CURTAP

Video Wall Splicer

Specifications

Change History

Document Version	Release Date	Description
V1.0.0	2023-09-05	First release

Introduction

The C-UVP is a high-performance video wall splicer with a pure hardware architecture. The whole unit adopts a modular and plug-in design, and allows for flexible configuration and hot swapping of input and output cards. The C-UVP supports the access of various on-site videos and also supports dual control card backup. Thanks to excellent features and stable performance, the C-UVP can be widely used in a variety of applications, such as energy and power, judicial departments and prisons, military command, water conservancy and hydrology, meteorologic earthquake prediction, enterprise management, metallurgy of steel, banking and finance, national defense, public security traffic management, production scheduling, radio and television, educational and scientific research.

Based on the powerful hardware FPGA system architecture, with a modular and plug-in design, the C-UVP features a stable and highly efficient pure hardware architecture, and provides a variety of connector modules for flexible and personalized configuration, making system design and modification more convenient. The C-UVP supports 4K ultra HD inputs and outputs, multi-screen and multi-layer management, input and output EDID management and monitoring, and high-definition scrolling OSD text and more, bringing you a rich image construction experience.

In addition, the C-UVP adopts the B/S architecture and can be accessed and controlled via tablets, kiosks, and PCs and more, without the need to install an application program. Moreover, online collaboration of multiple users is supported and the Web page response speed is very fast, which greatly improves on-site setup efficiency.

Features

Modular and plug-in design, free combination at your will

- Multi-capacity configuration on a single card slot
  - 4x 2K×1K@60Hz
  - 2x 4K×1K@60Hz
  - 1x 4K×2K@60Hz
- Online status monitoring of all input and output cards
- Hot-swappable input and output cards

Multi-screen management for centralized control

- Each screen can have its output resolution.
- Output mosaic

Adopts the frame synchronization technology, ensuring all the output connectors output the image synchronously. The image is complete

and played smoothly, without any stuck, frame loss, tearing or piecing.

- Simple screen configuration using a single card and connector or using multiple connectors on different cards
- Screen configuration using mixed connectors

  Configure a splicing screen using an HDMI and DVI output connectors with the same frame rates.
- LCD bezel compensation
- Accompanied audio output

  Synchronously output the desired audio to other devices according to the business applications.

Diverse display possibilities for flexible configuration

- Multi-layer display

  A single card supports 8x 2K layers, 4x DL layers or 2x 4K layer.
- High-definition scrolling text
  - Customize the scrolling text content, such as slogans or notification messages, and set the text style, scrolling direction and speed.
  - Multi-language and multi-font display supported
- Up to 2,000 presets

  Fade effect and seamless switching supported, less than 60ms preset switching duration
- Scheduled playback of preset playlist

  Set whether to add the presets to playlist, which is ideal for monitoring, exhibitions, presentations, and other applications.
- OSD settings on a single screen
- Channel logo management

  Set a text or image logo for identifying the input source.
- Input source cropping and renaming after cropping

  Crop any input source image and form a new input source after cropping.
- Auto decryption of HDCP-encrypted sources
- Decimal frame rates supported
- Input source grouping management
- Output connector rotation mosaic

Web-page control, easy, friendly and convenient

- Web control

  Real-time response and 1000M/100M/10M self- adaptive network control, allowing for multi- user collaboration by Ethernet
- Monitoring of inputs and outputs on Web page
- Firmware update on Web page

Status monitoring and backup design for better stability and reliability

- Dual control card backup, avoiding device disconnection

Supports dual control card backup on a single device, automatically and smoothly switches

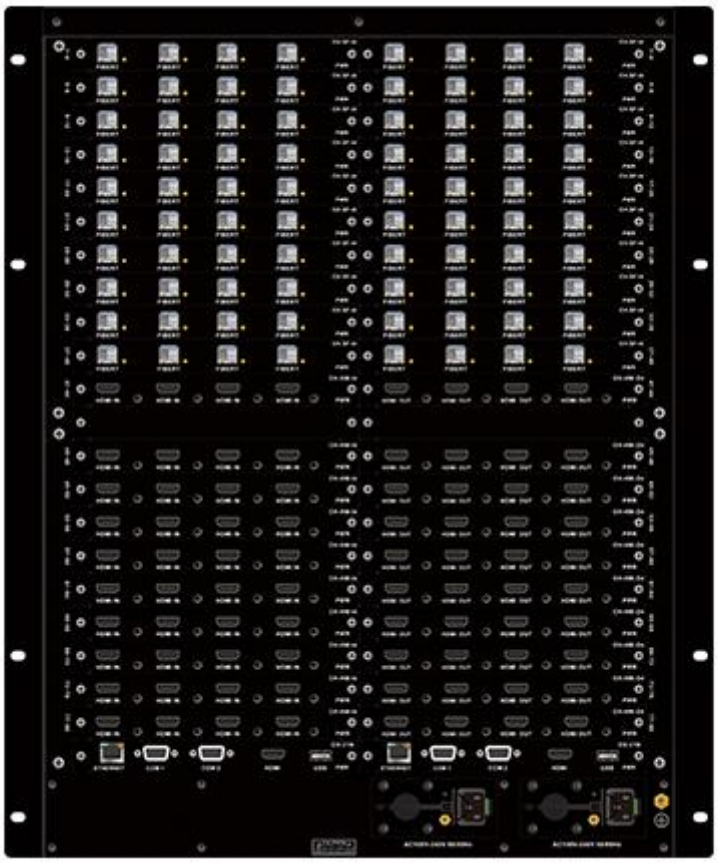
the card when a failure occurs to ensure stable system running, and sends running status in real time.

- Self-test for fault detection
- Auto monitoring and alarms

Supports hardware monitoring, such as fan rotation speed, module temperature and voltage, running status, and sends fault alarms if necessary.

Appearance

*The picture shown is for illustration purpose only.



C-UVP

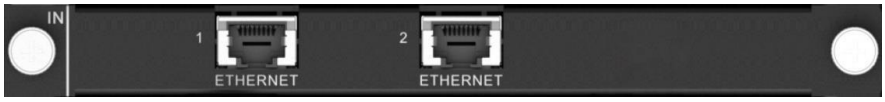
*The picture shown is for illustration purpose only. Actual product may vary due to product enhancement.

Notes:

- The silkscreen marking "I-x" indicates the slot is dedicated to the input card. "I" stands for input and "x" stands for the slot number. For example, "I-1" indicates this slot is the 1st input slot and for installing an input card only.
- The silkscreen marking "O-x" indicates the slot is dedicated to the output card. "O" stands for output and "x" stands for the slot number. For example, "O-10" indicates this slot is the 10th output slot and for installing an output card only.
- The silkscreen marking "I/O-x" indicates the slot accepts both input and output cards.
- The silkscreen marking "$\frac{\text{I-x}}{\text{MVR}}$" indicates the slot accepts both input and preview cards. Insert an input card to access more input sources, or insert a preview card to monitor inputs and outputs. "x" stands for the slot number.
- The silkscreen marking "$\frac{\text{I-x}}{\text{CTRL}}$" indicates the slot accepts both input and control cards. Insert an input card to access more input sources, or insert a control card to serve as the backup one. "x" stands for the slot number.
- The silkscreen marking "CTRL" indicates the slot is dedicated to the control card only.

Input Card	
Es_4xDVI input card	 Support for single link and dual link input modes HDCP 1.4 compliant Does not support interlaced signal input. • Single link mode: – Four DVI connectors are all used for input. – Common resolutions: 1920×1080@30/48/50/59.94/60Hz 1600×900@48/50/59.94/60Hz

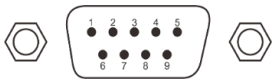
	1366×768@50/59.94/60Hz 1280×720@48/50/59.94/60Hz – Custom resolutions: Max. width: 2048 pixels Max. height: 2048 pixels • Dual link mode: – Connectors 2 and 4 are used for input, and connectors 1 and 3 are unavailable. – Common resolutions: 3840×2160@30Hz 3840×1080@50/59.94/60Hz 1920×1080@30/48/50/59.94/60Hz – Custom resolutions: Max. width: 3840 pixels Max. height: 3840 pixels Status LEDs: • On: The input source is accessed normally. • Off: No input source is accessed or the input source is abnormal.
Es_4xHDMI input card	 Does not support interlaced signal input. 4x HDMI 1.3 mode • 2x HMDI1.3, 2x HDMI 1.4 • Four connectors are all used for input. • Custom resolutions: Max. width: 2048 pixels Max. height: 2048 pixels • HDCP 1.4 compliant • Common resolutions: – 1920×1080@30/48/50/59.94/60Hz – 1600×900@48/50/59.94/60Hz

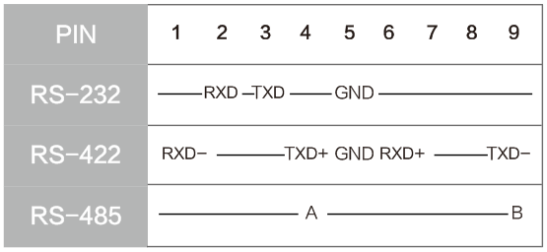
	– 1366×768@50/59.94/60Hz – 1280×720@48/50/59.94/60Hz 2x HDMI 1.4 mode • Two HDMI 1.4 connectors are used for input, but two HDMI 1.3 connectors are unavailable. • Common resolutions: – 3840×2160@30Hz – 3840×1080@50/59.94/60Hz – 1920×1080@30/48/50/59.94/60Hz • Custom resolutions: Max. width: 3840 pixels Max. height: 3840 pixels • HDCP 1.4 compliant Status LEDs: • On: The input source is accessed normally. • Off: No input source is accessed or the input source is abnormal.
Es_2xRJ45 IP input card	 2x RJ45 Gigabit Ethernet ports Support for interlaced signal input • Supported protocols: RTSP, GB28181 and ONVIF • Supported coding formats: H.264 and H.265 • Single card decoding capability: – 4x 4K×2K – 8x 4K×1K – 16x 2K×1K • DHCP compliant
Es_4xVGA input card	 4x VGA Each connector supports the maximum resolution of

	1920×1200@60Hz. Status LEDs: • On: The input source is accessed normally. • Off: No input source is accessed or the input source is abnormal.
Es_1xHDMI2.0 input card	 1x HDMI 2.0 • Backward compatible with HDMI 1.4 and HDMI 1.3 • HDCP 2.2 compliant • Common resolutions: – 4096×2160@60Hz – 3840×2160@60Hz – 3840×1080@50/59.94/60/120Hz – 1920×1080@30/48/50/59.94/60Hz • Custom resolutions: – Max. width: 4092 pixels – Max. height: 4092 pixels Status LEDs: • On: The input source is accessed normally. • Off: No input source is accessed or the input source is abnormal.
Es_1xDP1.2 input card	 1x DP 1.2 • Backward compatible with DP 1.1 • HDCP 1.3 compliant • Common resolutions: – 8192×1080@60Hz – 4096×2160@60Hz – 3840×2160@30/60Hz – 3840×1080@30/50/59.94/60/120Hz – 1920×1080@30/48/50/59.94/60Hz • Custom resolutions:

<table>
<tr><td></td><td>
– Max. width: 8192 pixels
– Max. height: 4095 pixels
Status LEDs:
• On: The input source is accessed normally.
• Off: No input source is accessed or the input source is abnormal.
</td></tr>
<tr><td>Es_4x3G SDI input card</td><td>


• 4x 3G-SDI
– Backward compatible with HD-SDI and SD-SDI
– Supports ST-424 (3G), ST-292 (HD) and SMPTE 259 SD.
– Each connector supports the maximum resolution of 1920×1080@60Hz.
– Supports 1080i/576i/480i de-interlacing processing
– Does not support input resolution and bit depth settings.
• Status LEDs:
– On: The input source is accessed normally.
– Off: No input source is accessed or the input source is abnormal.
</td></tr>
<tr><td>Es_ STD I/O card</td><td>


• 2x COM
Programmable RS422/RS485/RS232 ports that are used to control the devices that adopt RS422/RS485/RS232 protocol
– COM port pins are shown as below:


– Pin wirings are shown as below:


• 1x ETHERNET
Connect to the control PC for device control.
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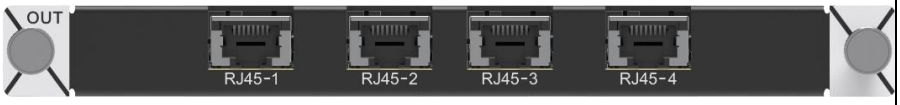
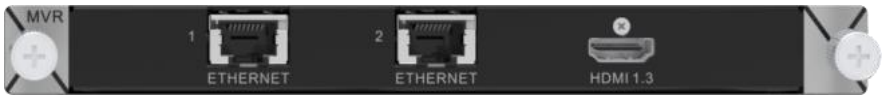
</table>

	• 3x I/O – Trigger the execution of the function requirements via programming. – Input and output modes supported – Output voltage: 3.3V, input voltage: 5V – Pins 1, 2 and 3 can be set to either the input or output, and pin G is the common grounding pin for pins 1, 2 and 3. • 3x RELAY OUT – Connect to the relay to control the power on and off the connected device. – Voltage: 30 VDC, current: 3A at maximum – Six pins are divided into three groups, which can be connected or disconnected via programming. • 3x IR OUT – Connect to an infrared emitter with an input voltage below 5V. – Pins 1, 2 and 3 are used for infrared emission, and pin G is the common grounding pin for pins 1, 2 and 3.
Output Card	
Es_4xDVI output card	 • 4x SL-DVI – Four connectors are all used for output. – Common resolutions: 1920×1080@30/48/50/59.94/60Hz 1600×900@48/50/59.94/60Hz 1366×768@50/59.94/60Hz 1280×720@48/50/59.94/60Hz – Custom resolutions: Max. width: 2560 pixels Max. height: 2560 pixel – Supports 8-bit RGB 4:4:4/YCbCr 4:4:4/YCbCr 4:2:2 output. • Status LEDs:

	– On: The output connector is connected normally. – Off: The output connector is not connected.
Es_4xHDMI output card	 4x HDMI 1.3 • Four connectors are all used for output. – Common resolutions: 1920×1080@30/48/50/59.94/60Hz 1600×900@48/50/59.94/60Hz 1366×768@50/59.94/60Hz 1280×720@48/50/59.94/60Hz – Custom resolutions: Max. width: 2560 pixels Max. height: 2560 pixel • Supports 8-bit RGB 4:4:4/YCbCr 4:4:4/YCbCr 4:2:2 output. Status LEDs: • On: The output connector is connected normally. • Off: The output connector is not connected.
Es_1xHDMI 2.0 output card	 2x HDMI 2.0 • Connector 2 copies the output on connector 1. – Common resolutions: 8192×1080@60Hz 4096×2160@60Hz 3840×2160@60Hz 3840×1080@50/59.94/60/120Hz 1920×1080@30/48/50/59.94/60Hz – Custom resolutions: Max. width: 8192 pixels

	Max. height: 7680 pixel • Supports 8-bit RGB 4:4:4/YCbCr 4:4:4/YCbCr 4:2:2 output. Status LEDs: • On: The output connector is connected normally. • Off: The output connector is not connected.
Es_4xHDMI+4xAudio output card	 4x HDMI 1.3, 4x 3.5mm audio connectors HDMI 1.3 • Four connectors are all used for output. – Common resolutions: 1920×1080@30/48/50/59.94/60Hz 1600×900@48/50/59.94/60Hz 1366×768@50/59.94/60Hz 1280×720@48/50/59.94/60Hz – Custom resolutions: Max. width: 2560 pixels Max. height: 2560 pixel • Supports 8-bit RGB 4:4:4/YCbCr 4:4:4/YCbCr 4:2:2 output. AUDIO • Connect to the amplifier, active speaker and other devices. • 4x 3.5 mm audio output connectors • Audio sampling rate up to 48 kHz Status LEDs: • On: The output connector is connected normally. • Off: The output connector is not connected.
Es_1xHDMI 2.0+1xAudio output card	 2x HDMI 2.0, 2x 3.5mm audio connectors • Connector 2 copies the output on connector 1. – Common resolutions:

	8192×1080@60Hz 4096×2160@60Hz 3840×2160@60Hz 3840×1080@50/59.94/60/120Hz 1920×1080@30/48/50/59.94/60Hz – Custom resolutions: Max. width: 8192 pixels Max. height: 7680 pixel • Supports 8-bit RGB 4:4:4/YCbCr 4:4:4/YCbCr 4:2:2 output. AUDIO • Connect to the amplifier, active speaker and other devices. • Connector 2 copies the audio output on connector 1. • 2x 3.5mm audio output connectors • Audio sampling rate up to 48 kHz Status LEDs: • On: The output connector is connected normally. • Off: The output connector is not connected.
Es_4xRJ45 output card	 4x RJ45 CATE6 and above standard Ethernet cables are recommended and the sequence must use parallel. • Common resolutions: 1920×1080@30/48/50/59.94/60Hz 1600×900@48/50/59.94/60Hz 1366×768@50/59.94/60Hz 1280×720@48/50/59.94/60Hz • Custom resolutions: Max. width: 2560 pixels Max. height: 2560 pixel • HDCP 1.4 compliant

	• Supports 8-bit RGB 4:4:4/YCbCr 4:4:4/YCbCr 4:2:2 output. • Three output modes supported – Color: transmission distance of 50 m (shortest) – Balanced: transmission distance of 70 m – Distance: transmission distance of 100 m (longest)
Es_2xHDMI1.4+2xAudio output card	 2x HDMI 1.4, 2x 3.5mm audio connectors HDMI 1.4 • Two connectors are all used for output. – Common resolutions: 4096×2160@30Hz 3840×2160@30Hz 3840×1080@30/50/59.94/60Hz 1920×1080@30/48/50/59.94/60Hz – Custom resolutions: Max. width: 4096 pixels Max. height: 4096 pixel • Supports 8-bit RGB 4:4:4/YCbCr 4:4:4/YCbCr 4:2:2 output. AUDIO • Connect to the amplifier, active speaker and other devices. • 2x 3.5mm audio output connectors • Audio sampling rate up to 48 kHz Status LEDs: • On: The output connector is connected normally. • Off: The output connector is not connected.
Es_2xRJ45+1xHDMI1.3 preview card	 • 2x RJ45 Gigabit Ethernet ports Connected to the network for monitoring the inputs and outputs. • 1x HDMI 1.3

	Connected to a monitor for display the monitoring information.
Es_control card	
	
Control	• 1x IR IN connector Supports the infrared control over the devices. • 1x IR OUT connector Supports the programmable infrared control. • 1x I/O connector – Supports the programming to trigger the execution of various functional requirements. – Supports the input and output modes. – Input I/O voltage: 5V, output I/O voltage: 3.3V • 2x RELAY OUT connector – Connect to a relay. – Voltage: 30V DC; maximum current: 3A • 1x GND connector A grounding connector
COM	A serial port that adopts RS232 serial protocol Support for central control system • IN: Accept the signal from the central control system. • OUT: Loop the signal. **Note:** The COM port cannot be connected to the network (router or switch) or LED cabinet (receiving card).
USB	1x USB 2.0, Reserved **Note:** The USB connectors cannot provide power for the connected devices.
ETHERNET	A Gigabit Ethernet port • Connect to the control PC for communication.

	• Connect to the router, switch or PC. • For Web control

Specifications

Model	C-UVP	
Chassis	C-UVP	C-UVP Pro
Rack Unit	3U / 5U / 7U / 8U	
Max. Input Cards	32	48
Max. Input Channels	32	48
Max. Output Cards	32	48
Max. Output Channels	84	104

Max. Layers		32	48
Electrical Specifications	**Power connector**	100–240V~, 50/60Hz, 2.6A	
	Power consumption	150W	
Operating Environment	**Temperature**	2°C to 50°C	
	Humidity	0% RH to 80% RH, non-condensing	
Storage Environment	**Temperature**	–10°C to +60°C	
	Humidity	0% RH to 95% RH, non-condensing	
Physical Specifications	**Dimensions**	482.6mm × 139.5mm × 348.8mm	
	Net weight	7.7 kg	
	Gross weight	13.5 kg	
Packing Information	**Packing box**	595mm × 245mm × 495mm	
	Accessories	1x Power cord 1x RJ45 Ethernet cable 1x Grounding cable 1x HDMI cable 1x Certificate of Approval 1x Safety Manual	

Video Source Features

Input Connector	Color Depth	Max. Input Resolution
HDMI 2.0	RGB4:4:4 8bit	4096×2160@60Hz 8192×1080@60Hz (forced)
	YCbCr4:4:4 8bit	
	YCbCr4:2:2 8bit	
HDMI 1.4	RGB4:4:4 8bit	4096×2160@30Hz
	YCbCr4:4:4 8bit	
	YCbCr4:2:2 8bit	
HDMI 1.3	RGB4:4:4 8bit	2048×1152@60Hz
	YCbCr4:4:4 8bit	
	YCbCr4:2:2 8bit	
SL-DVI	RGB4:4:4 8bit	2048×1152@60Hz
DL-DVI	RGB4:4:4 8bit	3840×2160@30Hz

Official website

1 www.CURTAP.tech