CALICO | PRO

VIDEO PROCESSOR

Video Processing

CALICO video processing	CALICO FPGA core (10-bit 4:4:4)
Parallel processing architecture	Yes
Video / graphics layers	256 (max including video windows, keys, graphics, labels, background images)
Video latency (input to output)	Min 1 frame, max 2 frames regardless of I/O
Up/down/cross conversion	Yes (all inputs and outputs)
Number of canvasses	4
Canvas size	(64,000 x 64,000) pixels per canvas
Keying	Luminance Keying (any layer to layer below / keys cannot be overlapped). Adjustable key-range and focus adjustment.
Fading	Fade to black / fade to transparent / crossfade
Display size compensation	Yes, different physical sizes in video walls (Physical Mode).
Output rotation	Yes for any outputs, windows and labels (360° rotation 1° increments).
Output mapper	Yes (All outputs)
Projector edge blending	Yes (all outputs)
HDCP key handling	HDCP 2.2 (Expansion modules may have different specifications depending on connectivity)

Video Inputs (for standard unit 8x HDMI 2.0 IN)

HDMI 2.0	8x 2160p (4096x2160) 60Hz
HDCP	2.2 / 1.4
Chroma sub-sampling (10-bit)	4:2:2
Chroma sub-sampling (8-bit)	4:4:4
Color space	YCbCr BT.601, YCbCr BT.709, RGB, RGB limited range and auto detect

Supported Input Resolutions (for standard unit 8x HDMI 2.0 IN)

720p (1280x720)	23.98, 24, 25, 29.97, 30, 50, 59.94, 60Hz
1080i (1920x1080)	50, 59.94, 60Hz
1080p (1920x1080)	23.98, 24, 25, 29.97, 30, 50, 59.94, 60, 100, 119.88, 120Hz
2160p (3840x2160)	23.98, 24, 25, 29.97, 30, 50, 59.94, 60Hz
2160p (4096x2160)	23.98, 24, 25, 29.97, 30, 50, 59.94, 60Hz

Video Outputs (for standard unit 4x HDMI 2.0 out)

HDMI 2.0	4x 2160p (3840x2160) 60Hz
HDCP	2.2 / 1.4
Chroma sub-sampling (10-bit)	4:2:2
Chroma sub-sampling (8-bit)	4:4:4
Color space	YCbCr BT.601, YCbCr BT.709, RGB, RGB limited range and auto detect

Supported Output Resolutions (for standard unit 4x HDMI 2.0 out)

720p (1280x720)	23.98, 24, 25, 29.97, 30, 50, 59.94, 60Hz
1080i (1920x1080)	50, 59.94, 60Hz
1080p (1920x1080)	23.98, 24, 25, 29.97, 30, 50, 59.94, 60, 100, 119.88, 120Hz
2160p (3840x2160)	23.98, 24, 25, 29.97, 30, 50, 59.94, 60Hz

Images (Backgrounds / Labels)

Still Image formats supported (internal image store)	BMP, PNG,JPG,JPEG, TIF, TIFF, PPM, PGM, PBM, HDR
Interfaces	CALICO Studio, File transfer supported (FTP). USB-3.0 on rear of unit

Control Methods

Network interface	RJ45 - Gigabit Ethernet
Network standard	IPv4
API protocols	REST using HTTP or HTTPS, CLI using TCP/IP
API specification	Available from https://api.tvone.com/

Warranty

Limited warranty	5 years parts and labor

Regulatory Compliance

System / modules	FCC, CE, RoHS, UL, UKCA

Mechanical

Height	88mm (3.46")
Width	435mm (17.13") / including rack ears 482mm (19")
Depth	341mm (13.43") / including PSU Handle 364mm (14.33")
Weight	10kg (22 lbs.)

Environmental

Operating temperature	32° to 104°F (0° to +40°C)
Operating humidity	10% to 85%, Non-condensing
Storage temperature	14° to +158°F (-10° to +70°C)
Storage humidity	10% to 85%, Non-condensing
BTU	1365 BTU (400W)
Fan noise	Nominal 45dB(A) - max 57dB(A) (@1m)

Power

Dual-redundant hot-swappable PSU	400W load balancing (One supplied - additional PSU optional)
Power consumption	250W
Input voltage	100 to 240V (+/- 10%) AC (50/60Hz), 6-3A auto switching
Output voltage	12V dc

tvONE

Available Accessories (Field Upgradable / Replaceable)

C7-PRO-HDMI-4K4IN	Quad 4K60 HDMI input module 2160p (4096x2160) 60Hz 4:4:4
C7-PRO-HDMI-4K2IN	Dual 4K30 HDMI input module 2160p (4096x2160) 30Hz dual, or single 60Hz 4:2:0
C7-PRO-HDMI-2K4IN	Quad 2K60 HDMI input module 1080p (1920x1080) 60Hz 4:4:4
C7-PRO-12GSDI-4IN	Quad 12GSDI input module 2160p (4096x2160) 60Hz 4:2:2
C7-PRO-3GSDI-4IN	Quad 3GSDI input module 1080p (1920x1080) 60Hz 4:2:2
C7-PRO-HDBT-4K2IN	Dual 4K30 HDBT input module 2160p (4096x2160) 30Hz dual, or single 60Hz 4:2:0
C7-PRO-MEDIA	Dual 4K30 + 1080p/60Hz streaming input and media playback module
C7-PRO-AUD-2IN-4OUT	Audio external input and output module
C7-PRO-HDMI-4K4OUT	Quad 4K60 HDMI output module 2160p (3840x2160) 60Hz 4:4:4
C7-PRO-HDMI-2K8OUT	Eight 2K60 HDMI output module 1080p (1920x1080) 60Hz 4:4:4 and 4:2:2 10-bit
C7-PRO-12GSDI-4OUT	Quad 12GSDI output module 2160p (3840x2160) 60Hz 4:2:2
C7-PRO-2U-FILTER	Optional fan filter kit
C7-PRO-400RPS	Hot swappable, dual-redundant power supply

Main Features

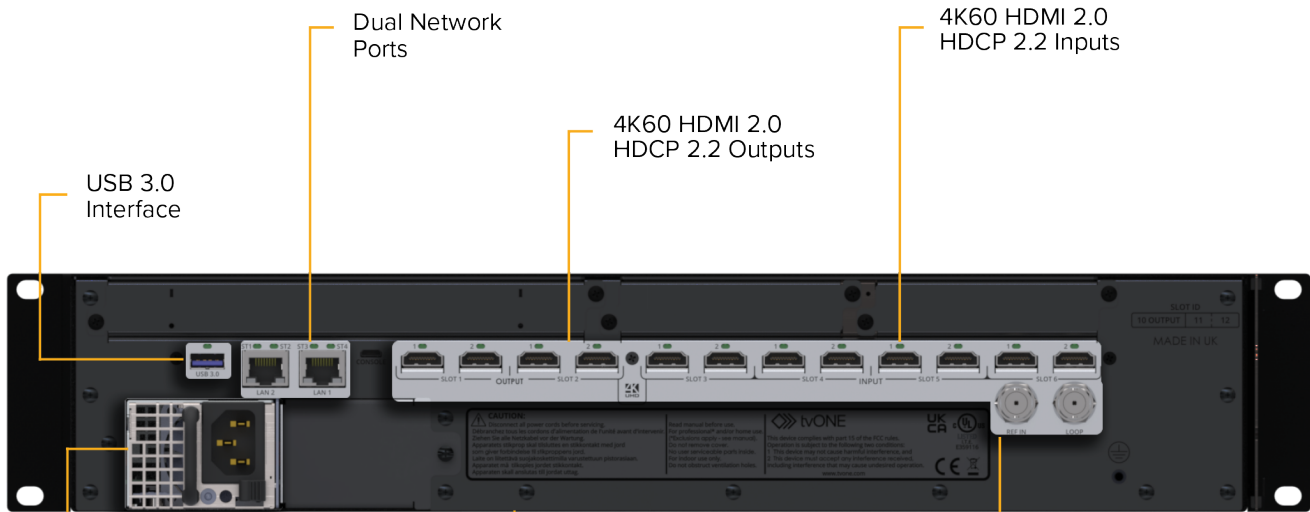|	
FPGA video processing	CALICO core (patented video processing).
Set up and control Software	CALICO Studio (free download and free to use. From https://tvone.com).
Included inputs and outputs	8x Inputs, 4x outputs (4K60 HDMI 2.0, HDCP 2.2).
Video windows	Up to 256 per system (no canvas restrictions).
Four design canvases (over 16 Gigapixels of design space)	4.1 Gigapixels per canvas. Canvases are massive real world design spaces. Place displays and contents freely and accurately.
Field upgradable	Firmware updates using CALICO Studio.
Output mapper	32 maps per output (used for dvLED mapping and for monitoring to create virtual outputs).
Input mapper *	32 maps per input (create virtual / cropped sources from a single input).
HDR (High Dynamic Range) *	HDR10 and HLG (Hybrid Log Gamma) - convert any input to any output.
Custom resolution engine *	Available for inputs and outputs (with restrictions).
Window source cropping	Any input, max 256 crops / dependent on system bandwidth (live crops from any input source).
Canvas watch	Used for monitoring, multiviewing. Any output including mapped outputs. Any and/or all available outputs can be set to canvas watchers.
Labelling	Complete labelling engine include: Source, Text and Images (upload images via CALICO Studio for backgrounds, keys, graphics and labels). Labels can be linked to video windows, crops, displays and outputs.
Presets	Up to 500 with effects and transitions.
Any output any canvas	Any output including mapped outputs on any canvas in any position and orientation.
Optional expansion modules (Increase the number and/or type of I/O connections, and add new features and functionality)	3x slots (1x high bandwidth input, 1 standard input, 1x high bandwidth output). Can be fitted as a future upgrade. Installable from the rear of the unit.
Internal storage	3GB (images, EDID's, fonts and labels).
Reference lock (Genlock)	BNC ref input and loop.
Audio	One stereo pair per canvas. Expansion module available for analog and digital audio ingest and break-out (supported on HDMI and SDI).
Display agnostic	Designed for dvLED controllers / displays / projectors.
2U compact size	Rack mount or desktop (removable rack ears and feet included).
EDID manager	Up to 20 custom EDID's can be uploaded and applied to inputs in addition to the provided system EDID's.
Secure access	User login with 3 levels of access available (Admin / Power-user / User).
Secure connection	HTTPS with AES 128bit encryption (TLS 1.2 , HTTP 1.1, TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA25).
Low power consumption	250W including optional modules.
OLED display	IP address, device name and status messages (customizable using CALICO Studio, content, brightness and ON/OFF).
Integrated carry handles	Easy rack installation and transport.
Rugged all metal cabinet and chassis	Solid aluminum front panel and powder coated steel cabinet.
Front panel illumination	Fully controllable via CALICO Studio (brightness level and ON/OFF).
Designed for continuous use	24/7, 365 days a year operation, with 5-year limited warranty. Perfect for mission critical applications.
Smart cooling system	Automatic temperature controlled fans with option to fix a fan profile if required. 3x 80mm fans fitted.
Optional stainless steel fan filter kit available	For dusty operating environments. Only requires cleaning periodically, no need to replace, removable from the rear without de-installation.

* Coming soon

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VIDEO PROCESSOR

CALICO PRO sets a new standard in video processing technology. This revolutionary video processor supports hundreds of windows, featuring industry-leading performance with 4K60 resolution, 10-bit image processing, ultra-low latency, and HDR support. CALICO PRO empowers the most intricate multi-window workflows available today.

Dual Network Ports

4K60 HDMI 2.0 HDCP 2.2 Inputs

4K60 HDMI 2.0 HDCP 2.2 Outputs

USB 3.0 Interface

Included Field Replaceable PSU

On-board storage for images, labels and templates
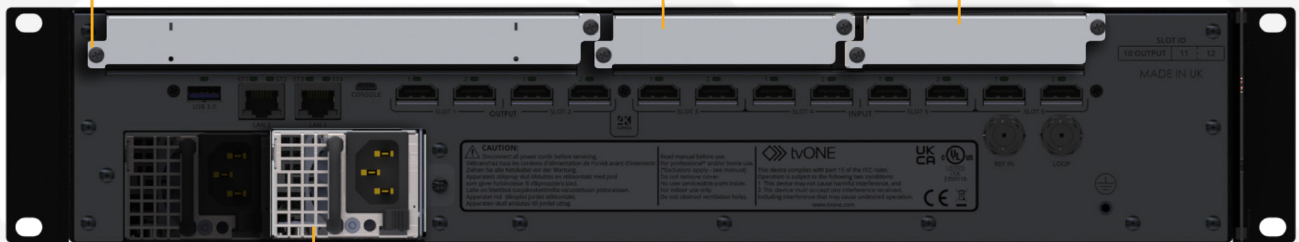
Reference and Loop

Optional Input Modules

2x 4K HDMI input
2 x 4K/1080p HDMI Media & Streaming
2 x 4K HDBaseT
4 x 1080p60 HDMI
4 x 3G-SDI
S/PDIF & Analog Audio

Optional High Bandwidth Output Modules

4 x 4K60/1080p120 HDMI
4 x 4K60 HDMI
8 x 1080p60 HDMI
4 x 12G-SDI

Optional High Bandwidth Input Modules

4 x 4K60 HDMI
4 x 12G-SDI

Optional Dual Redundant, Hot-Swappable Power Supply

Optional, fit once, stainless steel Air Filter