

CALICO | PRO

VIDEO PROCESSOR

C7-PRO-4200



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) Control and set-up software includes full off-line configuration editor
Video windows	256
Four design canvases (over 16 Gigapixels of design space)	41 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 / mapped sources from a single input)
HDR (High Dynamic Range)	HDR10 and HLG (Hybrid Log Gamma) - convert any input to any output* (*for high bandwidth modules)
Custom resolution engine	Available for inputs and outputs (with restrictions)
Window source cropping	Any input / 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	Max 222 labels, source, text, images and UTC (upload images via CALICO studio for backgrounds, keys, graphics and labels). Labels can be linked to video windows, crops, 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)	15x video slots + Aux Slot + Control module slot (11x Input slots - 452 Gb input bandwidth) + (4x Output slots - 240 Gb output bandwidth) Can be fitted as a future upgrade. Installable from the rear of the unit
Internal storage	3GB (images, EDID's, fonts and labels)
Syncronisation	BNC ref input and loop, Framelock to any input video source, synclock using internal clock
Audio	One stereo pair per canvas. Input (44.1kHz and 48kHz) Output (48kHz). Expansion module available for analog and digital audio ingest and break-out
Display agnostic	Designed for DVLED controllers / displays / projectors
4U compact size	Rack mount or desktop (removable rack ears and feet are included)
EDID manager	Up to 20 custom EDID's can be uploaded and applied to inputs in addition to the provided system EDID's. Single resolution EDID's can be created for a specific input
Secure access	User login with 3 levels of access available (Admin / Power-user / User)
Secure connection	HTTPS
Low power consumption	TBD but under 700w
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	140mm intake and exhaust fans
Included stainless steel fan filter	For dusty operating environments. Only requires cleaning periodically, no need to replace, removable from the rear without de-installation

Video Processing

CALICO video processing	CALICO FPGA core (10-bit 4:4:4)
Parallel processing architecture	Yes
Video / graphics layers	>256 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 canvases	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 0.01° increments)
Output mapper	Yes (All outputs)
Projector edge blending	Yes (all outputs)
HDCP key handling	Yes, HDCP 2.2 (Expansion modules may have different specifications depending on connectivity)

Video Inputs

Module Dependent	Max HD 44 inputs, Max 4K 36 inputs
HDCP	2.2 / 1.4
Chroma sub-sampling (10-bit)	4:2:2
Chroma sub-sampling (8-bit)	4:4:4
Color space	SDR YUV (L) BT.601, BT.709, SDR RGB (L) BT.709, RGB (F) BT.709, HLG YUV (L) BT.2020, HDR10 YUV (L) BT.2020 and auto detect

Video Outputs

Module Dependent	Max HD 32 outputs, Max 4K 16 outputs
HDCP	2.2 / 1.4
Chroma sub-sampling (10-bit)	4:2:2
Chroma sub-sampling (8-bit)	4:4:4
Color space	SDR YUV (L) BT.601, BT.709, SDR RGB (L) BT.709, RGB (F) BT.709, HLG YUV (L) BT.2020, HDR10 YUV (L) BT.2020

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 on rear of unit

Control Methods

Network interface	RJ45 - Gigabit Ethernet
Network standard	IPv4
Monitoring	SNMP and SYSLOG
API protocols	REST using HTTP or HTTPS, CLI using TCP/IP
API specification	Available from https://api.tvone.com/
Lighting Desk	DMX - sACN
Control Software	CALICO studio
Control App	CALICO Studio Mobile (Android / IOS)
Plug-in's	Q-SYS, Crestron, Streamdeck (via Companion APP plug-in)

Warranty

Limited warranty	5 years parts and labor
------------------	-------------------------

Regulatory Compliance

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

Mechanical

Height	175mm (6.9 inches) (4RU)
Width	442mm (17.4 inches) - 482mm (19 inches) including rack ears
Depth	370mm (14.6 inches)
Weight	12kg (Without expansion modules and including one hot swappable PSU)

Available Accessories (Field Upgradable / Replaceable)

Quad 4K60 HDMI input module 2160p (4096x2160) 60Hz 4:4:4	C7-PRO-HDMI-4K4IN
Dual 4K30 HDMI input module 2160p (4096x2160) 30Hz dual, or single 60Hz 4:2:0	C7-PRO-HDMI-4K2IN
Quad 2K60 HDMI input module 1080p (1920x1080) 60Hz 4:4:4	C7-PRO-HDMI-2K4IN
Quad 12GSDI input module 2160p (3840x2160) 60Hz 4:2:2	C7-PRO-12GSDI-4IN
Quad 3GSDI input module 1080p (1920x1080) 60Hz 4:2:2	C7-PRO-3GSDI-4IN
Dual 4K30 HDBT input module 2160p (4096x2160) 30Hz dual, or single 60Hz 4:2:0	C7-PRO-HDBT-4K2IN
Dual 4K30 + 1080p/60Hz streaming input and media playback module	C7-PRO-MEDIA
Audio external input and output module	C7-PRO-AUD-2IN-4OUT
Quad 4K60 HDMI output module 2160p (3840x2160) 60Hz 4:4:4	C7-PRO-HDMI-4K4OUT
Eight 2K60 HDMI output module 1080p (1920x1080) 60Hz 4:4:4	C7-PRO-HDMI-2K8OUT
Quad 12GSDI output module 2160p (3840x2160) 60Hz 4:2:2	C7-PRO-12GSDI-4OUT
Hot swappable, dual-redundant power supply	C7-PRO-700RPS

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
Fan noise	~45dB under normal operation

Power

Dual-redundant hot-swappable PSU	700w load balancing (One supplied - additional PSU optional)
Power consumption	< 600W depending on modules fitted
Input voltage	100 to 240v (+/- 10%) AC auto detecting 50/60Hz 6-3A