Universal Video Scaler PLUS

C2-2855

Key Features

- Up/down/cross conversion
- Digital inputs: SD/HD/3G-SDI,
- Universal DVI*, HDMI (DVI 1.0, HDCP 1.4)
- Analog inputs: YUV/YPbPr, RGB/YPbPr, CV, YC
- Digital outputs: SD/HD/3G-SDI, universal DVI*, HDMI (DVI 1.0, HDCP 1.4)
- Analog outputs: universal DVI* (RGB/YPbPr/YUV), CV, YC
- Analog: PC to 1920x1080, HDTV to 1080p/60
- HDMI and DVI: PC to 1920x1200, HDTV to 1080p/60
- Supports: NTSC, PAL, PAL-M, PAL-N
- Motion compensation and 3:2 pulldown
- Temporal interpolation and diagonal interpolation
- Automatic incoming resolution detection
- Calibrate - automatic picture sizing of PC inputs
- Auto-switching – automatically switch between connected inputs
- 4:4:4 full bandwidth chroma sampling for RGB sources. 4:2:2 for SDI, YC and CV sources. HDMI YUV support for either 4:4:4 or 4:2:2 sampling
- Video signal parameter adjustments
- Integral 4x1 stereo analog audio routing switcher, fully integrated with digital audio
- Stereo audio embedding on capable outputs (universal DVI*, HDMI, SDI)
- RS-232 and IP interface for control software
- Variable image zoom to 10X and shrink to 10%
- Genlock
- Framelock
- PIP, chromakey and lumakey
- Optional single/dual rackmount kit

Overview

The C2-2855 Universal Scaler Plus is first in a new generation of high-performance scalers that provides best-in-class video scaling and format conversion along with revolutionary, intuitive user interface tools. The crystal-clear OLED display intuitively guides users through setup and control using color-modulated, backlit buttons. Alternatively, you can use a graphic user interface† for Windows to set up and control the unit remotely with IP. RS232 is also provided as a direct control interface for 3rd party control systems.

The video performance of the C2-2855 is based on exclusive CORIO®2 technology by tvONE®, which provides quality bi-directional conversion and switching between a wide variety of analog and digital video formats. Living up to its designation as a “Universal Scaler”, the C2-2855 supports SD/HD/3G-SDI, HDMI, DVI, Composite Video, YC, YUV, YPbPr, or RGB, on both inputs and outputs. You can adjust the signal parameters of the incoming video. Select the high resolution RGB/YPbPr output at virtually any PC or HDTV resolution, and NTSC, PAL, PAL-M, and PAL-N standards are all supported. A high sampling rate ensures crisp, clear images, and advanced digital flicker elimination circuitry on CV and YC outputs. Full bandwidth chroma sampling ensures faithfully reproduced, high resolution colors. Motion compensation, diagonal interpolation and a 3:2 Pull-down feature provide for the best possible NTSC image quality, while temporal interpolation refines frame-rate conversion by merging successive frames.

Twelve user-defined presets are readily available for instant, on-the-fly adjustment to diverse customized applications.

The tvONE® calibrate feature automatically sizes and positions computer images to fit exactly on the video display, and the 10X variable zoom can enlarge and position any part of an input to fill the entire video output display. Variable shrink with as much as 90% size reduction allows almost any image to fit on the tiniest screen.

Advanced features - keying allows one input to be keyed over a second input. The keyed image may be faded in and out. Precise keying at the pixel level is possible due to 4:4:4 sampling format for RGB sources. Transitions permit seamless cut, fade or wipe transitions when switching between input sources. Picture-In-Picture (PIP) functionality allows an input to be inset in a window over a second input or vice versa, and the PIP window may be placed anywhere on the screen. Genlock ensures precise synchronization of the incoming signals.

Audio - integral stereo audio switching is provided by an integral 4x1 audio routing switcher. The four impedance-independent unbalanced inputs follow the video input selection. A rear panel terminal block and a 3.5 mm jack-socket provides access.

Embedded audio support allows any audio input to be embedded on all outputs which support embedded audio data (HDMI/DVI-U/SDI).

Auto-switching function turns the C2-2855 into a powerful standalone device. Allowing the user to connect their source and have it automatically displayed on screen without having to press any buttons.

The unit is housed in a desktop case and can be rack-mounted with an optional 19-inch rack mounting kit that holds one or two units.

* universal DVI (DVI-U), is an interface that is fully DVI-I compliant and offers analog (YC, CV, RGB and YPbPr) and HDMI connectivity in addition to DVI-I, with a range of low-cost adaptors.
**DVI-I output supports RGB, YPbPr and HDMI with adaptors, but not YC, CV
†Not compatible with previous generation C2 products

Universal Video Scaler PLUS

C2-2855

Specifications

Video Input	
Television standards	NTSC, PAL, PAL-M, PAL-N, SECAM
Composite video	1x with BNC & 1x with universal DVI *
YC (S-video)	1x with 4-Pin Mini-DIN & 1x with universal DVI *
HDTV	1x with HDMI (DVI 1.0, HDCP 1.4) & 1x with universal DVI *
SD/HD/3G-SDI	1x with BNC
Computer Inputs	
Signal type	1x Analog with PC/HD HD15, 1x universal DVI *
Format	RGBHV, RGBS, RGsB, YPbPr, YUV
Sync	TTL Level, 10K , pos or neg
Termination	75 Ω
R-G-B level range	0.5-2.0 Vp-p
Scan rate detection	Automatic
Analog signals	PC to 1920x1080, HD to 1080p/60
DVI & HDMI signals	PC to 1920x1200, HD to 1080p/60
Max horizontal scan rate	150kHz
Computer compatibility	PC, Mac, Workstations
Video Outputs	
Television standards	NTSC, PAL, PAL-M, PAL-N
Impedance	75 Ω
Composite video	1x with BNC
YC (S-video)	1x with 4-PIN mini-DIN
YUV, YPbPr	1x with universal DVI *
HDTV	1x with HDMI CEC pass-through for HDMI in to out
SD/HD/3G-SDI	1x with BNC
Maximum latency	1-2 frames
Computer outputs	
Signal type	1x universal DVI * and 1 x HDMI
Format	RGBHV, RGBS, RGsB, YPbPr
R-G-B level	0.7 Vp-p
Analog signals	PC to 1920x1080, HD to 1080p/60
DVI and HDMI signals	PC to 1920x1200, HD to 1080p/60
Image processing features	
Size and position	Automatic via calibrate or manual
Image size	User-definable presets
Image freeze	One video frame
Settings memory	Non-volatile
Zoom range	Variable to 10X zoom
Shrink range	Variable to 10%
Image mirroring	Horizontal and/or vertical
Horizontal filtering	Full digital
Conversion technology	Proprietary - CORIO®2
Framerate conversion	Temporal
Color resolution	24-bit (16.8 million colors)
Sampling rate	162MHz
Digital sampling	24-bit, 4:4:4 or 4:2:2 format depending on source
Firmware memory	Flash upgradeable with RS-232 or IP
Video encoder & decoder	8-bit digital
Film mode (NTSC)	3:2 pulldown
Maximum latency	1-2 frames
Video adjustments	CV/YC: contrast, brightness, saturation, hue (NTSC), analog RGB/YPbPr levels
De-interlacing (NTSC-PAL)	Pixel-level motion adaptive, diagonal interpolation
Audio input and output	
Inputs	3x unbalanced with terminals, 1x unbalanced with 3.5mm jack, 1x HDMI, 1x Universal DVI *, 1x SDI
Outputs	Unbalanced with terminals, 1x HDMI, 1x Universal DVI *, 1x SDI
I/O impedance	Impedance-independent
De-embedding support	1 stereo pair at 32 kHz, 44.1 kHz, 48kHz from HDMI, 48kHz SDI
Embedded support	1 stereo pair at 48kHz

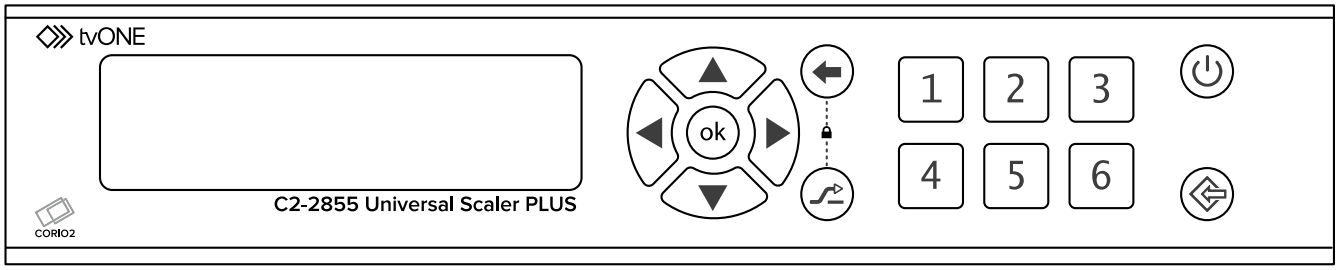
Operational modes	
Key	Chromakey or lumakey
Mix	PC to/from video and still image
PIP	Variable window size and position
SDI jitter	
SMPTE259M-C (SD-SDI)	(270Mbps: 525/625Line) jitter < 0. 1 UI
SMPTE292M (HD-SDI)	(1.485/1.4835Gbps: 720p, 1035i, 1080i, 1080p) jitter < 0.2 UI
SMPTE424M (3G-SDI)	(2.97/2.967Gbps: 1080p50/60) jitter < 0.3 UI
SDI input cable equalization	
Under optimal conditions:	
SMPTE259M-C (SD-SDI)	300m
SMPTE292M (HD-SDI)	166m
SMPTE424M (3G-SDI)	100m
I/O vertical rates - SMPTE259M-C (SD-SDI)	
525i (720x487)	59.94Hz
625i (720x576)	50Hz
I/O vertical rates - SMPTE292M (HD-SDI)	
720p (1280x720)	29.97, 30, 50, 59.94, 60Hz
1080i (1920x1080)	50, 59.94, 60Hz
1080p (1920x1080)	23.98, 24, 25, 29.97, 30Hz
Input vertical rates - SMPTE425M-AB (3G-SDI)	
1080p (1920x1080)	50, 59.94, 60Hz
Output vertical rates - SMPTE425M-A (3G-SDI)	
1080p (1920x1080)	50, 59.94, 60Hz
Control methods	
Local	with front panel buttons and OSD
RS-232 interface	with D9 female connector
IP interface	RJ45 connector
Control software included	
Warranty	
Limited warranty	5 years parts and labor
Regulatory compliance	
Main units	FCC Class B, CE, RoHS, UL, cUL, KCC
Power supplies	UL, cUL, CE, PSE, GS, RoHS
Mechanical	
Size (H-W-D)	42 x 218 x 189mm (1.63" x 8.6" x 7.4")
Weight (net)	1.26 Kg (2.78 lbs) excluding PSU
Environmental	
Operating temperature	0° to +40°C (+32° to +104°F) ambient
Operating humidity	10% to 85%, non-condensing
Storage temperature	-10° to +70°C (+14° to +158°F)
Storage humidity	10% to 85%, non-condensing
Power requirement	
External power supply	12V DC @ 1.5A
Accessories included	
1x operations manual on USB stick	
1x PC control software (Microsoft Vista SP2 and above)	
1x Quick start guide	
1x Universal power supply ('brick' type)	
1x Regional power cable	
Product item number	
C2-2855	
Optional accessories	
RM-220	Single/dual rackmount kit

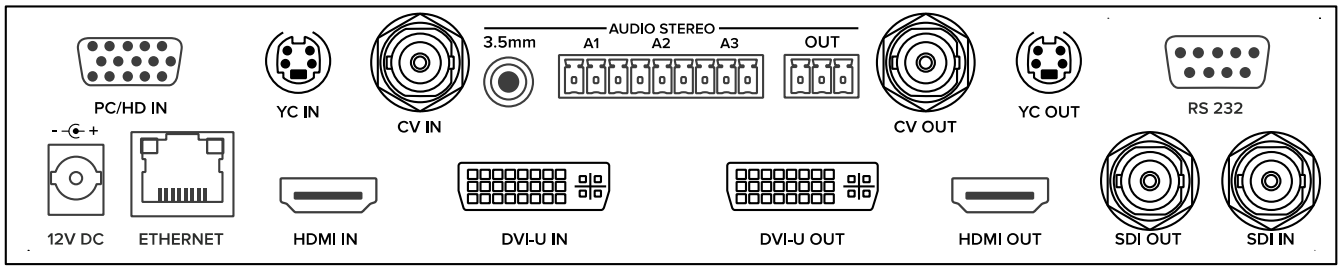
Specifications subject to change

Universal Video Scaler PLUS

C2-2855

Panel drawings





Video I/O interfaces

Connector	C2-2855	C2-2755	C2-2655
HDMI in	✓	✓	✓
Universal DVI in	✓	✓	✓
YC in	✓	✓	✓
CV in	✓	✓	✓
SDI in	✓	✓	
PC/HD in	✓	✓	✓
HDMI out	✓	✓	✓
Universal DVI out	✓	DVI-I** only	✓
YC out	✓		✓
CV out	✓		✓
SDI out	✓		✓

Universal Video Scaler PLUS

C2-2855

Video resolutions

ALL models support ALL the resolutions below for input.
For output, different models support different resolutions, as shown below.

Resolution	C2-2855	C2-2755	C2-2655	Resolution	C2-2855	C2-2755	C2-2655	Resolution	C2-2855	C2-2755	C2-2655
NTSC 525i	✓		✓	1280x720 23.98Hz	✓	✓	✓	1360x768 60Hz	✓	✓	
PAL 625i	✓		✓	1280x720 24Hz	✓	✓	✓	1365x1024 75Hz	✓	✓	
640x480 60Hz	✓	✓	✓	1280x720 25Hz	✓	✓	✓	1400x900 60Hz	✓	✓	
640x480 67Hz	✓		✓	1280x720 29.97Hz	✓	✓	✓	1400x1050 60Hz RB#	✓	✓	
640x480 72Hz	✓		✓	1280x720 30Hz	✓	✓	✓	1400x1050 60Hz	✓	✓	
640x480 75Hz	✓		✓	1280x720 50Hz	✓	✓	✓	1400x1050 75Hz	✓	✓	
640x480 85Hz	✓		✓	1280x720 59.94Hz	✓	✓	✓	1600x1200 60Hz	✓	✓	
640x480 117Hz	✓		✓	1280x720 60Hz	✓	✓	✓	1680x1050 60Hz	✓	✓	
640x480 138Hz	✓		✓	1280x768 60Hz RB#	✓	✓		1920x1080i 47.96Hz	✓	✓	✓
720x480 59.94Hz	✓		✓	1280x768 60Hz	✓	✓		1920x1080i 48Hz	✓	✓	✓
720x576 50Hz	✓		✓	1280x768 75Hz	✓	✓		1920x1080i 50Hz	✓	✓	✓
800x600 56Hz	✓		✓	1280x768 85Hz	✓	✓		1920x1080i 59.94Hz	✓	✓	✓
800x600 60Hz	✓	✓	✓	1280x800 60Hz RB#	✓	✓		1920x1080i 60Hz	✓	✓	✓
800x600 72Hz	✓	✓	✓	1280x800 60Hz	✓	✓		1920x1080 23.98Hz	✓	✓	✓
800x600 75Hz	✓	✓	✓	1280x800 75Hz	✓	✓		1920x1080 24Hz	✓	✓	✓
800x600 85Hz	✓	✓	✓	1280x800 85Hz	✓	✓		1920x1080 25Hz	✓	✓	✓
800x600 95Hz	✓	✓	✓	1280x960 60Hz	✓	✓		1920x1080 29.97Hz	✓	✓	✓
800x600 112Hz	✓	✓	✓	1280x960 72Hz	✓	✓		1920x1080 30Hz	✓	✓	✓
1024x768 60Hz	✓	✓	✓	1280x960 85Hz	✓	✓		1920x1080 50Hz	✓	✓	✓
1024x768 70Hz	✓	✓	✓	1280x1024 60Hz	✓	✓		1920x1080 59.94Hz	✓	✓	✓
1024x768 75Hz	✓	✓	✓	1280x1024 70Hz	✓	✓		1920x1080 60Hz	✓	✓	✓
1024x768 85Hz	✓	✓	✓	1280x1024 75Hz	✓	✓		1920x1200 50Hz RB#	✓	✓	
1024x768 89Hz	✓	✓	✓	1280x1024 85Hz	✓	✓		1920x1200 60Hz RB#	✓	✓	

RB = reduced blanking