8K Projection Fusion Processors

Product Specifications

Model：RDRH-SW0404-1U

I. Product Overview

This professional 8K desktop image fusion hardware, specifically designed for projectors, achieves multi-channel projection image blending through image geometric correction and edge blending technology, supporting both flat and curved surface projections. It integrates multimedia playback control, information publishing, cluster management functions, and an application platform, delivering powerful interactive and playback capabilities.

It supports multi-platform terminal control via Windows, Mac OS, iOS, and Android, enabling arbitrary multi-window display and roaming. Tailored for diverse application scenarios, it integrates with video conferencing systems, surveillance systems, live streaming, and local media playback. Two scene modes (Desktop Mode and Window Mode) ensure optimal display for document presentations, video playback, and remote meetings.

The product supports control via infrared remote, mouse, tablet, smartphone, or computer, making it widely applicable for commercial display scenarios across government and enterprise sectors, conference rooms, hotel design, healthcare, education, and more.

II. Features and Functions

✦ Supports video post-processing: deinterlacing, noise reduction, edge/detail/color optimization.

✦ Supports MSATA expansion, USB flash drive extension, and direct plug-and-play streaming.

✦ Supports online/local playback of video, audio, images, PPT, webpages, etc.

✦ Supports multiple communication methods including Wi-Fi, Gigabit Ethernet, and direct USB cable connection.

✦ Supports 1 channel 3.5mm audio output with synchronized audio-video output.

✦ Supports cluster management within LAN/WAN networks and remote information publishing.

✦ Supports multi-window playback with up to 23 1080P video windows for flexible windowing, roaming, overlay, and tiled display.

✦ Customized desktop UI system based on Linux, allowing optional addition of Linux applications.

✦ Supports personalized subtitle management including single-line text, static text, and scrolling text, along with clock and weather forecast display functions.

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forecast display functions.

✦ Supports keyboard/mouse control, infrared remote control, and mobile/tablet control.

✦ Supports network streaming media playback, network camera decoding, and quick access to live stream links.

✦ Supports 64GB local storage for saving customer video content.

✦ Supports 64GB local storage for preserving customer video content.

✦ Supports central control functions, enabling remote operation of curtains, air conditioning, audio systems, LED power distribution boxes, and more.

✦ Centralized management of multiple devices, supporting unified control via PC or tablet software.

This facilitates centralized oversight of multiple devices by administrators, eliminating the need to switch between multiple control software interfaces.

✦ Screen mirroring function: Users can directly mirror the current window signal on the control terminal (PC or tablet), enabling real-time monitoring of whether each signal is functioning properly. This resolves the limitation of existing fusion systems where window mirroring cannot be achieved on the control terminal, ensuring true centralized management.

✦ Display feedback function: Users can directly view the current

window opening signal on the control terminal (computer or tablet), enabling real-time monitoring of each signal's status. This resolves the limitation of existing fusion processors that cannot display window feedback on the control terminal, achieving true visual management of input channels.

✦ A single device supports up to 12 projectors for seamless point-to-point display.

III. Technical Specifications

Category	Item	Specifications
Hardware Configuration	CPU	Octa-core 64-bit architecture, 8nm LP process, frequency 2.4GHz
	GPU	Mali-G610 MC4, supports AFBC (Arm Frame Buffer Compression), 8K codec
	NPU	AI accelerator, computing power 6 TOPS
	RAM	Default 4GB, supports up to 32GB LPDDR4x (64-bit)
	Storage	Default 64GB, supports eMMC 5.1
	Power	DC 12V input

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Interface Parameters	HDMI-OUT	1-12 outputs: max. resolution 1920× 1200@60Hz
	HDMI-IN	HDMI 1-4 input, supports up to 4K@60Hz
	LAN	1000M Ethernet port
	RS232	Control serial port (Supports controlling this device and external equipment)
	USB 3.0 / USB 2.0	Supports connecting USB drives/keyboards
	SET	Function port selection
	SPDIF	S/PDIF audio signal interface
	AUDIO-OUT	3.5mm audio output port (1 channel)
	AUDIO-IN	3.5mm audio input port (1 channel)
	USB-C	For device firmware burning/upgrade only
	WiFi	External WiFi module (optional)
	mSATA	Expanded storage capacity (optional, supports mSATA drive)
Environmental Parameters	Operating Temperature	0℃ ～ 50℃

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	Operating Humidity	10% ~ 75% RH (non-condensing)
	Storage Temperature	-25℃ ~ +125℃
Physical Specifications	Net Weight	3.2kg
	Gross Weight (with packaging)	4.2kg
	Chassis Dimensions	482 × 262 × 44 mm
Packaging Specifications	Package Dimensions	550 × 380 × 130 mm
	Package List	1 × Main Unit, 1 × Power Adapter, 1 × Certificate of Conformity, 1 × IR Remote Controller, 5 × Phoenix Terminal Plugs

IV. Product Dimensions

1U chassis (supports up to 12 outputs)
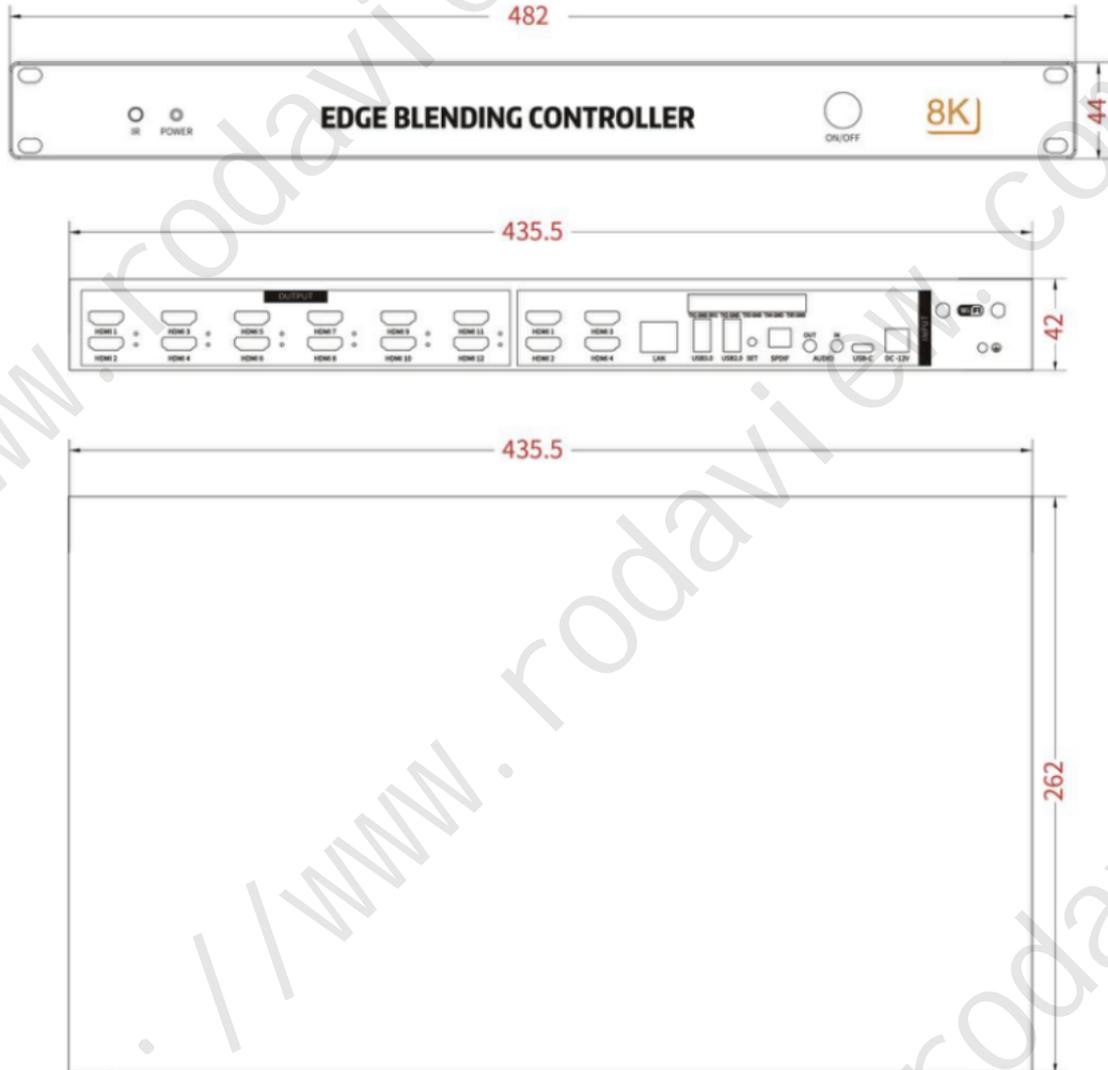
V. Panel Buttons and Ports
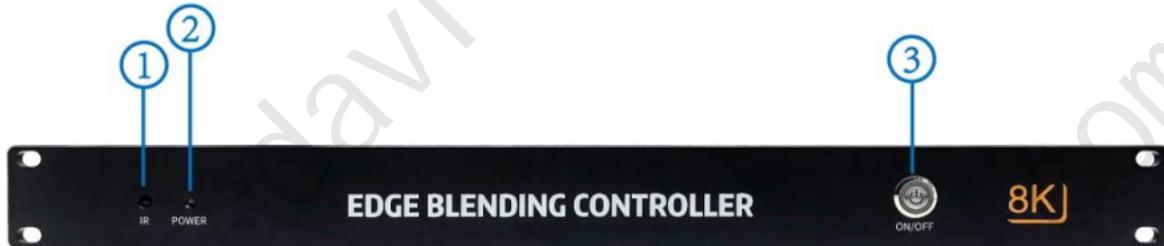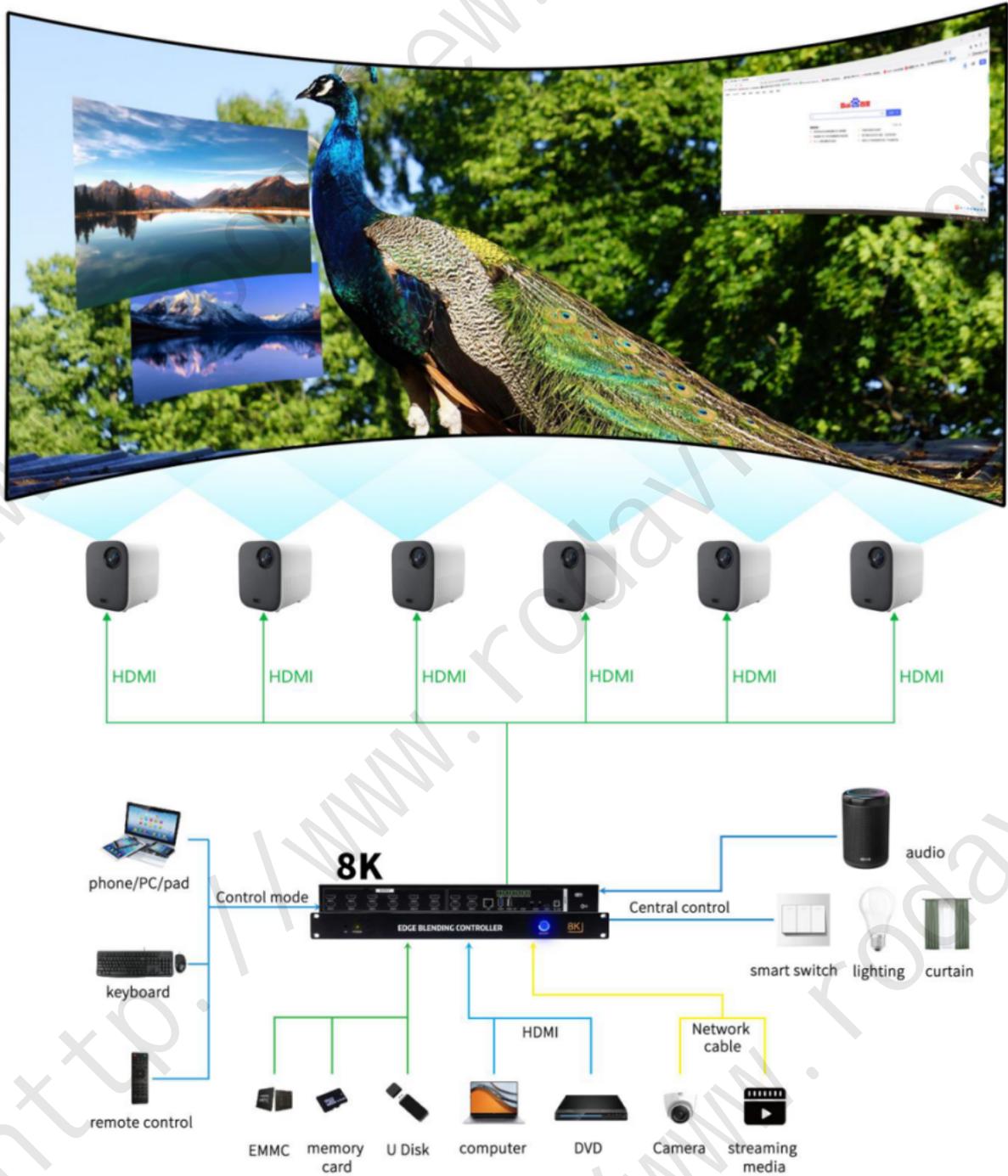

No.	Interface	Description
1	IR	Infrared, receives infrared signals
2	POWER	Power indicator, green light on indicates normal operation
3	ON/OFF	Power ON/OFF switch button
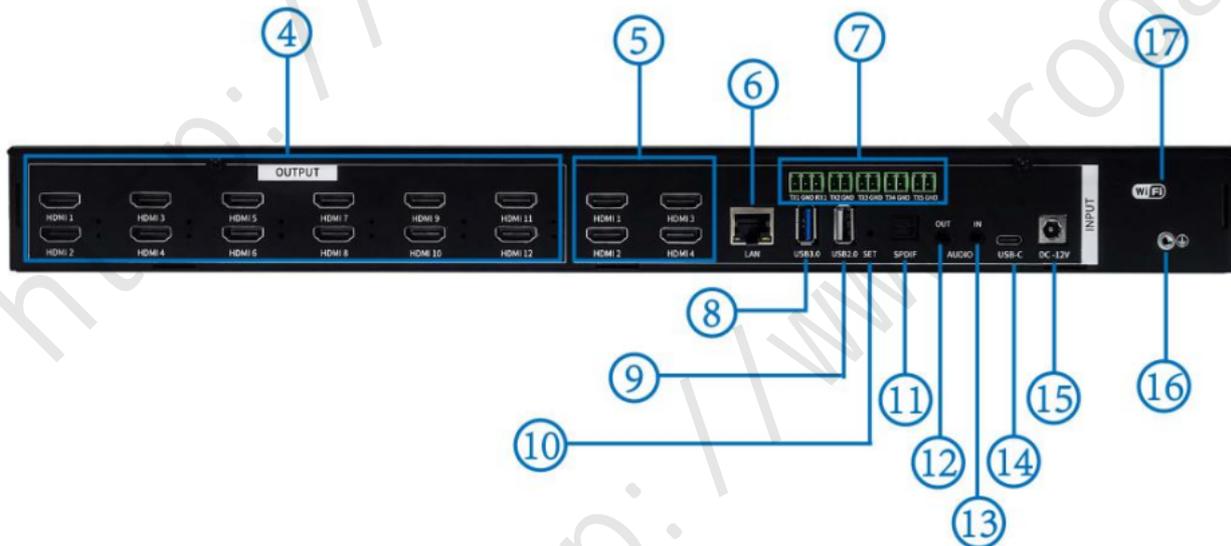
4	HDMI-OUT	1-12 outputs: max. resolution 1920x1200@60Hz
5	HDMI-IN	HDMI 1-4 input: max. resolution 4K@60Hz
6	LAN	1000M Ethernet port for network connection
7	RS232	Control serial port input/output interface, controls this device or external equipment
8	USB 3.0	Connect USB drives, mouse, keyboard
9	USB 2.0	Connect USB drives, mouse, keyboard
10	SET	Function port selection
11	SPDIF	Supports S/PDIF audio signal
12	AUDIO-OUT	Supports one 3.5mm audio output channel
13	AUDIO-IN	Supports one 3.5mm audio input channel
14	USB-C	Device firmware burning/upgrade
15	DC-12V	DC-12V power input
16	WiFi	For connecting to external WiFi (Optional)
17	MSATA	Connect mSATA drive to expand storage capacity (Optional)

VI. Connection Diagram

VII. Cloud Management System Framework

Terminal 1 Terminal 2 Terminal 3 Terminal 4

router switch

Local Area Network (Intranet) 4G/Wide Area Network (External Network)

Local Area Network Cloud services

Multi terminal management

computer pad