Colorlight

X12m
LED Video Controller

Specificatio   V1.0

Overview

X12m is an Ultra-4K LED video controller with powerful video signal input and processing capabilities. It supports both 4K and 2K video signal inputs and Ethernet port output mode. With a load capacity of 7.86 million pixels, the device is designed to meet diverse customer needs across various video display applications. Thanks to its versatile and practical features, X12m offers an ideal solution for flexible screen control and high-quality image display.

Features

Input

- Maximum resolution: 4096×2160@60Hz
- 2×4K input ports: 1×DP1.2, 1×HDMI2.0
- 4×2K input ports: 4×HDMI1.4
- 1×USB port

Output

- Maximum load capacity: 7.86 million pixels
- 12×Gigabit Ethernet ports

Audio

- 1×independent audio input
- 1×independent audio output
- Supports HDMI and DP audio decoding and output

Functions

- Supports up to 6 windows at once, each with 1 layer, and allows for overlapping layers

  -1×4K input: simultaneously supports 4 HD inputs for up to 5 windows

  -2×4K inputs: supports 2 windows only

Number of 4K Signal Layers in Canvas	Maximum Number of Layers	Maximum Layers Description
1	5	1*4K + 4*HD
2	2	2*4K
0	6	6*HD

- Navigate and resize windows, with a minimum window size of 64×64
- Free cropping and seamless switching of video signals; crop box adjustable, with a
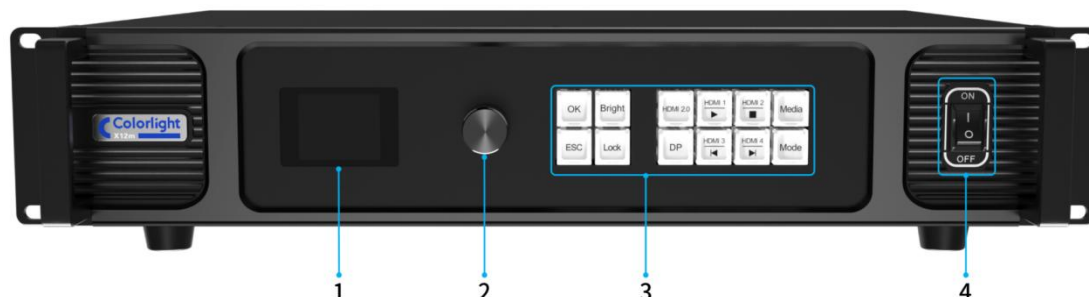
minimum size of 64 × 64

- Precise color management, allowing for color gamut adjustment (Works with receiving cards supporting this function)
- Genlock synchronization supports locking to internal VSync or input signal; automatic Genlock (according to layers) is also available
- Supports brightness and precise color temperature adjustment
- Supports 3D (Optional)
- Better grayscale at low brightness, effectively preventing grayscale loss in low brightness conditions
- Supports saving and loading of 128 preset scenes
- Supports playback and upgrading via a USB drive
- Supports Bluetooth remote control (Optional)

Control

- Supports control and cascading via USB ports
- Supports RS232 Protocol control
- Supports LAN port control
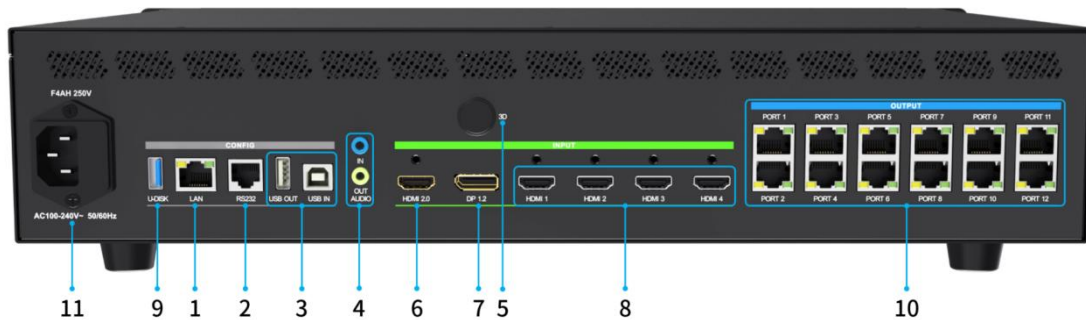- Supports control via mobile apps

Appearance

Front Panel

No.	Item	Description
1	LCD	Display the operation menu and system information
2	Knob	• Press the knob to enter the submenu or confirm your selection • Rotate the knob to select a menu item or adjust the parameters
3	Function buttons	• **OK**: Confirm • **Bright**: Adjust screen brightness • **ESC**: Exit the current operation or back to previous menu • **Lock**: Lock the front panel buttons • **HDMI 2.0 / DP / HDMI 1 / HDMI 2 / HDMI 3 / HDMI 4**: - Switch between input signal sources - In USB drive playback mode, these buttons serve respectively as Play ▶, Stop ◀, Previous ▶, and Next . • **Media**: Play media files • **Mode**: Select from preset scenes
4	Switch	Power on/off switch

Rear Panel

Control		
1	LAN	RJ45 port for **LAN connection**
2	RS232	RJ11 (6P6C) port* for central control connection
3	USB IN	USB2.0 Type B port for parameter adjustment when connected to a PC or for cascading input
	USB OUT	USB2.0 Type A port **for cascading output**
Audio		
4	AUDIO IN	3.5mm port for receiving audio signals from PC and other devices
	AUDIO OUT	3.5mm port for outputting audio signals to active speaker and other devices (Supports HDMI and DP audio decoding and output)
3D		
5	3D*	Outputs 3D sync signal (Active 3D glasses needs to be purchased separately as an optional accessory)
Input		

6	HDMI 2.0	• 1 × HDMI2.0 input, downward compatible with HDMI1.4 and HDMI1.3
		• Maximum input resolution: 4096×2160@60Hz;
		  Minimum input resolution: 800×600@60Hz;
		  Maximum pixel clock: 600MHz
		• Custom resolution:
		  - Maximum width: 8,192 pixels (8192×1080@60Hz)
		  - Maximum height: 8,192 pixels (1080×8192@60Hz)
		• Supports independent EDID settings, following the EDID V1.3 standard
		• Supports audio input

|		
		• HDR not supported
		• Interlaced signal input not supported

7	DP 1.2	• 1×DP1.2 input
		• Maximum resolution: 4096×2160@60Hz;
		  Minimum resolution: 800×600@60Hz;
		  Maximum pixel clock: 600MHz
		• Custom resolution:
		  - Maximum width: 8,192 pixels (8192×1080@60Hz)
		  - Maximum height: 8,192 pixels (1080×8192@60Hz)
		• Supports independent EDID settings, following the EDID V1.3 standard
		• Supports audio input
		• HDR not supported
		• Interlaced signal input not supported

8	HDMI 1
	HDMI 2
	HDMI 3
	HDMI 4
		• 4×HDMI1.4 inputs
		• Maximum resolution: 1920×1200@60Hz;
		  Minimum resolution: 800×600@60Hz;
		  Maximum pixel clock: 165MHz
		• Custom resolution:
		  - Maximum width: 4,096 pixels (4096×512@60Hz)
		  - Maximum height: 4,096 pixels (512×4096@60Hz)
		• Supports independent EDID settings, following the EDID V1.3 standard
		• Supports HDCP1.4
		• Supports audio input
		• Interlaced signal input not supported

9	U-DISK	• USB port for video/image playback from a USB drive
		• File systems: NTFS, FAT32, exFAT
		• Image file formats: JPEG, PNG, WEBP, GIF, BMP
		• Maximum image resolution: 4096×2160
		• Video file formats: 3GP, AVI, FLV, M4V, MKV, MP4, TP, TS, VOB, WMV, MPEG
		  - Video coding: MPEG-1/2, MPEG-4, H.264/AVC, H.265/HEVC, GOOGLE VP8, MOTION JPEG
		  - Audio coding: MPEG Audio, Windows Media Audio, AAC Audio, AMR Audio
		• Video resolution:
		  - Maximum 4096 × 2160@60Hz (Supported formats:

| | | H.264/AVC, MVC, H.265/HEVC) |
| | | - Maximum 1920 × 1080@60Hz (Supported formats: MPEG-1/2, MPEG-4, GOOGLE VP8, VC-1) |

Output		

10	PORT 1-12	• 12×1G Ethernet ports
		• Load capacity per port:
		  - Single Ethernet port: 655,360 pixels
		  - 8bit@60Hz: 650,000 pixels
		  - 8bit@120Hz: 320,000 pixels
		  - 8bit@240Hz: 160,000 pixels
		• Total load capacity:
		  - Total load capacity: 7.86 million pixels
		  - 8bit@60Hz: 7.86 million pixels
		  - 8bit@120Hz: 3.93 million pixels
		  - 8bit@240Hz: 1.96 million pixels
		  - Maximum 16,384 in width or 8,192 pixels in height
		• Communication distance: The recommended maximum cable (CAT5e) run length is 100 meters.
		• Supports redundancy

Power		
11	AC100-240V	A port for power input; 100-240V~, 50/60Hz; with built-in fuse

* The image shown is for illustration purpose only and may not be an exact representation of the product due to production process. Please refer to the actual product.

* RJ11 (6P6C) to DB9 cable is shown below:
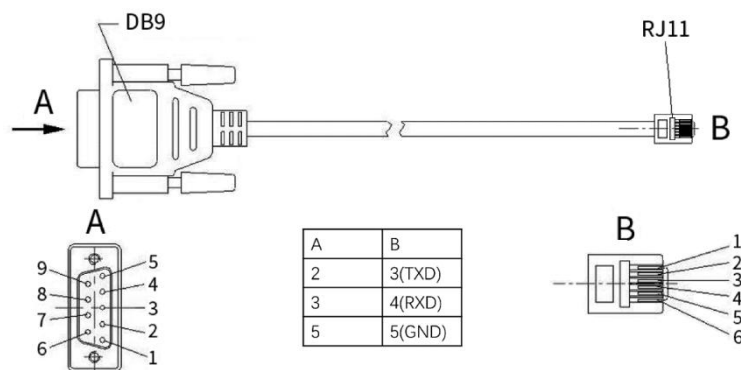
Signal Formats

HDMI 2.0					
Input	**Color Space**	**Sampling**	**Bit Depth**	**Maximum Resolution**	**Frame Rate**
4K	YCbCr	4:2:2	8bit	4096×2160@60Hz	23.98, 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, 100, 120, 144
	YcbCr/RGB	4:4:4	8bit		
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		

DP 1.2					
Input	**Color Space**	**Sampling**	**Bit Depth**	**Maximum Resolution**	**Frame Rate**
4K	YCbCr	4:2:2	8bit	4096×2160@60Hz	23.98, 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, 100, 120, 144
	YcbCr/RGB	4:4:4	8bit		
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		

HDMI 1.4					
Input	**Color Space**	**Sampling**	**Bit Depth**	**Maximum Resolution**	**Frame Rate**
2K	YCbCr	4:2:2	8bit	1920×1200@60Hz	29.97, 59.94, 30, 50, 60
	YCbCr/RGB	4:4:4	8bit		
	YCbCr	4:2:2	8bit	1920×1080@60Hz	29.97, 59.94, 30, 50, 60
	YCbCr/RGB	4:4:4	8bit		

* The above shows only some of the standard resolutions.

  YcbCr420, 10bit, 12bit not supported
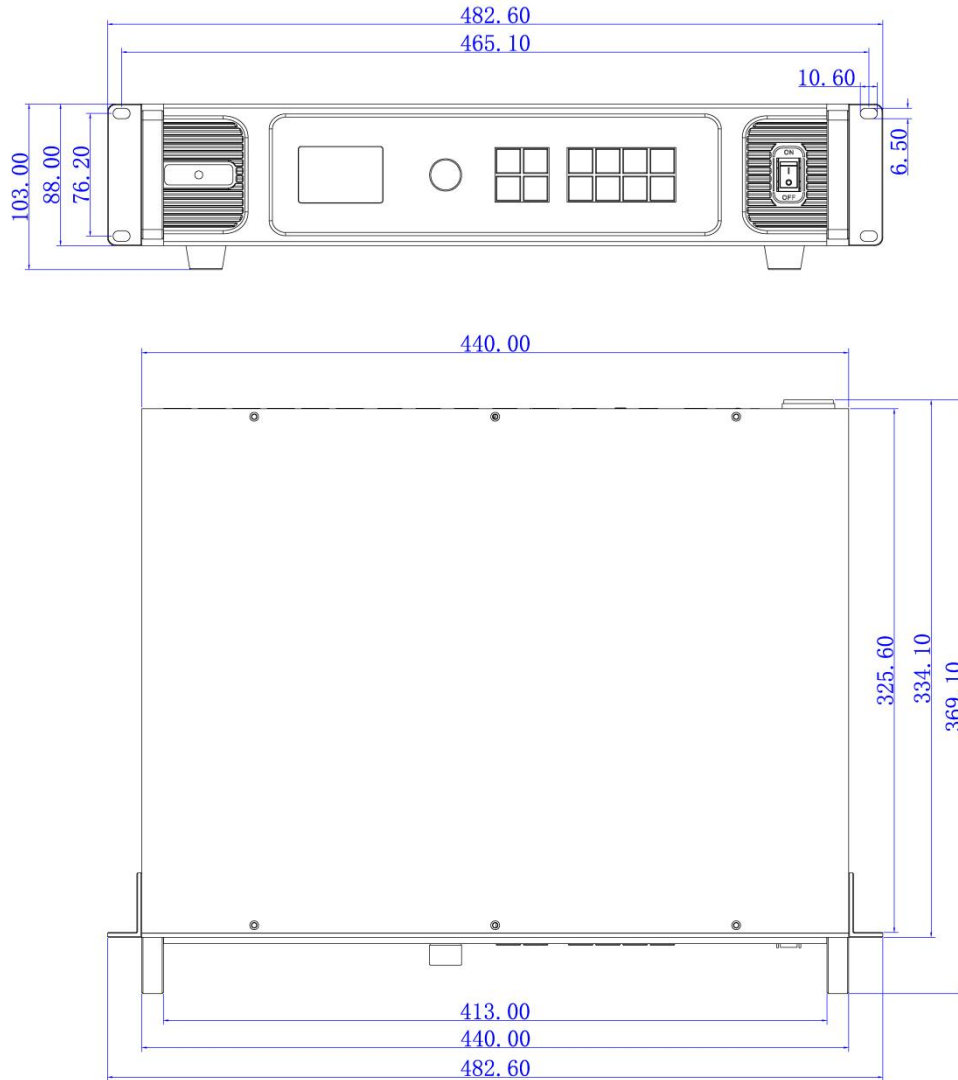
Specifications

Dimensions （W×H×D）	
Device	482.6 mm (19")×88.0 mm (3.5")×369.1 mm (14.5"), no rubber feet
Packing	550.0 mm (21.7")×168.0 mm (6.6")×480.0 mm (18.9")
Weight	
Net	2.46 kg (5.42 lbs)
Electrical parameters	
Power supply	AC 100-240V, 50/60Hz
Rated power	58W
Operating environment	
Temperature	-20℃~50℃ （-4°F~122°F)
Humidity	0% RH~80% RH, non-condensing
Storage environment	
Temperature	-30℃~80℃ （-22°F~176°F)
Humidity	0% RH~90% RH, non-condensing
Certifications	
CE, FCC, IC, UKCA	
* If the product does not have the relevant certifications required by the countries or regions where it is to be sold, please contact Colorlight to confirm or address the problem. Otherwise, the customer shall be responsible for the legal risks, or Colorlight has the right to claim compensation.	

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Applications

Gigabit Ethernet Output

DP HDMI 2.0 HDMI

Reference Dimensions

Unit: mm

Statement

Due to possible changes in product batches and production processes, the text and pictures in the document may be adjusted and revised to match accurate product information, specifications, and features. Colorlight may make improvements and changes to this document without prior notice. Please refer to the actual product.

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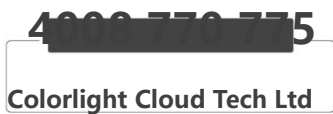
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