X20

LED Video Controller

Specification V2.0

Overview

X20 is a controller with powerful video input and processing capacity. It supports 4K inputs with DP1.2 and HDMI2.0 connectors, and 2K inputs with HDMI1.4 and DVI connectors. A single unit features a loading capacity of 13.00 million pixels. Equipped with 20x 1G Ethernet ports and 2x 10G optical fiber ports, X20 meets the need of different scenarios. Additionally, X20 boasts abundant practical functions that enable flexible screen control and high-quality image display.

Features

Inputs

- Maximum 4096x2160@60Hz.
- 4K input interface: 1x DP1.2, 1x HDMI2.0.
- 2K input interface: 2x HDMI1.4, 2x DVI.

Outputs

- Up to 13.00 million pixels load capacity, with maximum 16384 pixels in width and 8192 pixels in height.
- 20x 1G Ethernet outputs or 2x 10 Gigabit optical ports output[1].

Audio

- 1x 3.5mm input.
- 1x 3.5mm output, support HDMI and DP audio.

Functions

- Up to 6 windows, support window overlay.
- Window roaming and free scaling[2].
- Free cropping and seamless switching[2].
- Adjust color gamut with precise color management[3].
- Brightness and color temperature adjustment.
- 3D display (purchase corresponding accessories separately).
- Improving grayscale performance with Better Grayscale at Low Brightness.
- Save and recall 16 preset scenes.

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1. Ethernet port output and optical port output cannot be used at the same time.

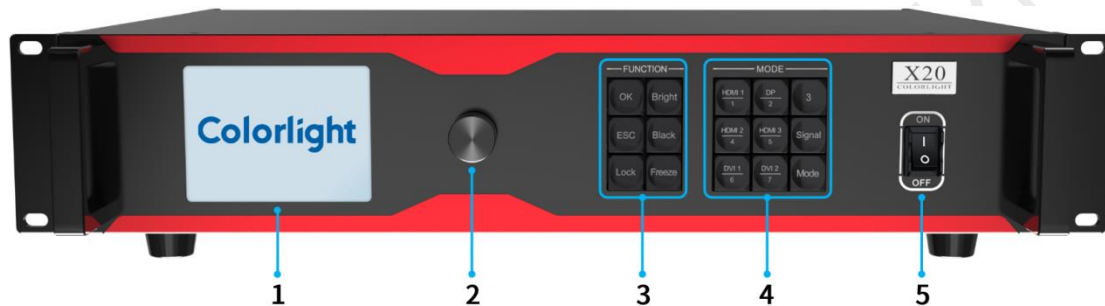2. Minimum window size is 64x64.

3. Corresponding receiving card must also support such feature.

Control

- USB port for control and cascading.
- RS232 protocol.
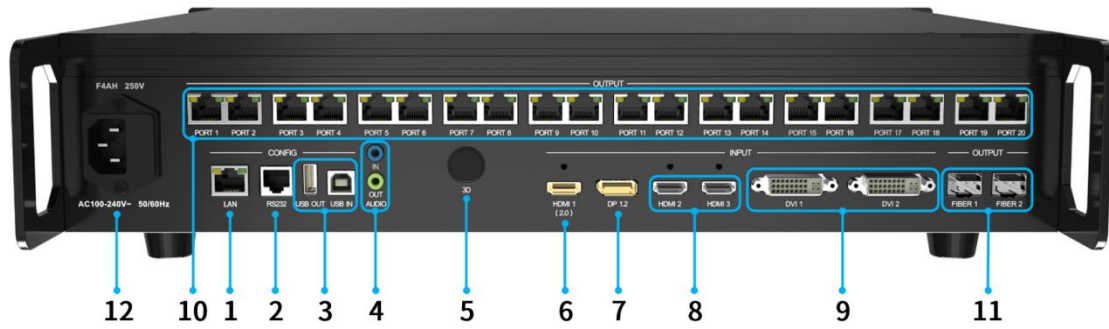- LAN port for TCP/IP control.
- Android APP for mobile devices.

Hardware

Front panel

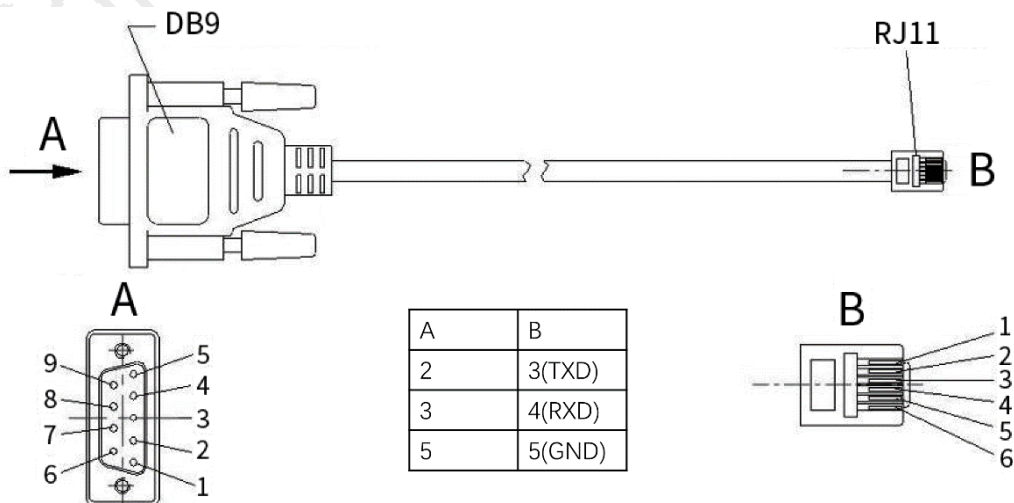| No.	Item	Function
1	LCD	Display the operation menu and system information.
2	Knob	Select an item or adjust the parameter, press the knob to confirm.
3	Function Keys	• **OK**: Enter. • **Bright**: Brightness adjustment. • **ESC**: Exit the current operation. • **Black**: Black the screen. • **Lock**: Lock the front panel keys. • **Freeze**: Freeze the output screen.
4	Mode Keys	• **HDMI 1 / DP/HDMI 2 / HDMI 3 / DVI 1 / DVI 2**: Set video signal in single-window mode • **Signal**: View signal status. • **Mode**: Enter/exit scene selection mode. • **1~7**: Load a preset scene in scene selection mode.
5	Power Switch	Switch the device on or off.

Rear panel

Control		
1	LAN	RJ45 port, connect to a switch for accessing local area network.
2	RS232	*RJ11 port(6P6C), connect to central control.
3	USB	USB2.0 Type B port, connect to PC for debugging.
	USB OUT	USB2.0 Type A port, as cascading output.
Audio		
4	AUDIO IN	• Interface type: 3.5mm. • Receive audio signals from computers and other equipment.
	AUDIO OUT	• Interface type: 3.5mm. • Support HDMI, DP audio decoding and output audio to device such as active speakers.
3D		
5	3D（optional）	Output 3D sync signal, connect to the 3D emitter (use with active 3D glasses).
Input		

6	HDMI 2.0	• 1x HDMI2.0 input, support HDMI1.4/HDMI1.3.
		• Maximum 4096x2160@60Hz, maximum pixel clock 600MHz.
		  - Maximum 8192 (8192x1080@60Hz) in width.
		  - Maximum 8192 (1080x8192@60Hz) in height.
		• Support EDID settings.
		• Support audio input.

7	DP 1.2	• 1x DP1.2 input.
		• Maximum 4096x2160@60Hz, maximum pixel clock 600MHz.
		  - Maximum 8192 (8192x1080@60Hz) in width.
		  - Maximum 8192 (1080x8192@60Hz) in height.
		• Support EDID settings.
		• Support audio input.

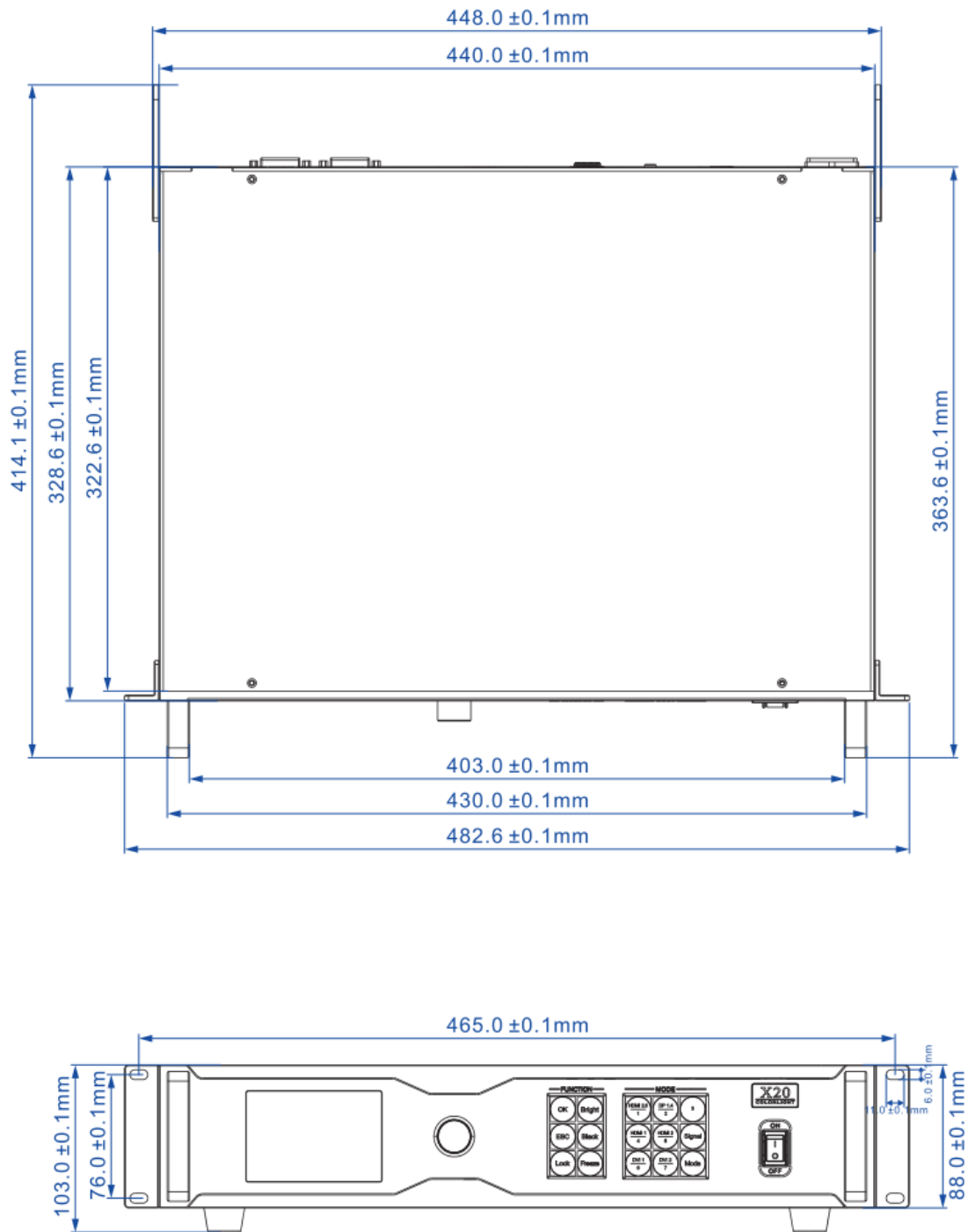| 8	HDMI 1, HDMI 2	• 2x HDMI1.4 input. • Maximum 1920x1200@60Hz. • Support EDID settings. • Support audio input.
9	DVI 1, DVI 2	• 2x DVI input. • Support 1920x1200@60Hz. • Support EDID settings.
Output		

10	PORT 1-20	• 20x 1G Ethernet output.
		• Load capacity:
		  - One network port load capacity: 650,000 pixels.
		  - Total load capacity is 13.00 million pixels, with maximum 16,384 pixels in width and maximum 8,192 pixels in height.
		• The recommended maximum cable (Cat 5e) run length is 100 meters.
		• Support redundant backup.

11	FIBER 1, FIBER 2	• 2x 10G Optical interfaces.
		  - FIBER 1 corresponds to PORT 1-10 Gigabit Ethernet ports output.
		  - FIBER 2 corresponds to PORT 11-20 Gigabit Ethernet ports output.
		• Equipped with 10G single-mode optical module (purchase separately), the device supports dual LC fiber interface (wavelength 1310nm, transmission distance 2 km).

Power supply		
12	Power Socket	AC100-240V, 50 / 60Hz, connect to AC power supply, built-in fuse.

* DB9 female to RJ11(6P6C) cable:

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

Applications

Signal format

Input	Color space	Sampling	Color depth	Max Resolution	Frame rate
HDMI2.0	YCbCr	4:2:2	8bit	4096x2160@60Hz	23.98, 24, 25, 29.97, 30, 50, 59.97, 60, 120, 144, 200, 240
	YcbCr/RGB	4:4:4	8bit		
DP1.2	YCbCr	4:2:2	8bit	4096x2160@60Hz	23.98, 24, 25, 29.97, 30, 50, 59.97, 60, 120, 144, 200, 240
	YCbCr	4:4:4	8bit		
DVI	YCbCr	4:2:2	8bit	1920x1200@60Hz	23.98, 24, 25, 29.97, 30, 50, 59.97, 60, 120, 144, 200, 240
	YCbCr	4:4:4	8bit		
HDMI 1.4	YCbCr	4:2:2	8bit	1920x1200@60Hz	23.98, 24, 25, 29.97, 30, 50, 59.97, 60, 120, 144, 200, 240
	YCbCr	4:4:4	8bit		

Parameters

Dimensions （WxHxD）	
Unboxed	482.6mm (19.0") x 88.0mm (3.5") x 414.1mm (16.3"), 2U chassis (no foot pads)
Boxed	525.0mm (20.7") x 150.0mm (5.9") x 495.0mm (19.5")
Weight	
Net weight	4.8kg (10.58lbs)
Total weight	6.6kg (14.55lbs)
Electrical specification	
Power input	AC100-240V~, 50 / 60Hz
Rated power	50W
Operating environment	
Temperature	-20°C~60°C / -4°F~140°F
Humidity	0%RH~80%RH, non-condensing
Storage environment	
Temperature	-30°C~80°C / -22°F~176°F
Humidity	0%RH~90%RH, non-condensing
Certification	
CCC、CE、FCC、IC.	

* 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 caused or Colorlight has the right to claim compensation.

Reference dimensions

Unit: mm

Statement

As factors such as product batches and production processes may change, in order to provide accurate product information, specification parameters, and product characteristics in order to match the actual product, the text description and picture effects in the document will be adjusted and revised appropriately. If it is necessary to carry out the above modification and adjustment without prior notice, please refer to the actual product.

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