not intended to be replaced.
- Disposal of a battery into fire or a hot oven, or mechanically crushing or cutting of a battery can result in an explosion.
- Leaving a battery in an extremely high temperature surrounding environment can result in an explosion or the leakage of flammable liquid or gas.
- A battery subjected to extremely low air pressure may result in an explosion or the leakage of flammable liquid or gas.

FCC Caution

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Others

This is Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

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Statement

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