X100 Pro-4U/7U

Video Splicer

Specification

Contents

Overview

X100 Pro-4U&7U are Colorlight's brand-new professional splicers, especially for video walls, featuring the integration of multiple video processing functions such as cropping, scaling, splicing, and multi-screen display. They can serve as a video processor for LCD and DLP splicing screens or an LED controller for fine-pitch video walls with ultra-high resolution. Due to its powerful functions and excellent performance, the X100 Pro-4U&7U can be widely used in various scenarios, including command & dispatch systems, power system operation & maintenance, party and government conferences, visualization data center, broadcasting & television, and high-end stage rentals, etc.

With the modular design and robust FPGA architecture, X100 Pro-4U&7U can provide outstanding display effects and efficient video processing capability, ensuring the system's long-time safe and stable operation.

As for input, X100 Pro-4U&7U provide industry-standard ports, including HDMI, DP, SDI, DVI, VGA, and CVBS, supporting 1080P HD and 4K up to 4096×2160@60Hz.

Regarding output, X100 Pro-4U&7U support Gigabit Ethernet port and 10 Gigabit optical fiber, realizing the smooth display of large and over-distance fine-pitch LED screens. Moreover, the DVI and HDMI output are available, allowing for flexible LCD and DLP applications.

The modular plug-in design allows users to flexibly configure input and output boards as needed, greatly satisfying the demands of different scenarios.

Features

Input

- HDMI2.0, DP1.2, and12G-SDI; single port supports up to 4096x2160@60Hz.
- DVI and HDMI1.4, up to 4x 1920x1200@60Hz.
- VGA, up to 4x 1920x1080@60Hz.
- CVBS, up to 2x 720x576i@60Hz.
- 3G-SDI, up to 4x 1920x1080p@60Hz.
- 23.98Hz~240Hz input frame rate.
- 8/10bit video source input.
- HD ports support HDCP.
- Custom name of input source; real-time monitoring of online status.

Output

- LED output integrated with Gigabit Ethernet port and 10 Gigabit optical fiber port. Single card loads up to 6.5 million pixels.
- LCD output board with HDMI1.4 and DVI video ports; single board supports up to 4x 1920x1200@60Hz.

- LCD output board with HDMI2.0 video port; single port supports up to 4096x2160@60Hz.
- Arbitrary output port setting within the device control area while not affected by cross-board
- 23.98Hz~240Hz output frame rate.
- 8/10bit output display.
- Port-redundancy for single device; device-redundancy for multiple devices.

Preview and Monitoring

- Preview & monitoring board, can preview the input source and monitor the output display.

Video Processing

- Multi-window and multi-layer display: Supports window roaming and free splicing; cross-board and cross-port without layers reduction.
- Cropping: Each signal can be cropped independently. After cropping, a new input source will be created without affecting the original one.
- Scrolling Text: Customize text content, such as notification messages and slogan banners, and set the font format & size, scrolling direction, speed, background color, etc.
- UHD background: High-resolution image with max. width/height of 32,767 pixels.
- Logo management for input: Available for text and image.
- 3D display (emitter be purchased separately): Work with active 3D emitter and 3D glasses.
- Independent cropping, seamless zooming, and EDID management of each input signal.
- Genlock function.
- Custom frame rate: Custom output frame rate of 30/60/120/144/240Hz and others.

Color Management

- Independent adjustment of each input: Customize brightness, contrast, saturation, brightness compensation, color temperature, and RGB independent adjustment.
- Overall adjustment of output display: Customize brightness, contrast, saturation, brightness compensation, color temperature, and RGB independent adjustment.
- Adjusting brightness by network port grouping: Manage display brightness independently.

Device Control

- Multi-screen management.
- Multiple connection & control methods: USB/LAN/RS232; PC/ central control device.
- Web control: Real-time response and compatible with Windows, iOS, Android, and Linux.

- Control via APP: Use with Colorlight's Kylin Visualization Intelligent Control Platform.

- Multi-user collaboration: Simultaneous access and device management.

- View and set device information from front panel.

- Preset management: Up to 2000 presets and timing tour of presets.

Easy Maintenance

- Upgrade firmware, image file, Logo, and font library via USB or Web.

Stable and Reliable

- Dual power backup(optional); output signal redundancy.

- Abnormal temperature alarm, disconnection alert, etc.

Applications

* The illustration is for reference only, taking X100 Pro-7U as an example. Please refer to the actual product for details.

Hardware

Front panel

| | X100 Pro-4U | X100 Pro -7U |

No.	Name	Functions
1	7-inch LCD screen	Displays the menu, system information as well as the status of the device.
2	Power switch	Device on / off.

Rear panel

| | X100 Pro-4U | X100 Pro -7U |

Input	
INPUT	• Input board slots are located on the left side of the rear panel. X100 Pro-4U can be equipped with 4 input boards, while X100 Pro-7U with 8. • Single board supports input source of up to 4x 1920x1200@60Hz or 1x 4096x2160@60Hz. • The following types of input boards are supported. Please refer to the board

	specifications in the next chapter for parameters.
	- 1x HDMI2.0 (4K).
	- 1x DP1.2 (4K).
	- 1x 12G-SDI (4K).
	- 1x HDMI2.0+1x DP1.2 (4K).
	- 4x DVI.
	- 4x HDMI1.4.
	- 4x VGA.
	- 2x VGA+2x CVBS.
	- 4x 3G-SDI.

Output

OUTPUT	• Output board slots are located on the right side of the rear panel.X100 Pro-4U can be equipped with 4 output boards while X100 Pro-7U with 8. • The following types of output boards are supported. Please refer to the board specifications in the next chapter for parameters. - 8x Gigabit Ethernet port. - 10x Gigabit Ethernet port. - 1x 10G fiber port +1x 10G backup fiber port. - 1x HDMI2.0 (4K). - 4x DVI. - 4x HDMI.

Preview

PREVIEW	• A preview & monitoring board can be installed into the bottom-right slot on the rear panel. • The following board types are supported. Please refer to the board specifications in the next chapter for parameters. - 1x HDMI preview & monitoring boards.

Control

USB/LAN	• A control board can be installed into the bottom-left slot on the rear panel, supporting USB, RS232, and LAN control.

Genlock

GENLOCK	• 1x BNC, male, input synchronized source. - Support Bi-level and Tri-level sync, 23.98~60Hz frame rate.
GENLOCK LOOP	• 1x BNC, male. - Output synchronized source.

Power

Mains Input	• AC 100-240V, 50/60Hz, standard single power (dual power is optional).

* The illustration is for reference only. Actual hardware configuration and production processes may cause differences. Please refer to the actual product.

Board Specifications

Input board	

X100IN009
 	
1x HDMI 2.0 port
	
	• 1x HDMI Type A port, 1x 4K@60Hz input.
	• HDMI2.0 standard, compatible with HDMI1.4/1.3.
	• Single port supports a maximum resolution of 4096x2160@60Hz and a minimum of 800×600@60Hz; the maximum pixel clock is 600MHz.
	  - Max. width: 8192 pixels (8192x1080@60Hz).
	  - Max. height: 8192 pixels (1024x8192@60Hz).
	• HDR supported.
	• Independent EDID settings, using EDID V1.3 standard.
	• HDCP2.2 compliant, backwards compatible.
	• De-interlaced signal input not supported.
	• Independent cropping, seamless zooming and color adjustment supported.
	• Layer reuse supported.

X100IN010
 	
1x DP1.2 port
	
	• 1x DP port, 1x 4K@60Hz input.
	• DP1.2 standard, compatible with DP1.1.
	• Single port supports a maximum resolution of 4096x2160@60Hz and a minimum of 800×600@60Hz; the maximum pixel clock is 600MHz.
	  - Max. width: 8192 pixels (8192x1080@60Hz).
	  - Max. height: 8192 pixels (1024x8192@60Hz).
	• HDR supported.
	• Independent EDID settings, using EDID V1.3 standard.
	• HDCP2.2 compliant, backwards compatible.
	• De-interlaced signal input not supported.
	• Independent cropping, seamless zooming and color adjustment supported.
	• Layer reuse supported.

X100IN022 1x 12G-SDI port	 • 1x 12G-SDI port, 1x 4K@60Hz input. • Single port supports a maximum resolution of 4096x2160@60Hz and a minimum of 800×600@60Hz. • HDR supported. • Independent EDID settings not supported; different resolution inputs supported. • SMPTE424M/292M standard, supports SD/HD/3G/6G/12G-SDI (Level

	A/B). • De-interlacing display supported. • Independent cropping, infinite scaling and color adjustment supported. • Layer reuse supported.

X100IN003
 	
1x HDMI2.0 port+1x DP1.2 port
	
	• Use either 1x HDMI Type A or 1xDP port, 1x 4K@60Hz input.
	• HDMI2.0 standard, compatible with HDMI1.4/1.3.
	• DP1.2 standard, compatible with DP1.1.
	• Single port supports a maximum resolution of 4096x2160@60Hz and a minimum of 800×600@60Hz; the maximum pixel clock is 600MHz.
	  - Max. width: 8192 pixels (8192x1080@60Hz).
	  - Max. height: 8192 pixels (1024x8192@60Hz).
	• HDR supported.
	• Independent EDID settings, using EDID V1.3 standard.
	• HDCP2.2 compliant, backwards compatible.
	• De-interlaced signal input not supported.
	• Independent cropping, seamless zooming and color adjustment supported.
	• Layer reuse supported.

X100IN0021
 	
4x HDMI ports
	
	• 4x HDMI Type A ports, 4x 2K@60Hz inputs.
	• HDMI1.4 standard, compatible with HDMI1.3.
	• Single port supports a maximum resolution of 1920×1200@60Hz and a minimum of 800×600@60Hz.
	  - Max. width: 4096 pixels (4096×512@60Hz).
	  - Max. height: 4096 pixels (512×4096@60Hz).
	• HDR not supported.
	• Independent EDID setting, using EDID V1.3 standard.
	• HDCP1.4 compliant, backwards compatible.
	• De-interlaced signal input not supported.
	• Independent cropping, seamless zooming and color adjustment supported.
	• Layer reuse supported.

X100IN0011 4x DVI ports	
	• 4x DVI-I ports, 4x 2K@60Hz inputs. • Single port supports a maximum resolution of 1920×1200@60Hz and a minimum of 800×600@60Hz. – Max. width: 4096 pixels (4096×512@60Hz). – Max. height: 4096 pixels (512×4096@60Hz). • HDR not supported. • Independent EDID setting, using EDID V1.3 standard. • HDCP1.4 compliant, backwards compatible. • De-interlaced signal input not supported. • Independent cropping, seamless zooming and color adjustment supported. • Layer reuse supported.
X100IN004 4x 3G-SDI ports	
	• 4x 3G-SDI ports, 4x 2K@60Hz inputs. • Single port supports up to 1920×1080@60Hz. • HDR supported. • EDID settings not supported; different resolution inputs supported. • SMPTE424M/292M standard, supports SD/HD/3G/6G/12G-SDI (Level A/B). • De-interlacing display supported. • Independent cropping, seamless zooming and color adjustment supported. • Layer reuse supported.
X100IN018 4x VGA ports	
	• 4x VGA ports, 4x 2K@60Hz inputs. • Single port supports a maximum resolution of 1920×1080@60Hz and a minimum of 800×600@60Hz. – Max. width: 1920 pixels. – Max. height: 1080 pixels. • HDR not supported. • Independent EDID settings not supported. • HDCP not supported. • De-interlaced signal input not supported. • Independent cropping, seamless zooming and color adjustment supported. • Layer reuse supported.

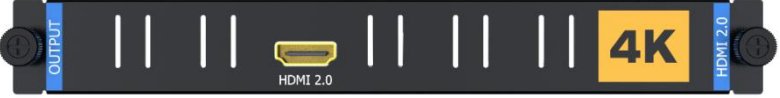| X100IN020 2x VGA ports+2x CVBS ports	

	• 2x VGA, 2x CVBS ports.
	• Single VGA supports up to 1920×1080@60Hz.
	   - Max. width: 1920 pixels.
	   - Max. height: 1080 pixels.
	   - HDR not supported.
	   - Independent EDID settings not supported.
	   - HDCP not supported.
	   - De-interlaced signal input not supported.
	   - Independent cropping, seamless zooming and color adjustment supported.
	   - Layer reuse supported.
	• Single CVBS supports up to 720×576i@60Hz.
	   - HDR not supported.
	   - Independent EDID settings not supported.
	   - HDCP not supported.
	   - De-interlaced signal input not supported.
	   - Independent cropping, seamless zooming and color adjustment supported.
	   - Layer reuse supported.

Output board

X100OUT03 8x Ethernet ports	

	• 8x RJ45 Gigabit Ethernet ports; single board supports up to 5.2 million pixels.
	• Each port output can be arbitrarily set within the device control range.
	   - Max. width/height: 32,767 pixels.
	• Load capacity of single board:
	   - 60Hz output frame rate, 8bit: 5.24 million pixels, 10bit: 3.93 million pixels.
	   - 120Hz output frame rate, 8bit: 2.62 million pixels, 10bit: 1.96 million pixels.
	   - 240Hz output frame rate, 8bit: 1.31 million pixels, 10bit: 0.98 million pixels.
	• Load capacity of single Ethernet port:
	   - 60Hz output frame rate, 8bit: 0.65 million pixels, 10bit: 0.49 million pixels.
	   - 120Hz output frame rate, 8bit: 0.32 million pixels, 10bit: 0.24

	million pixels.

	- 240Hz output frame rate, 8bit: 0.16 million pixels, 10bit: 0.12 million pixels.
	• Indicator status:
	  - Steady on: normal board access.
	  - Blinking: normal signal output.

X100OUT04
 	
10x Ethernet ports
	
	• 10x RJ45 Gigabit Ethernet ports; single board supports up to 6.5 million pixels.
	• Each port output can be arbitrarily set within the device control range.
	  - Max. width/height: 32,767 pixels.
	• Load capacity of single board:
	  - 60Hz output frame rate, 8bit: 6.55 million pixels, 10bit: 4.9 million pixels.
	  - 120Hz output frame rate, 8bit: 3.27 million pixels, 10bit: 2.45 million pixels.
	  - 240Hz output frame rate, 8bit: 1.63 million pixels, 10bit: 1.22 million pixels.
	• Load capacity of single Ethernet port:
	  - 60Hz output frame rate, 8bit: 0.65 million pixels, 10bit: 0.49 million pixels.
	  - 120Hz output frame rate, 8bit: 0.32 million pixels, 10bit: 0.24 million pixels.
	  - 240Hz output frame rate, 8bit: 0.16 million pixels, 10bit: 0.12 million pixels.
	• Indicator status:
	  - Steady on: normal board access.
	  - Blinking: normal signal output.

X100OUT05
 	
1x fiber port + 1x backup fiber port
	
	• 1x 10G fiber port + 1x backup fiber port.
	• NO. 1 is the main output port while NO. 2 copies and backs up data of NO. 1 automatically.
	  - Use with a dedicated optical fiber transceiver. Each fiber port can be converted to 10x Gigabit Ethernet ports.
	  - By default, this board is equipped with optical modules of 2x 10G single-mode SFP+ (dual-core LC interface, transmission distance of 2km, wavelength of 1310nm), and other optical modules are

	optional.
	• Output can be arbitrarily set within the device control range.
	  - Max. width/height: 32,767 pixels.
	• Load capacity of single fiber port:
	  - 60Hz output frame rate, 8bit: 6.55 million pixels, 10bit: 4.9 million pixels.
	  - 120Hz output frame rate, 8bit: 3.27 million pixels, 10bit: 2.45 million pixels.
	  - 240Hz output frame rate, 8bit: 1.63 million pixels, 10bit: 1.22 million pixels.

X100OUT18
 	
1x HDMI2.0 port
	
	• 1x HDMI2.0 video port, 1x 4K@60Hz input.
	• Single board supports a maximum resolution of 4096×2160@60Hz and a minimum of 800×600@60Hz.
	  - Max. width: 8,192 pixels (8192×1080@60Hz).
	  - Max. height: 8,188 pixels (1024×8188@60Hz).
	• Output can be arbitrarily set within the device control range.
	  - Max. width/height: 32,767 pixels.
	• Each signal has the same custom resolution.

X100OUT01
 	
4x DVI ports
	
	• 4x DVI ports, 4x 2K@60Hz inputs.
	• Single port supports a maximum resolution of 1920×1200@60Hz and a minimum of 800×600@60Hz.
	  - Max. width: 4,096 pixels (4096×512@60Hz).
	  - Max. height: 4,096 pixels (512×4096@60Hz).
	• Output can be arbitrarily set within the device control range.
	  - Max. width/height: 32,767 pixels.
	• Each signal has the same custom resolution.

X100OUT02
 	
4x HDMI ports
	
	• 4x HDMI1.4 ports, 4x 2K@60Hz inputs.
	• Single port supports a maximum resolution of 1920×1200@60Hz and a minimum of 800×600@60Hz.
	  - Max. width: 4,096 pixels (4096×512@60Hz).
	  - Max. height: 4,096 pixels (512×4096@60Hz).
	• Output can be arbitrarily set within the device control range.
	  - Max. width/height: 32,767 pixels.
	• Each signal has the same custom resolution.

Preview and monitoring	
X100PROV2001 Preview & monitoring board	 • 1x HDMI 1.4 ports. • Connected to a monitor to view the preview & monitoring images, with fixed output of 1920x1080@60Hz.

Technical Specifications

HDMI2.0					
Input	**Resolution**	**Color space**	**Chroma sampling**	**Color depth**	**Frame rate**
4K	4096×2160	YCbCr	4:2:2	8bit	23.97,24,30,50,59.94,60
		YCbCr/RGB	4:4:4	8bit	
	3840×2160	YCbCr	4:2:2	8/10bit	
		YCbCr/RGB	4:4:4	8bit	
		YCbCr/RGB	4:4:4	10bit	23.97,24,30,50
2K	1920×1200	YCbCr	4:2:2	8/10bit	23.97,24,30,50,59.94,60,100,120,144
		YCbCr/RGB	4:4:4	8bit	
		YCbCr/RGB	4:4:4	10bit	23.97,24,30,50,59.94,60,100,120,144,240
	1920×1080	YCbCr	4:2:2	8/10bit	23.97,24,30,50,59.94,60,100,120,144,240
		YCbCr/RGB	4:4:4	8bit	
		YCbCr/RGB	4:4:4	10bit	23.97,24,30,50,59.94,60,100,120,144

The above only lists partial resolutions.

DP1.2					
Input	**Max. resolution**	**Color space**	**Chroma sampling**	**Color depth**	**Frame rate**
4K	4096×2160	YCbCr	4:2:2	8bit	23.98, 30,50,59.94,60
		YCbCr/RGB	4:4:4	8bit	
	3840×2160	YCbCr	4:2:2	8/10bit	
		YCbCr/RGB	4:4:4	8/10bit	
2K	1920×1200	YCbCr	4:2:2	8/10bit	23.97,24,30,50,59.94,60,100,120,144
		YCbCr/RGB	4:4:4	8/10bit	
	1920×1080	YCbCr	4:2:2	8/10bit	23.97,24,30,50,59.94,60,100,120,144,240
		YCbCr/RGB	4:4:4	8bit	
		YCbCr/RGB	4:4:4	10bit	23.97,24,30,50,59.94,60,100,120,144

The above only lists partial resolutions.

HDMI1.4/DVI

Input	Resolution	Color space	Chroma sampling	Color depth	Frame rate
2K	1920×1200	YCbCr	4:2:2	8bit	23.98,24,30,50,59.94,60
		YCbCr/RGB	4:4:4	8bit	
	1920×1080	YCbCr	4:2:2	8bit	
		YCbCr/RGB	4:4:4	8bit	

The above only lists partial resolutions.

VGA

Input	Resolution	Color space	Chroma sampling	Color depth	Frame rate
2K	1920×1080	YCbCr	4:2:2	8bit	23.98,24,30,50,59.94,60
		YCbCr/RGB	4:4:4	8bit	

The above only lists partial resolutions.

CVBS

Input	Resolution	Color space	Chroma sampling	Color depth	Frame rate
SD	720×576i	YCbCr	4:2:2	8bit	50
	720×480i	YCbCr	4:2:2	8bit	59.94

The above only lists partial resolutions.

12G-SDI

Input	Resolution	Color space	Chroma sampling	Color depth	Frame rate
12G	4096×2160p	YCbCr	4:2:2	10bit	50,59.94,60
	3840×2160p	YCbCr	4:2:2	10bit	
6G	4096×2160p	YCbCr	4:2:2	10bit	23.98,24,25,29.97,30
	3840×2160p	YCbCr	4:2:2	10bit	
3G	1920×1080p	YCbCr	4:2:2	10bit	50,59.94,60
HD	1920×1080p	YCbCr	4:2:2	10bit	23.98,24,25,29.97,30
	1920×1080i	YCbCr	4:2:2	10bit	50,59.94,60
	1280×720p	YCbCr	4:2:2	10bit	23.98,24,25,29.97,30,50,59.94,60
SD	720×576i	YCbCr	4:2:2	8bit	50
	720×480i	YCbCr	4:2:2	8bit	59.94

12G SDI supports Level A/B. The above only lists partial resolutions.

3G-SDI

Input	Resolution	Color space	Chroma sampling	Color depth	Frame rate
3G	1920×1080p	YCbCr	4:2:2	10bit	50,59.94,60
HD	1920×1080p	YCbCr	4:2:2	10bit	23.98,24,25,29.97,30
	1920×1080i	YCbCr	4:2:2	10bit	50,59.94,60
	1280×720p	YCbCr	4:2:2	10bit	23.98,24,25,29.97,30,50,59.94,60

SD	720×576i	YCbCr	4:2:2	8bit	50
	720×480i	YCbCr	4:2:2	8bit	59.94
3G SDI supports Level A/B. The above only lists partial resolutions.					

Device Specifications

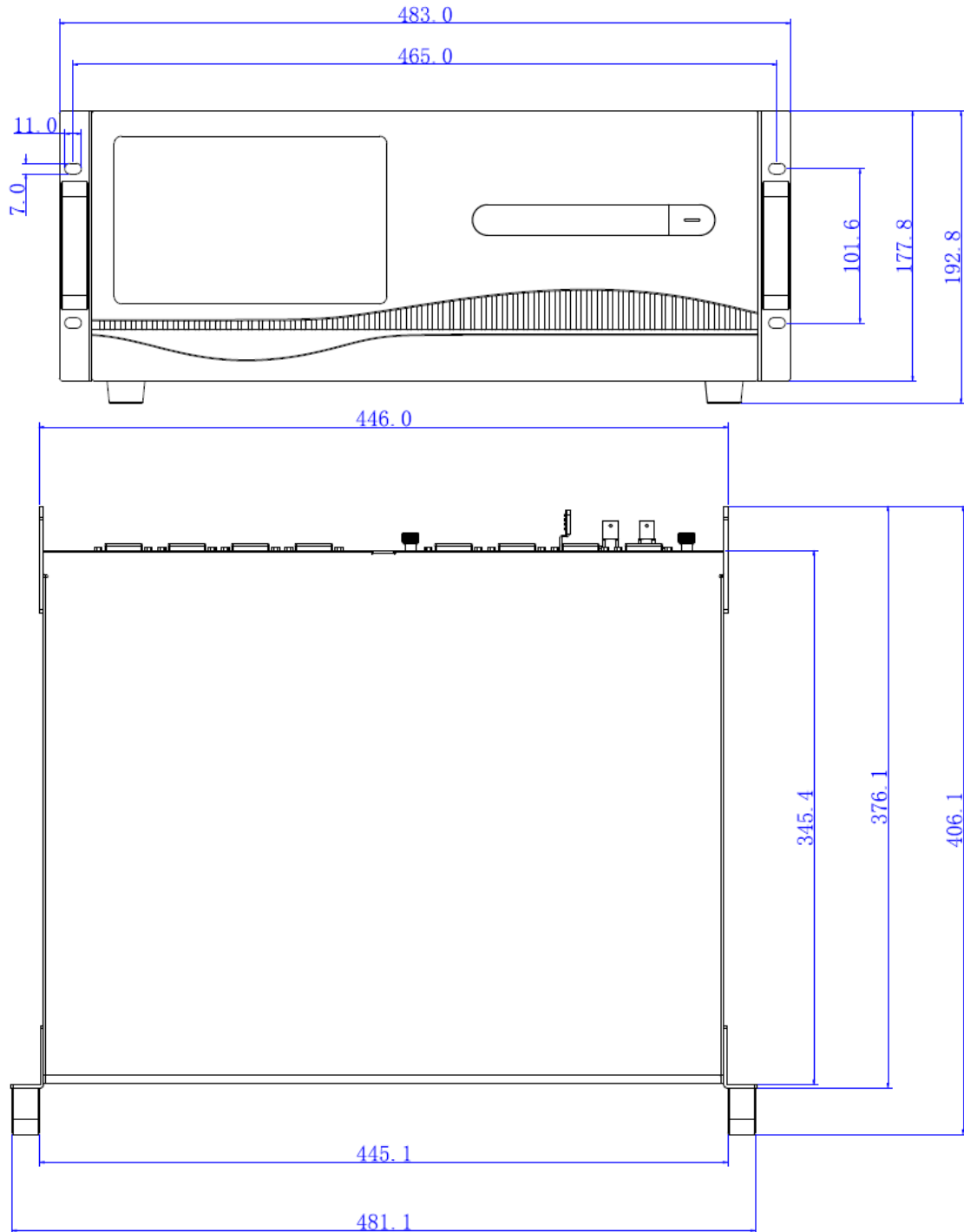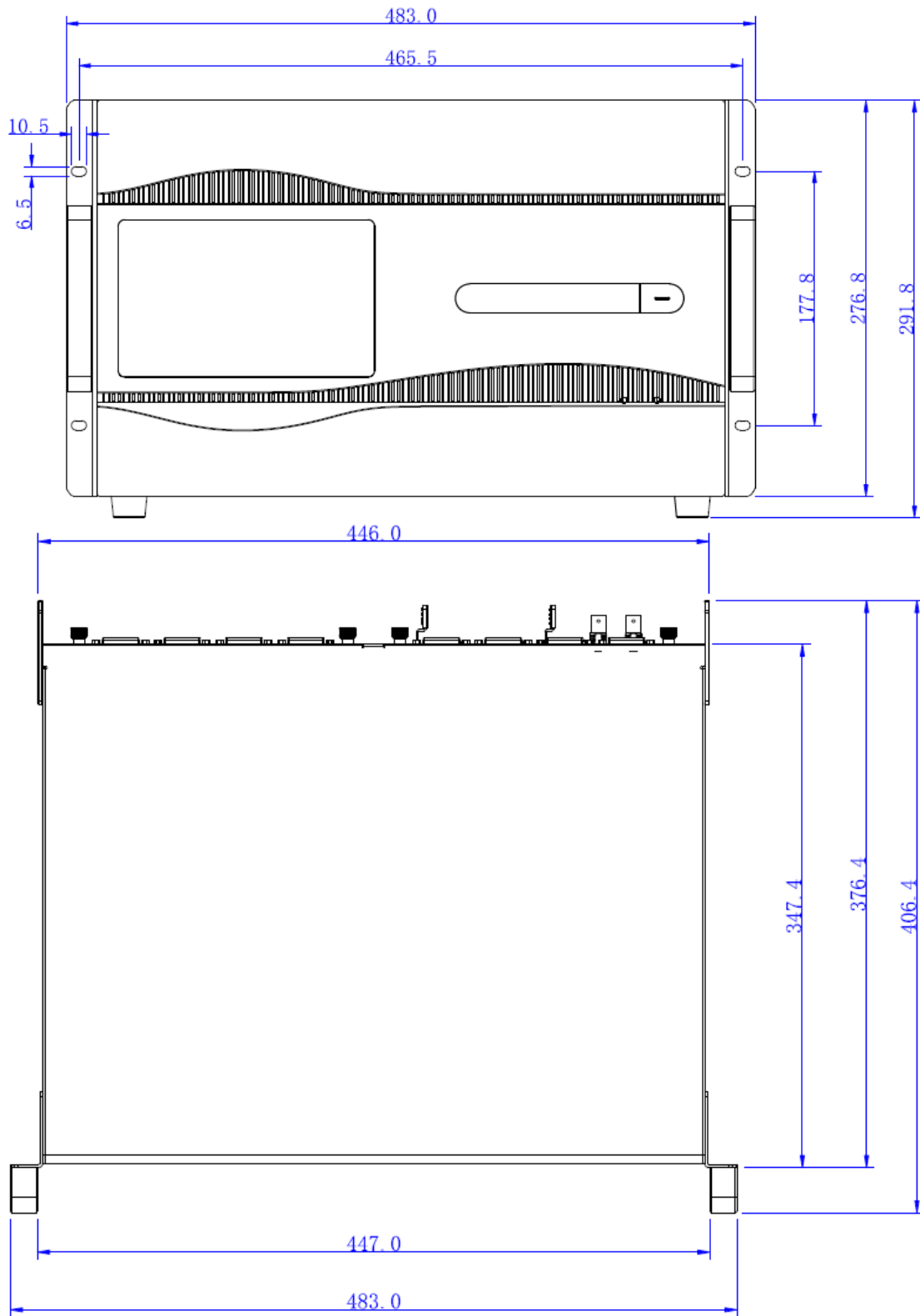| Model		X100-4U/7U	
Chassis		4U	7U
Max. input boards		4	8
Max. input ports		16	32
Max. output boards		4	8
Preview & monitoring boards		1	1
Layers		32	64
Ethernet port output	Max. ports	40	80
	Max. load	26 million pixels	52 million pixels
Fiber port output	Max. ports	4	8
	Max. load	26 million pixels	52 million pixels
Video output	Max. ports	16	32
	Max. load	16× 1080P	32× 1080P
Load range (Max. width/height)		32,767 pixels	32,767 pixels
Operating environment	Temp.	10°C~45°C / 50°F~113°F	
	Humidity	0%RH~85%RH, non-condensing	
Storage environment	Temp.	-10°C~60°C / 14°F~140°F	
	Humidity	0%RH~95%RH, non-condensing	
Electrical parameters	Power supply	AC 100~240V, 50/60Hz, supports dual-power backup (backup power optional)	
	Avg. board power	10W	10W
	Max. power	120W	230W
Device parameters	Dimensions (W*H*D)	483.0mm (19.02")× 177.8 mm (7.00")× 406.1mm (15.99")	483.0mm (19.02")× 276.8mm (10.90")× 406.4 mm (15.99")
	Net weight	12.5kg(27.56lbs)	19.3kg (42.55lbs)

Certification

CCC.

* 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 as soon as possible. Otherwise, the customer shall be responsible for the legal risks or Colorlight has the right to claim compensation.

Reference Dimensions

X100 Pro-4U

X100 Pro-7U

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.

Thank you for choosing Colorlight Cloud Tech Ltd product. If you have any questions or suggestions during use, please contact us through official channels. We will do our utmost to provide support and listen to your valuable suggestions. For more information and updates, please visit www.colorlightinside.com or scan the QR code.

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