

Z5

LED Video Controller

Specification V1.0



Overview

Z5, a new generation of professional LED video controller, is designed specially to meet the ultra-low latency display, HDR and wide color gamut needs of live event, broadcast, television, filming and other scenarios, where real time, low-latency processing and color fidelity is required for Ultra HD image and LED display control. Z5 includes features providing excellent vision effect for user.

Features

Input

- Full 4K inputs: HDMI2.0, DP1.2, 12G-SDI.
- Single port supports up to 4096 × 2160@60Hz.
- Support 8bit / 10bit video signal input.
- Support HDCP1.4/HDCP2.2.
- Support input frame rate from 23.98Hz to 240Hz.

Output

- Maximum capacity of 13.1 million pixels, with maximum 16384 pixels in width and maximum 8192 pixels in height.
- 20-channel Gigabit Ethernet port output; 2-channel 10 Gigabit fiber port output.
- Support output frame rate of 23.98Hz to 240Hz.
- Support both Ethernet port redundancy and controller redundancy.

Video processing

- Video cropping, broadcasting level switching and scaling.
- Up to 3-window display, support 1-channel 4K and 2-channel HD signal display.
- Low latency, minimum one frame delay.
- HDR10 / HLG display.
- Genlock function.

Color adjustment

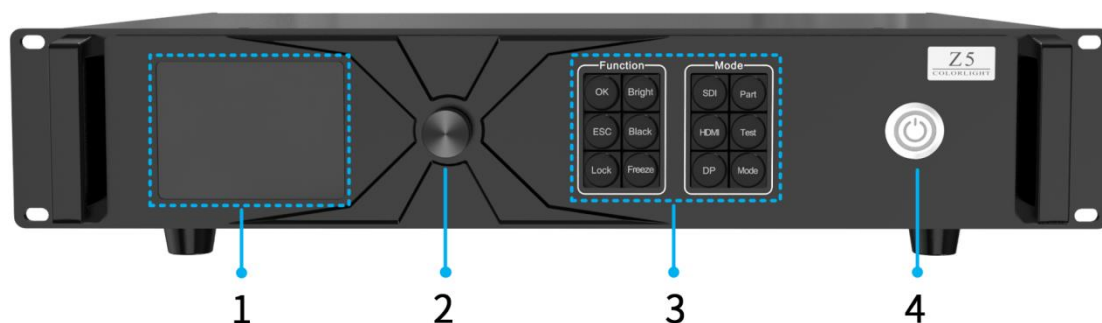
- Picture adjustment for hue, saturation, contrast, and brightness compensation.
- Brightness adjustment, support network port grouping brightness adjustment.
- Color temperature adjustment with precision and RGB independent adjustment.

Control

- USB port for control and cascading.
- RS232 port.
- LAN port for TCP/IP control.

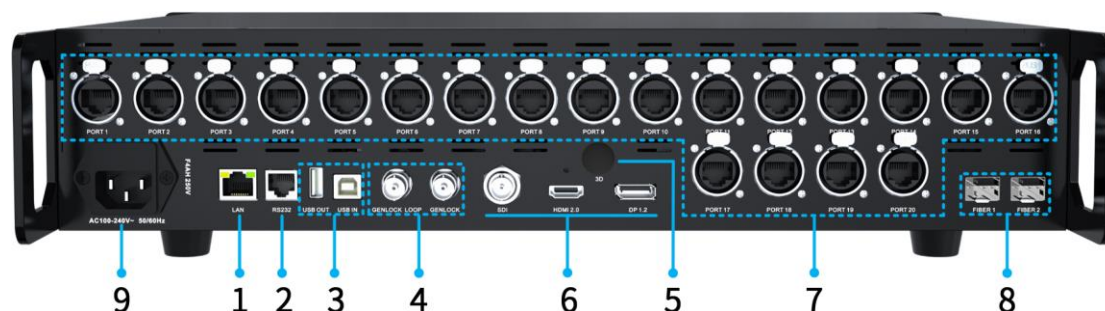
Appearance

Front panel



No.	Name	Description
1	LCD screen	Displays the operation menu and system information.
2	Knob	Select an item or adjust the parameter, press the knob to confirm your selection or adjustment.
3	Function keys	• OK: confirm button. • ESC: exit the current interface. • Lock: lock buttons of front panel. • Bright: tune brightness. • Black: black screen. • Freeze: freeze screen. • SDI: switch to SDI signal. • HDMI: switch to HDMI signal. • DP: switch to DP signal. • Part: crop or show the switch buttons in full screen. • Test: test patterns. • Mode: select a preset.
4	Power switch	Power button.

Rear panel



Control		
1	LAN	Connect to a computer, or connect to a switch for accessing local area network, or act as Art-net control port.
2	RS232	With 115200 baud rate for connecting to the third-party device.
3	USB IN	• USB2.0 Type-B. • Connect to a PC for debugging or cascading input.
	USB OUT	• USB2.0 Type-A. • As cascading output.
Genlock		
4	GENLOCK	• Connect to an external synchronization source. • Support Bi-level and Tri-level sync, frame rates from 23.98 to 60Hz.
	GENLOCK LOOP	• Loop out genlock signal.
3D		
5	3D*	4-pin S terminal connector, output 3D sync signal (optional, for use with active 3D glasses).
Input		
6	12G-SDI	• Support SMPTE 2082 / 2081 / 424M / 292M, HD / 3G / 6G-SDI / 12G-SDI(2SI mode) / level A / B. • Maximum 4096×2160@60Hz. • Support deinterlaced display and does not support EDID settings.
	HDMI2.0	• Standard HDMI 2.0, support HDCP2.2/HDCP1.4. • Maximum resolution 4096×2160@60Hz, Maximum pixel clock 600MHz. - Maximum 8192 (8192×1080@60Hz) in width. - Maximum 8192 (1080×8192@60Hz) in height. • Support EDID settings.

	DP1.2	• 1-channel DisplayPort1.2. • Standard DP1.2, support HDCP2.2/HDCP1.4. • Maximum 4096×2160@60Hz, Maximum pixel clock 600MHz. - Maximum 8192 (8192×1080@60Hz) in width. - Maximum 8192 (1080×8192@60Hz) in height. • Support EDID settings.
Output		
7	PORT 1-20	• 20-channel Gigabit Ethernet port, Neutrik (NE8FBH) port, compatible with standard RJ45 port. • Device load capacity: - Maximum width or height is 8192 pixels. - When output frame rate is 60Hz, 8bit color depth supports up to 13.1 million pixels and 10bit supports up to 9.83 million pixels. - When output frame rate is 120Hz, 8bit color depth supports up to 6.55 million pixels and 10bit supports up to 4.91 million pixels. • Load capacity of one network port: - When output frame rate is 60Hz, 8bit color depth supports up to 650 thousand pixels and 10bit supports up to 490 thousand pixels. - When output frame rate is 120Hz, 8bit color depth supports up to 320 million pixels and 10bit supports up to 240 million pixels.
8	FIBER 1, FIBER 2	• 2-channel 10G output fiber port (purchase separately 10G SFP+ optical module, transmission distance depends on optical module specifications). • Automatically copy the output data of 20 network ports. FIBER 1 corresponds to network port PORT 1-10, fiber 2 corresponds to network port PORT 11-20. • Select manually the signal output between network ports and fiber.
Power		
9	Power Socket	AC100-240V, 50 / 60Hz, built-in fuse.

*The equipment shown in the picture is for reference only. Due to the difference of boards assembled, the appearance of the equipment may be different from the picture. Please refer to the actual product.

Signal format

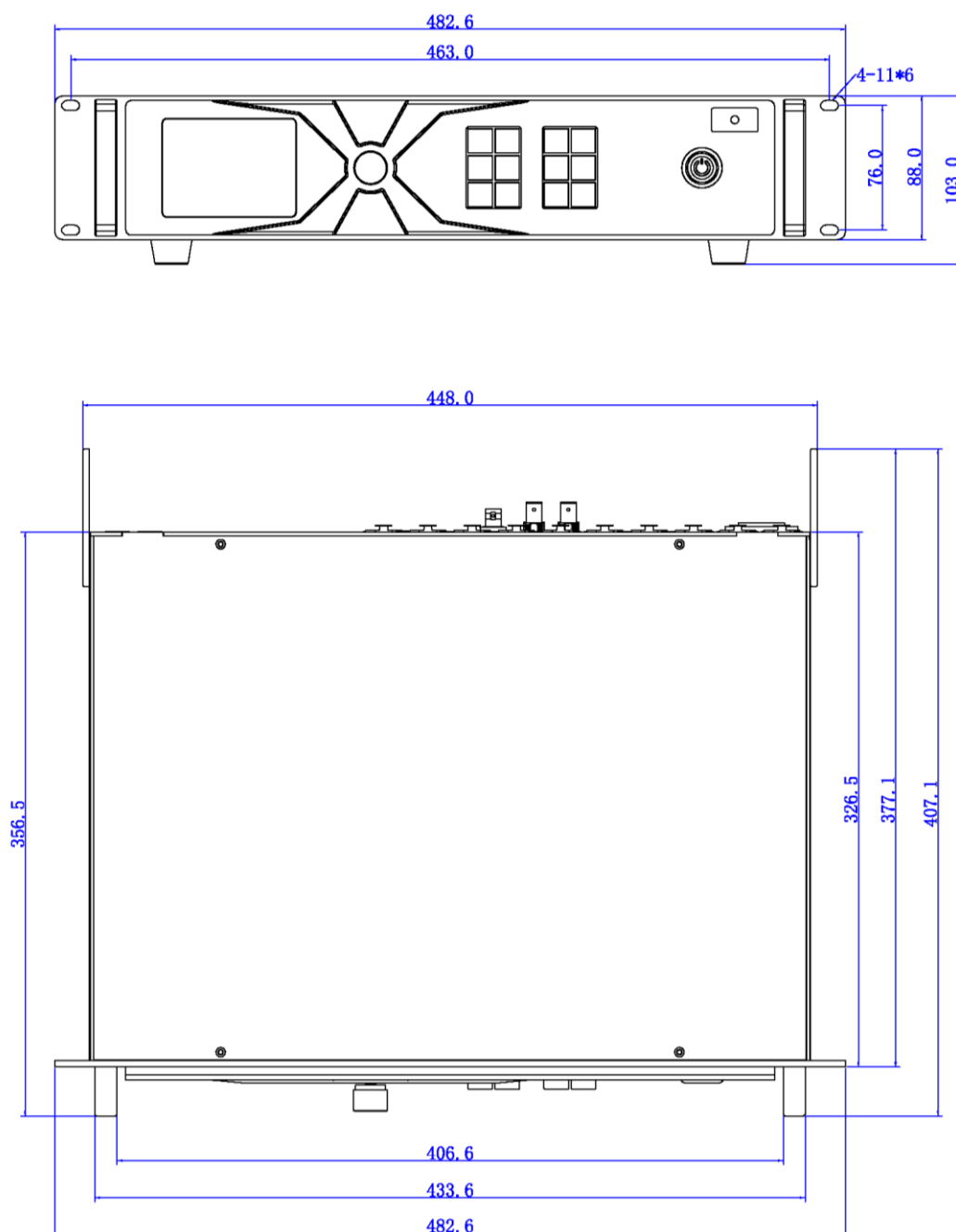
HDMI2.0					
Input	Color space	Sampling	Color depth	Max Resolution	Frame rate
4K	YCbCr	4:2:2	8,10bit	4096×2160@60Hz	23.98, 24, 25, 29.97,
	YCbCr/ RGB	4:4:4	8bit	4096×2160@60Hz	30, 50, 59.94, 60, 100,
	YCbCr/ RGB	4:4:4	10bit	4096×2160@30Hz	120, 144, 200, 240.
Only some of the regular resolutions are shown above.					
DP1.2					
Input	Color space	Sampling	Color depth	Max Resolution	Frame rate
4K	YCbCr	4:2:2	8,10bit	4096×2160@60Hz	23.98, 24, 25, 29.97,
	YCbCr/ RGB	4:4:4	8bit	4096×2160@60Hz	30, 50, 59.94, 60, 100,
	YCbCr/ RGB	4:4:4	10bit	4096×2160@30Hz	120, 144, 200, 240.
Only some of the regular resolutions are shown above.					
12G SDI					
Input	Color space	Sampling	Color depth	Max Resolution	Frame rate
12G	YCbCr	4:2:2	10bit	4096×2160p@60Hz	23.98, 24, 25, 29.97, 30, 50, 59.94, 60.
6G	YCbCr	4:2:2	10bit	4096×2160p@30Hz	
3G Level A/B	YCbCr	4:2:2	10bit	2048×1080p@60Hz	
HD	YCbCr	4:2:2	10bit	2048×1080p@30Hz	
	YCbCr	4:2:2	10bit	1920×1080i@60Hz	
	YCbCr	4:2:2	10bit	1280×720p@60Hz	
Only some of the regular resolutions are shown above.					

Parameters

Dimensions (W×H×D)	
Unboxed	482.6mm (19") × 88.0mm (3.4") × 407.1mm (16.0"), 2U chassis (w / o foot pads)
Boxed	655.0mm (25.7") × 245.0mm (9.6") × 615.0mm (24.2")
Weight	
Net weight	5.85kg (12.90lbs)
Total weight	7.65kg (16.87lbs)
Electrical specification	
Power input	AC100-240V, 50 / 60Hz
Rated power	75W
Operating environment	
Temperature	-20°C~55°C (-4°F~131°F)
Humidity	0%RH-90%RH, no-condensing
Storage environment	
Temperature	-30°C~80°C (-22°F~176°F)
Humidity	0%RH-90%RH, no-condensing
Certification	
CCC, CE, FCC, CB, IC, cTUVus. * If there is no certification for the country or region where the product is sold, please contact Colorlight to confirm it right away. Otherwise, if the relevant legal risks are caused, the customer shall bear it or Colorlight has the right of recourse.	

Reference dimensions

Unit: mm



Statement

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