

Multimedia Playback & Control Server

MA-BK4000-2Pro



Specification V1.0

Revision History

Version	Date	Updates
V1.0	2025-06-24	• Initial Release

Product Overview

MA-BK4000-2Pro is a professional point-to-point playback control server designed for 16K ultra-high resolution. It supports video playback up to 35.38 million pixels (4×4096×2160) with industrial-grade hardware.

Powered by an NVIDIA professional graphics card, it features 4×DP1.4 4K output ports, supporting custom output resolutions and EDID lock. It can drive 4×4K@120Hz displays simultaneously.

It provides 2×HDMI2.0 + 1×DP1.4 ports for a control monitor, without occupying the rendering GPU channel.

Preloaded with professional LED playback control software (Standard Edition), it functions as a multi-screen processor, supporting both independent output and seamless video wall.

Supported codecs: H.264, H.265, HAP. Supports lossless image sequences, graphical media management, playlist scheduling, rendering slicing, and virtual screen splitting/recomposition for intuitive operation and creative display.

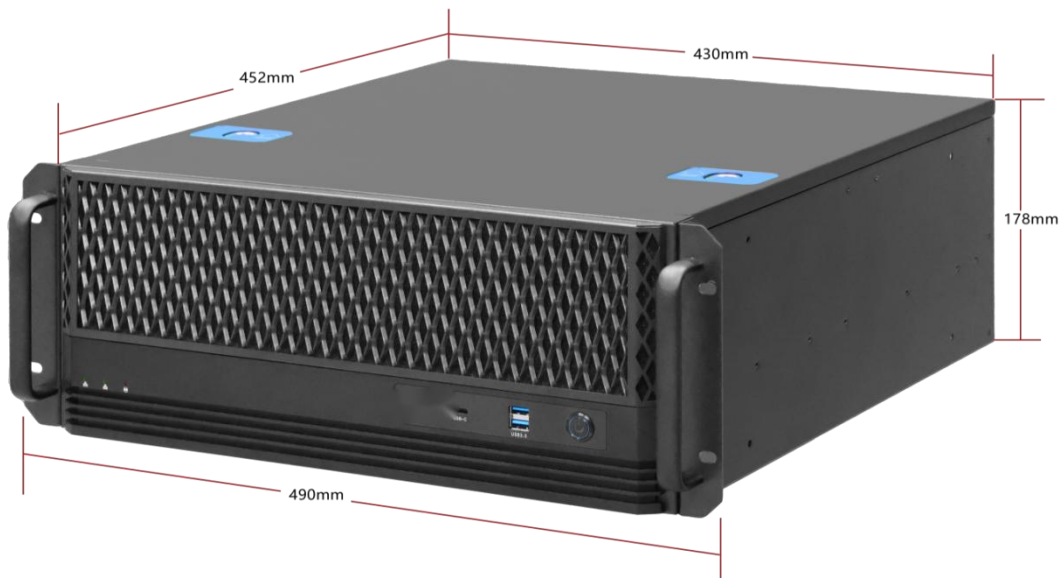
Supports multi-server cascading for unified control across multiple displays. Optional sync cards enable frame-synchronized splicing for beyond-16K ultra-large resolution output.

Product Features

1. 4U rack-mountable server, supports rail installation and 360° water cooling
2. Supports up to 35.38 million pixels; 4×4K×2K@120Hz DP1.4 outputs (convertible to HDMI/DVI/VGA)
3. Supports 16-layer windowing and 4-channel independent audio output
4. Supports 1×16K@60fps software decoding, 1×8K@60fps hardware decoding, 4×4K@60fps hardware decoding, and multi-channel 2K decoding
5. 4 independent signal outputs; single-channel output customizable up to 8192 px
6. 4-channel splicing output; EDID lock to avoid disorder; single-screen fusion up to 16384×16384 px
7. 2×HDMI2.0 + 1×DP1.4 control monitor outputs (no rendering channel usage)
8. Dual-channel DDR5 memory, max 96 GB DDR5-9400
9. PCIe 4.0 SSD support; up to 3×M.2 NVMe SSDs
10. Debug LED indicators and debug pin header for fault diagnosis
11. TPM pin header for hardware encryption module
12. Front 10G Type-C port for fast media loading from external storage
13. PCIe Resizable Bar for improved CPU-GPU data transfer efficiency
14. External C_MOS button for one-click BIOS reset
15. 2.5G wired Ethernet + dual-band Wi-Fi for flexible networking
16. Professional multimedia playback system; multi-unit cascading & unified control; visual playlist scheduling
17. Frame-sync cascading via NVIDIA Quadro SYNC II for beyond-16384 px synchronized output
18. On-demand media import; batch folder import; media library sorting, filtering, and quick search
19. Playback control: FF/FR, pause, stop, loop, jump, end, fade in/out, auto-run
20. Unattended operation: auto-start on boot, auto-minimize, scheduled playback
21. Custom hotkeys; one-click lock, one-click black screen, one-click jump
22. Column-based playlist switching; multi-window sync; master-slave window sync
23. Decodes H.264/AVC, HEVC/H.265, AV1, HAP up to 16K
24. Supports PPT, Word, Excel, image slideshows, dynamic web pages
25. Lossless image sequence playback: BMP, TIFF, TGA, JPG, PNG
26. Input sources: network stream, NDI, optional DP/SDI/DVI/HDMI/CVBS capture cards

27. Unlimited slicing; batch import, pixel- by- pixel calibration for creative LED screens
28. Multi- virtual screen recombination; custom output splitting and mapping for extra- long displays
29. Layer compositing, chroma key, mask, crop, mirror, rotate, mosaic, blur, transparency (lossless)
30. U- disk playback; mobile disk priority; hardware ID binding for authorized auto- play
31. Folder simple playback mode: sequential playback or text- based schedule
32. Supports TCP/UDP network commands; open protocol for 3rd- party central control
33. Tablet direct control (no central controller); PPT presenter as remote control
34. Web browser control; separate scheduling & playback; preview without affecting output
35. DMX lighting sync: control play/pause/stop via external DMX
36. Supports LTC/MTC timecode for show synchronization (light, audio, video consoles)

Dimensions

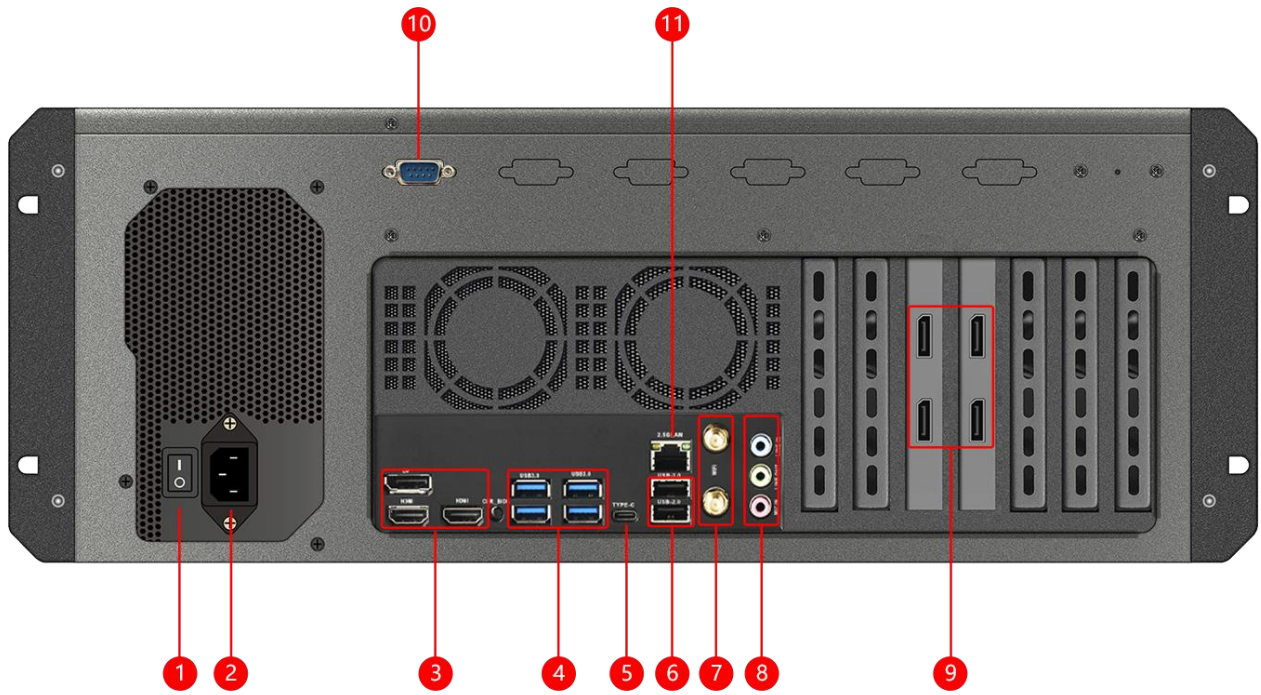


Panel Interfaces



Front Panel

No.	Interface	Qty	Description
1	Indicators	3	• LAN ×2, Data R/W ×1
3	Type- C	1	USB Type- C
4	USB	2	Type- A USB3.0 (mouse/keyboard)
5	Power Button	1	System power



Rear Panel

No.	Interface	Qty	Description
1	AC Switch	1	Main power switch
2	Power Input	1	110-240V AC 50/60Hz
3	Control Output	3	2×HDMI + 1×DP (control monitor)
4	USB	4	USB3.0
5	Type- C	1	Type- C (external HDD)
6	USB	1	USB2.0
7	Wi- Fi	2	External Wi- Fi antenna
8	Audio	3	3.5mm: In / Out / Mic
9	Video Output	4	DP (to sender/displays)
10	COM	1	RS232/485
11	Ethernet	1	RJ45

Hardware & Software

Item	Spec
CPU	Intel 13th Gen i9, 24C/32T, Turbo 5.6 GHz
Memory	2×16 GB DDR5-5600
Storage	1 TB NVMe M.2 SSD
Render GPU	NVIDIA RTX A4000 16 GB
Control GPU	Intel UHD Graphics (13th Gen)
PSU	750 W
Chassis	4U server chassis
Cooling	Air cooling
OS	Windows 11 Pro
Software	Professional Multimedia Playback System (Standard)

Specifications

Item	Details
Electrical	100-240V~ 6A 50/60Hz; 750W max
Mounting	4U rack- mount (19- in standard cabinet)
Dimensions	452×490×178 mm
Operating Environment	5-35°C, 5-95% RH (non- condensing)
Storage Environment	-10-+60°C, 0-95% RH (non- condensing)
Package Size	625×575×265 mm
Standard Accessories	Power cord ×1, Test report ×1, Certificate ×1, Packing list ×1

Supported Media Formats

Type	Formats
Video	MP4, AVI, MKV, FLV, MOV, WMV, MPEG, MPG, M4V, WebM, HAP
Audio	MP3, AAC, FLAC, AMR, APE, WAV, WMA
Image	JPG, JPEG, BMP, PNG, GIF, ICO, sequences
Text	TXT
Streaming	NDI, HTTP, RTSP, RTP, RTCP, RTMP, MMS, HLS
Web	Any accessible web page
Office	PPT (1080P)

Recommended Video Encoding & Bitrate

4K–8K (≤8192×4320): H.265 (HEVC) or VP9

≤4K: H.264 (AVC)

Ultra- 8K (≤15360×7680): HAP

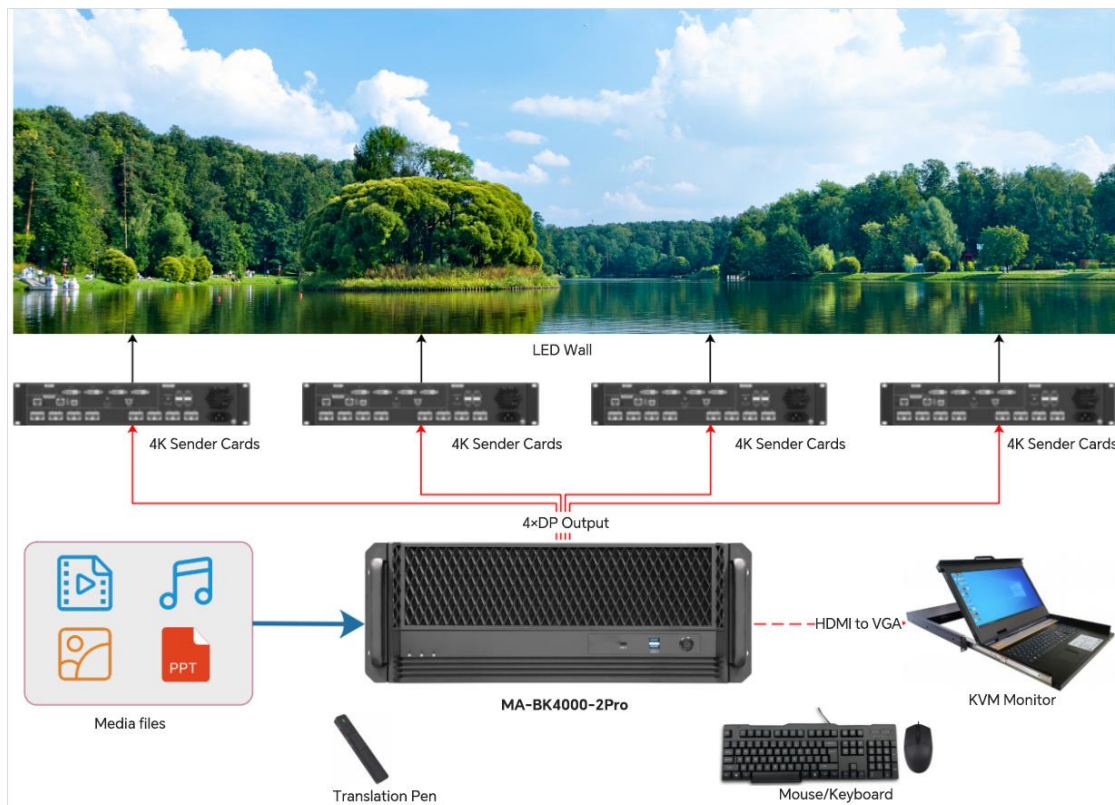
Recommended Bitrate (SDR)

Resolution	24–30 fps	48–60 fps
4320p (8K)	70–100 Mbps	100–140 Mbps
2160p (4K)	35–45 Mbps	55–70 Mbps
1080p (2K)	10 Mbps	16 Mbps

Packing List

Item	Qty	Unit
Main Unit	1	pc
Power Cord (1.8m)	1	pc
Certificate of Conformity	1	pc
Test Report	1	pc
Function Checklist	1	pc
Packing List	1	pc

Typical Application



Usage Notes

Place horizontally; do not invert or stand vertically

Install in 19- in standard cabinet; cabinet load capacity $\geq 4 \times$ total equipment weight

Secure with 4xM5 panel screws