Colorlight

VX6

LED Video Controller

Specification V1.0

Overview

VX6 is Colorlight’ s video controller, which integrates the functions of UHD images processing and LED display control. The device supports the input of 4K and 2K video signals, with a maximum loading capacity of 3.93 million pixels (up to 16,384 pixels in width, and 8,192 pixels in height). In terms of output, it supports Ethernet port and fiber port output, which can satisfy different demands. With strong video processing and sending capacity, VX6 is applicable broadly in such scenarios as medium and high-end rental, stage control, radio and television, film shooting, etc.

Features

Input

- Video input port:
  - 1×HDMI2.0
  - 1×HDMI1.4 (IN&LOOP)
  - 1×DVI (IN&LOOP)
  - 1×DVI
  - 1×3G-SDI (IN&LOOP)
  - 1×10G fiber port (Fiber1)
- Up to 4096x2160@60Hz input.
- Support 8bit/10bit video signal.
- The HDMI2.0 port supports HDCP2.2 standard and is compatible with HDCP1.4 standard.
- The HDMI1.4 and DVI ports support HDCP1.4 standard.
- 23.98Hz to 240Hz frame rate.

Output

- 6× Gigabit network ports.
  - Maximum loading capacity of 3.93 million pixels, with up to 16,384 pixels in width and 8,192 pixels in height.
- 2× 10 Gigabit fiber ports.
  - Fiber1 copies 6× Ethernet ports.
  - Fiber2 copies/backups 6× Ethernet ports.
- 1× HDMI1.3 as previewing or video output port.
- 23.98Hz to 240Hz frame rate.
- Support both Ethernet port backup and controller redundancy.

Video processing

- Support 8bit and 10bit video processing.
- Video signal cropping, switching, and broadcasting-level scaling.
- Support 3× layers display, as well as independent adjustment of size and position of layers.
- Low latency; no latency achievable in Bypass mode.
- Support HDR display.
- Support Genlock and LOOP through.

Color adjustment

- Image adjustment: Support adjusting the hue, saturation, contrast, and brightness compensation of output.
- Brightness adjustment: Support adjusting brightness by Ethernet port groups.
- Color temperature adjustment: Support adjusting color temperature accurately and RGB component individually.

Audio input/output

- HDMI port supports audio input.
- Support audio output via multi-function card.

3 working modes

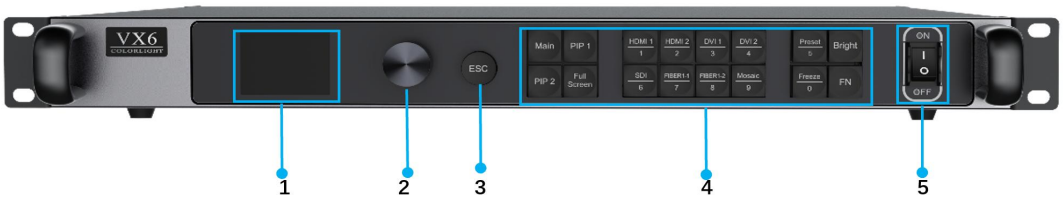
- Video processor
- Fiber optic transceiver
- Bypass

Device control

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

Appearance

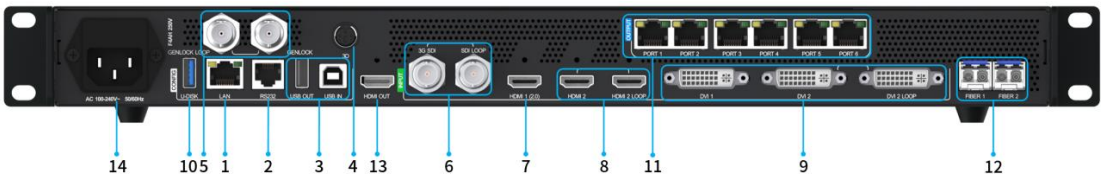
Front panel



No.	Item	Description
1	LCD	Display operation menu and system information.
2	Knob	• Press to enter sub-menu or confirm selection. • Rotate to select menu item or tune parameters.
3	ESC	Exit current interface.
4	Function buttons	• **MAIN / PIP1 / PIP2:** Open/Close the layer and display layer status. • **FULL Screen:** Enable full screen auto-scaling. • **HDMI 1 / HDMI 2 / DVI 1 / DVI 2 / SDI / Fiber 1-1 / Fiber 1-2 / Mosaic:** Switch to corresponding signal. • **Preset:** Select a preset. • **Bright**: Tune brightness. • **Freeze:** Freeze the current frame of the output image. • **FN:** A customizable function button.
5	Power switch	Power on/off the device.

*The illustration is for reference only. Since the appearance of equipment may vary due to different production process, please refer to the actual product.

Rear panel



Control		
1	LAN	• RJ45 port for accessing local area network.
2	RS232	• RJ11(6P6C) port* for connecting to central control.
3	USB IN	• USB2.0 Type B port ; Support cascading input and connection with PC for parameter configuration.
	USB OUT	• USB2.0 Type A port for cascading output.
3D port		
4	3D*	Output 3D sync signal (Optional, work with active 3D glasses).
Genlock		
5	GENLOCK	• 1× BNC port, male, for the input of an external synchronization source. • Support Bi-level and Tri-level sync. • Support 23.98~60Hz frame rates.
	GENLOCK LOOP	• 1× BNC port, male. • Loop out Genlock sync signal.
Input		
6	3G SDI SDI LOOP	• 1× SDI input, support Loop output. • Support ST-424(3G), ST-292(HD), and ST-259(SD) standard video source input. • Maximum resolution: 1920×1080@60Hz • Support de-interlaced display. • Not support EDID settings.
7	HDMI 1 (2.0)	• 1× HDMI2.0 input, backward compatible with HDMI1.4 and HDMI1.3. • Maximum resolution: 4096×2160@60Hz, minimum resolution: 800×600@60Hz, maximum pixel clock: 600MHz. • Custom resolution: - Maximum width: 8192 (8192×1080@60Hz). - Maximum height:8192 (1080×8192@60Hz). • Support independent EDID settings and comply with EDID V1.3 standard. • Support HDCP2.2 standard and compatible with HDCP1.4 standard.

		• Support HDR. • Support audio input. • Not support interlaced signal inputs.
8	HDMI 2 HDMI 2 LOOP	• 1× HDMI1.4 input, HDMI 2 support LOOP output. • Maximum resolution: 3840×1080@60Hz/3840×2160@30Hz, minimum input resolution: 800×600@60Hz. • Custom resolution: - Maximum width: 4096 (4096×512@60Hz). - Maximum height:4096 (512×4096@60Hz). • Support independent EDID settings and comply with EDID V1.3 standard. • Support HDCP1.4, backward compatible. • Support audio input. • Not support HDR. • Not support interlaced signal inputs.
9	DVI 1 DVI 2 DVI 2 LOOP	• 2× DVI input; DVI 2 support Loop output. • Maximum resolution: 3840×1080@60Hz/3840×2160@30Hz, minimum resolution: 800×600@60Hz. • Custom resolution: - Maximum width: 4096 (4096×512@60Hz). - Maximum height:4096 (512×4096@60Hz). • Support HDCP1.4, backward compatible. • Support independent EDID settings and comply with EDIDV1.3 standard. • Not support audio input. • Not support HDR. • Not support interlaced signal input.
10	U-DISK	• USB drive port; support receiver card parameter configuration and firmware upgrading.
Output		
11	PORT 1-6	6× 1G Ethernet ports. • Overall loading capacity, 3.93 million pixels: - Up to 16,384 pixels in width and 8,192 pixels in height. - 8bit@60Hz: 3.93 million pixels; 10bit@60Hz: 2.94 million pixels. - 8bit@120Hz: 1.96 million pixels; 10bit@120Hz: 1.47 million pixels. - 8bit@240Hz: 0.98 million pixels; 10bit@240Hz: 0.73 million pixels. • Loading capacity per port, 650,000 pixels: - 8bit@60Hz: 650,000 pixels; 10bit@60Hz: 490,000 pixels.

		- 8bit@120Hz: 320,000 pixels; 10bit@120Hz: 240,000 pixels. - 8bit@240Hz:160,000 pixels; 10bit@240Hz: 120,000 pixels. • Communication distance: The recommended maximum cable (CAT5e) run length is 100 meters. • Support redundancy.
12	Fiber 1-2	• 2× 10G fiber ports (optional 10G SFP+ optical module. Transmission distance depends on optical module specifications). • Fiber1: Fiber port self-adaptive, either for input or output. - When fiber optic transceiver is the device to be connected, the fiber port works as an output port. - When 6× Ethernet ports and Fiber1 are all connected, the Fiber1 works normally while the 6× Ethernet ports do not work - When Fiber1 is not connected while the 6× Ethernet ports are connected, the 6× Ethernet ports work normally. - When fiber port of the vide processor is the device to be connected, the fiber port works as an input port. - Fiber1 supports up to 1× 4K×1K@60Hz or 2× 2K×1K@60Hz video source inputs. • Fiber2: For output only. - Copy mode: Support copy of the transmission of 6× Ethernet ports data during output. - Backup mode: Support 6× Ethernet ports data backup during output. - Video loop output mode: Support up to 1× 4K×1K@60Hz or 2× 2K×1K@60Hz video source. - Optional loop output video source: SDI, HDMI1(2.0), HDMI2, DVI1, DVI2, Fiber1, Fiber1.
13	HDMI OUT	• 1× HDMI1.3 port • Support output preview or video output; the video output supports different resolutions.
Power		
14	AC100-240V	Port for power input; 100-240V; 50/60Hz; with built-in fuse.

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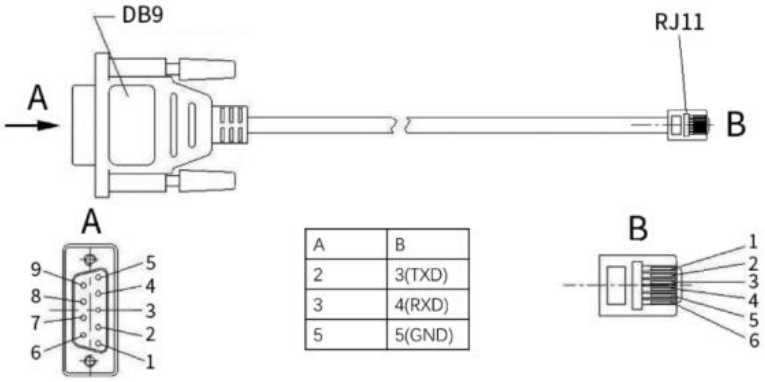
* The schematic of RJ11 (6P6C) to DB9 cable is shown as follows:



A	B
2	3(TXD)
3	4(RXD)
5	5(GND)

Signal format

SG-SDI					
Input	Color space	Sampling	Color depth	Max. resolution	Frame rate
3G	YCbCr	4:2:2	8/10bit	1920×1080@60Hz	50,59,94,60
	YCbCr	4:2:2	8/10bit	1280×720@60Hz	23.98,24,25,29.97,30,50,59.94,60
HD	YCbCr	4:2:2	8/10bit	1920×1080@60Hz	50,59,94,60
	YCbCr	4:2:2	8/10bit	1280×720@60Hz	23.98,24,25,29.97,30,50,59.94,60
SD	YCbCr	4:2:2	8/10bit	720×576@60Hz	50
	YCbCr	4:2:2	8/10bit	720×480@60Hz	59.94
HDMI2.0					
Input	Color space	Sampling	Color depth	Max. resolution	Frame rate
4K	YCbCr	4:2:2	8/10bit	4096×2160@60Hz	23.98,30,50,59.94,60
	YCbCr/RGB	4:4:4	8bit	4096×2160@60Hz	
	YCbCr/RGB	4:4:4	10bit	4096×2160@30Hz	
2K	YCbCr	4:2:2	8/10bit	1920×1200@60Hz	23.97,24,30,50,59,94,60,100,120,144
	YCbCr/RGB	4:4:4	8bit	1920×1200@60Hz	
	YCbCr/RGB	4:4:4	10bit	1920×1200@30Hz	
HD	YCbCr	4:2:2	8/10bit	1280×1200@60Hz	23.97,24,30,50,59,94,60,100,120,144,240
	YCbCr/RGB	4:4:4	8/10bit	1280×1200@30Hz	
HDMI1.4					
Input	Color space	Sampling	Color depth	Max. resolution	Frame rate
4K	YCbCr	4:2:2	8bit	3840×1080@60Hz	23.98,24,25,29.97,30,50,59.94,60
	YCbCr/RGB	4:4:4	8bit		
2K	YCbCr	4:2:2	8bit	1920×1200@60Hz	23.97,24,30,50,59,94,60
	YCbCr/RGB	4:4:4	8bit	1920×1200@60Hz	
HD	YCbCr	4:2:2	8bit	1280×1200@60Hz	23.97,24,30,50,59,94,60,100,120,144,240
	YCbCr/RGB	4:4:4	8bit	1280×1200@60Hz	
DVI					
Input	Color space	Sampling	Color depth	Max. resolution	Frame rate
4K	RGB	4:4:4	8bit	3840×1080@60Hz	23.98,24,25,29.97,30,50,59.94,60
2K	RGB	4:4:4	8bit	1920×1200@60Hz	23.98,24,25,29.97,30,50,59.94,60

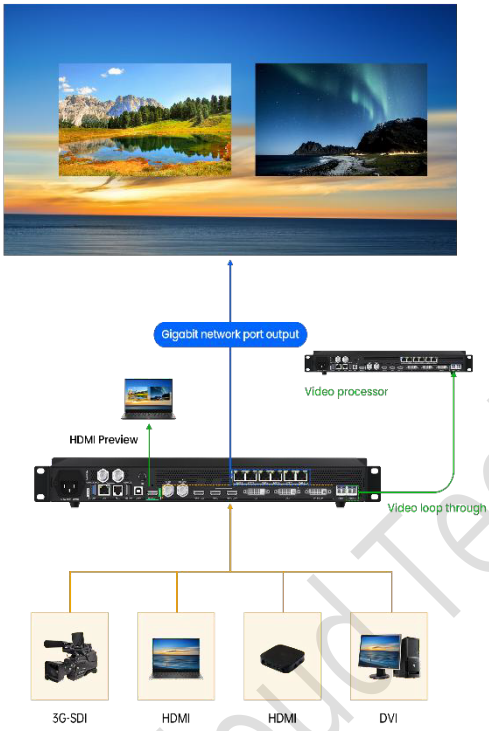
HD	RGB	4:4:4	8bit	1280×1200@60Hz	23.97,24,30,50,59,94,60,100,120,144,240
Only part of the regular resolutions are listed above.					

Parameters

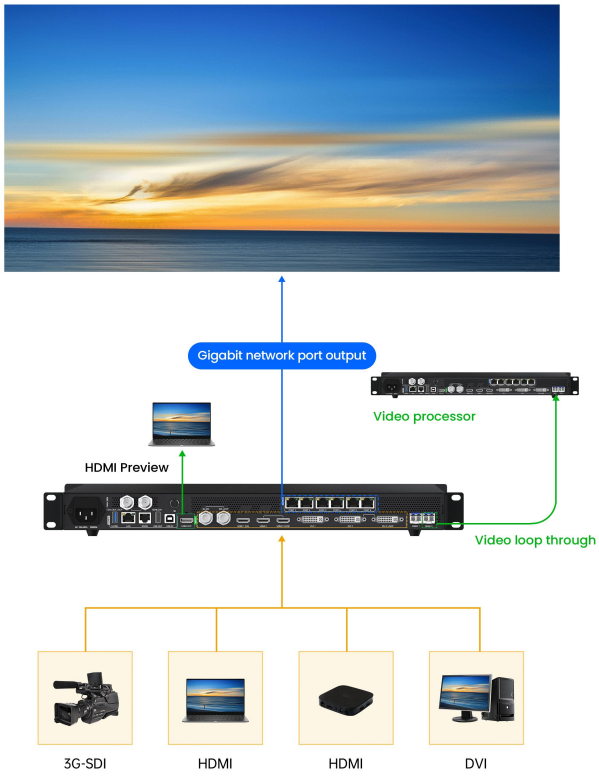
Dimensions (W×H×D)	
Device	482.6mm(19.0")×44.0mm(1.7")×418.7mm(16.5"),1U, without foot pads
Packing	550.0mm(21.7")×115.0mm(4.5")×490mm(19.3")
Weight	
Net	4.8kg (10.58lbs)
Electrical parameters	
Power supply	AC100-240, 50/60Hz
Rated power	80W
Operating environment	
Temperature	-20°C~50°C (-4°F~122°F)
Humidity	0%RH-90%RH, non-condensing
Storage environment	
Temperature	-30°C~80°C (-22°F~176°F)
Humidity	0%RH-90%RH, non-condensing

Applications

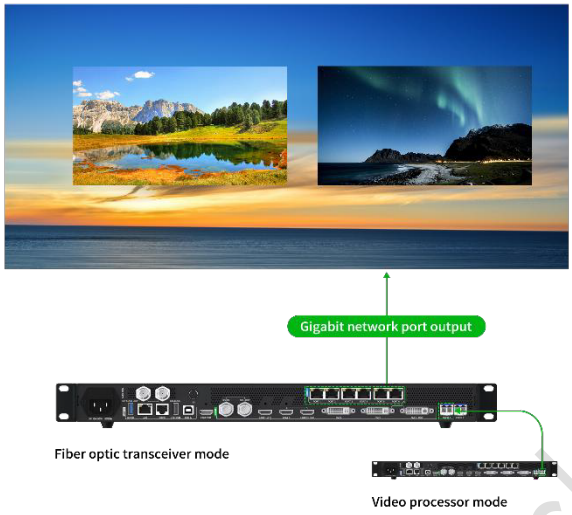
Video processor mode



Bypass mode

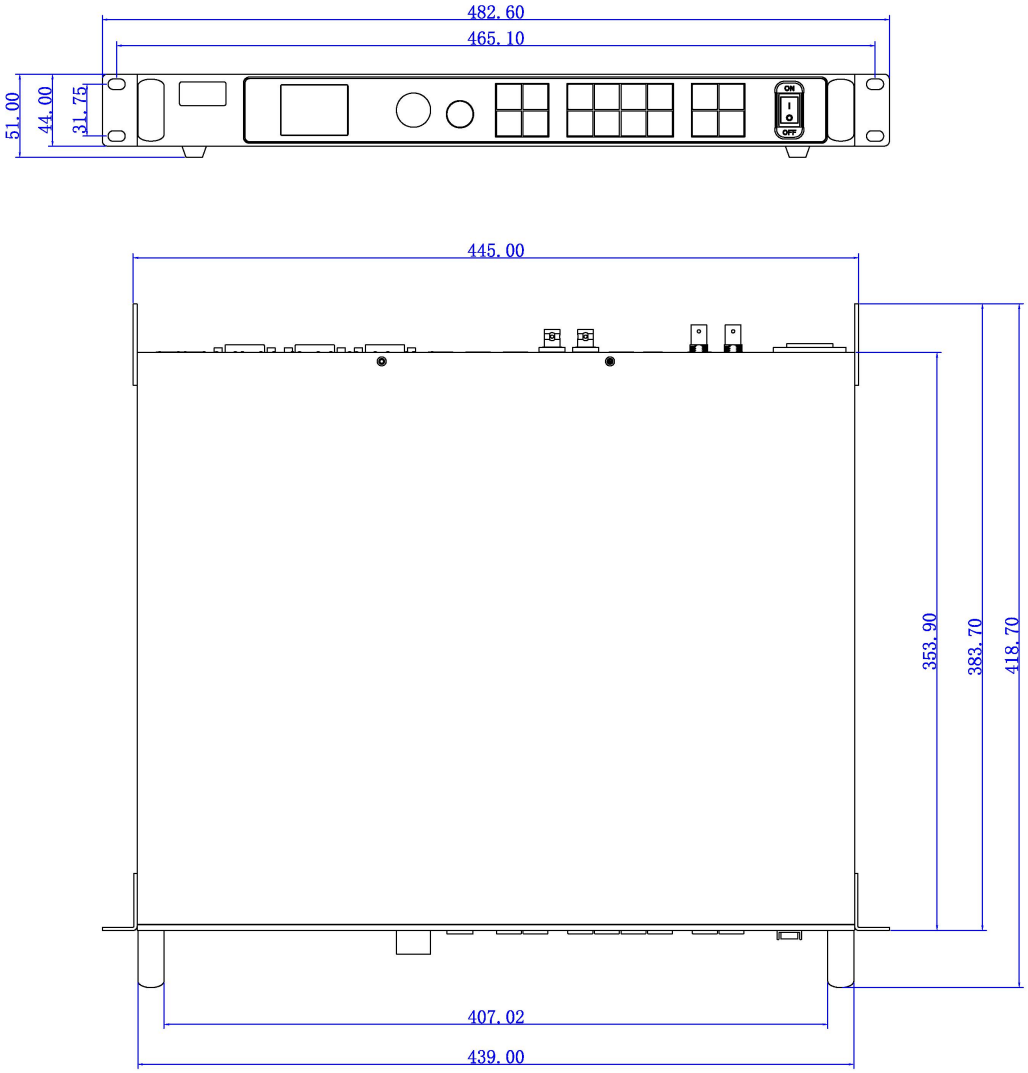


Fiber optic transceiver mode



Reference dimensions

Unit：mm



Statement

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