C2-8000 Series

Universal Input Seamless Switcher

Key Features C2-8000 Series

- Up ▲, Down ▼, Cross ✖ Conversion
- High quality seamless switching
- DVI-U inputs (HDMI/CV/YC/RGB/YPbPr): up to 12
- SDI inputs: up to 2 SD/HD/3G-SDI + re-clocked out
- DVI-U outputs: 2 (HDMI/CV/YC/RGB/YPbPr)
- SDI outputs: up to 2 (SD/HD/3G)
- Genlock inputs: 1x Tri/Bi with loop-through
- Analog: PC to 2048x2048, HDTV to 1080p/60
- DVI: PC to 1920x1200, HDTV to 1080p/60
- Supports: NTSC, PAL, PAL-M, PAL-N, SECAM
- HDMI-compatible input & output with HDCP
- Motion Compensation & 3:2 Pull-down
- Diagonal Interpolation
- Noise Reduction - PAL / NTSC / 1080i inputs
- Automatic Incoming Resolution Detection
- AutoSet - Auto picture sizing of PC inputs
- 4:4:4 Full bandwidth sampling
- Variable Zoom to 10X & Shrink to 10%
- Chroma and Luma keying
- Fade, Wipe, Push, Cut transitions
- Video signal parameter adjustments
- Audio de-embed / embed for SDI and HDMI
- Closed-caption de-embed / embed for SDI
- Closed-caption de-embed CV
- Integral Audio Routing
- User-defined Logo insertion
- Still image store
- Borders with variable size and color
- IP Interface
- RS-232/422/485 interface
- Optional Audio Module with AES break-out and adjustable delay
- Optional Tally Module (C2-8110 & C2-8120)
- Optional Redundant Power Supplies
- Optional Rear Rack mount supports

C2-8000 Universal Input Seamless Switcher is based on TV One's exclusive CORIO®2 technology and provides high quality video switching with two-channel bi-directional conversion between a variety of analog and digital video formats. The standard system features multiple DVI-U input modules (allowing any of HDMI, DVI, Composite Video, YC, YUV, YPbPr or RGB) that can be scaled and switched between, along with two independent processing channels. The system can also have 3G-SDI input/output modules fitted, as well as audio I/O.

The high resolution DVI-U (HDMI, DVI, CV, YC, YUV, YPbPr or RGB) outputs are selectable as virtually any PC or HDTV resolution (or SDI with the 3G-SDI I/O module). Our exclusive AutoSet feature takes the hassle out of setup by automatically sizing and positioning the computer image to fit exactly on the video screen. NTSC, PAL, PAL-M, PAL-N, SECAM standards are supported.

In Switcher mode, transitions include Cross-fade, Push, Wipe and Cut. Independent mode gives two channels of video conversion. Dual PIP mode allows two windows to appear together on the same output. All modes allow Background sources to be used along with Keying and Logo insertion.

Signal parameters of the incoming video may be adjusted. All settings are stored in non-volatile memory and are retained even when power is switched off. User defined presets are also available to customize settings for various applications.

All the functions can be controlled via the front panel Push Buttons, an RS-232/422/485 or IP connection. Windows Control Panel software is provided and most third party control systems interface directly with the entire C2 range of products. A front panel LCD makes setup easy. The unit is housed in a standard 1U rack mount case and features an optional redundant internal PSU and power inlet.

Variable Zoom to 10X enlarges any part of the computer screen to fill the entire video screen and position controls allow movement to any area desired. Variable Shrink to as little as 10% allows fitting the image onto most displays. The advanced Digital Flicker Elimination circuitry and high sampling rate ensures crisp, clear images, while full bandwidth chroma sampling ensures faithfully reproduced, high resolution colors. Pixel Level Motion Adaptive Diagonal Interpolation and Noise Reduction ensures high quality de-interlacing of PAL, NTSC and 1080i signals. 3:2 Pull-down ensures proper 24 fps film extraction from NTSC and 1080i sources.

Advanced Features - The Key Mode allows one input to be keyed over another. The keyed image may be faded in and out. Due to the 4:4:4 RGB/DVI sampling format, precise keying at the pixel level can be achieved. The Mix Mode permits Seamless Cut, Fade or Wipe transitions between input sources whilst a background is in use. The Genlock reference input is SD and HD compatible and ensures precise synchronization of the incoming signals by providing a wide Subcarrier lock range with Subcarrier phase adjust.

Integral Audio switching is provided to route audio from the (HDMI-compatible) DVI input or SDI input to the DVI and SDI outputs. An optional Audio Module can provide AES I/O abilities and audio delay and can link to our A2-7300 range of audio break-out units.

C2-8000 Series Specifications

Video Inputs		
Television Standards	NTSC, PAL, PAL-M/N, SECAM	
Composite Video	Up to 12x via DVI-U	
YC (S-Video)	Up to 12x via DVI-U	
YUV/YPbPr	Up to 12x via DVI-U	
SD/HD/3G-SDI	Up to 2x via BNC + re-clocked out	
Computer Inputs		
Digital DVI	Upto 12x via DVI-U (HDMI & HDCP compatible)	
Analog	Upto 12x via DVI-U	
Analog Format	RGBHV, RGBS, RGsB, YPbPr	
Analog Sync	TTL Level, 10K⍀, Pos or Neg	
RGB Level Range	0.5-2.0 Vp-p	
Scan Rate Detection	Automatic	
Analog Signals	PC to 2048x2048, HD to 1080p60	
DVI Signals	PC to 1920x1200, HD to 1080p60	
Max Horiz Scan Rate	150kHz	
Computer Compatibility	PC, Macintosh, Workstations	
Video Outputs		
Television Standards	NTSC, PAL, PAL-M/N, SECAM	
Composite Video	2x via DVI-U	
YC (S-Video)	2x via DVI-U	
YUV/YPbPr	2x via DVI-U	
SD/HD/3G-SDI	Up to 2x via BNC	
Computer Outputs		
DVI Signals	2x via DVI-U (HDMI & HDCP compatible)	
Analog	2x via DVI-U	
Analog format	RGBHV, RGBS, RGsB, YPbPr	
R-G-B Level	0.7 Vp-p	
DVI Signals	PC to 1920x1200, HD to 1080p60	
Analog Signals	PC to 2048x2048, HD to 1080p60	
Vertical Refresh Rate	Any to 250Hz	
Size and Position	Automatic via AutoSet or Manual	
Image Size	User-Definable	
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	
Conversion Technology	Proprietary – CORIO®2	
Frame-rate Conversion	Temporal	
Color	RGB 24 -bit 4:4:4, YPbPr 20-bit 4:2:2	
Max. Sampling Rate	162MHz	
Firmware Memory	Flash, Upgradeable via RS-232	
De-Interlacing	Pixel-level Motion Adaptive,	
(NTSC, PAL, 1080i)	Diagonal Interpolation, Noise Reduction.	
Video Comb Filter	Adaptive	
Film (NTSC, 1080i)	3:2 Pull-down	
Video Adjustments	CV/YC: Contrast, Brightness, Saturation, Hue	
	(NTSC). Analog RGB/YPbPr levels	
Audio support		
De-embed / embed	SDI & HDMI-I/O via DVI	
Delay	Via optional module	
Closed Captions		
De-embed / embed	SDI (608 & 608 in 708)	
Genlock Adjustments		
Subcarrier Lock Range	+/- 200Hz for NTSC Operation	
	(+/- 250Hz for PAL Operation)	
Subcarrier Phase	+/- 180⍀Adjustment	

3G/HD/SD-SDI		
SMPTE259M-C	270Mbps < 0.1UI jitter	
(SD-SDI)	525/625Line	
SMPTE292M	1.485/1.4835Gbps < 0.2 UI jitter	
(HD-SDI)	720p, 1035i, 1080i, 1080p	
SMPTE424M	2.97/2.967Gbps < 0.3 UI jitter	
(3G-SDI)	1080p 60/59.94	
HD Resolutions supported (DVI, YPbPr, SDI)		
	720p (1280x720) 23.98, 24, 25, 29.97, 30, 50, 59.94, 60Hz	
	1035i (1920x1035) 59.94, 60Hz	
	1080i (1920x1080) 50, 59.94, 60Hz	
	1080p (1920x1080) 23.98, 24, 25, 29.97, 30Hz	
	1080p (1920x1080) 50, 59.94, 60Hz	
Control Methods		
Local	via Front Panel Buttons & LCD	
RS-232/422/485	via D9 Female Connector	
IP Interface	RJ45 Connector	
Warranty		
Limited Warranty	5 Years Parts and Labour	
Regulatory Compliance		
Main unit	FCC, CE, RoHS, (UL PSU)	
Mechanical		
Size (H x W x D)	1.73" x 17.0" x 13.1" (44 x 431 x 334mm)	
Weight (Net)	Approx. 5Kg (with redundant PSU option)	
Environmental		
Operating Temperature	0° to +50ºC (+32° to +122°F)	
Operating Humidity	10% to 85%, Non-condensing	
Storage Temperature	-10° to +70°C (+14° to +158°F)	
Storage Humidity	10% to 85%, Non-condensing	
MTBF	Approx. 35,000 hours	
Power Requirement		
External Power Supply	110v to 240v auto-detecting	
Redundancy	Optional redundant internal PSU	
Accessories Included		
1x Operations Manual		
1x Front Rack Ears		
1x Power cable	US, UK, Euro or AU	
Product Item Number		
C2-8110	6x DVI-U In, 2x DVI-U Out	
C2-8120	8x DVI-U In, 2x DVI-U Out	
C2-8130	12x DVI-U In, 2x DVI-U Out	
C2-8160	10x DVI-U In, 2x DVI-U Out, + Audio Interface	
C2-8210	8x DVI-U, 2x 3G/HD/SD-SDI In 2x DVI-U Out,	
	2x 3G/HD/SD-SDI Out	
C2-8260	6x DVI-U, 2x 3G/HD/SD-SDI In, + Audio Interface	
	2x DVI-U Out, 3G/HD/SD-SDI Out	
Optional Accessories		
CM-AUD-8IN-8OUT	Audio delay module (2)	
CM-1RPS	Redundant PSU (2)	
RM-120	Rack Support Rails(24")	
RM-130	Rack Support Rails(32")	
Control Software	Downloadable from Website	
Notes		
(1) Each of these uses a module slot and will reduce inputs.		
(2) These are Factory or TV One Tech Center Fitted only.		

DVI-U - The Universal I/O

The DVI-U universal interface utilizes a single DVI-I connector to provide an incredible degree of flexibility. The DVI input module of the C2-8000 series provides two single link full bandwidth DVI-U inputs, which support analog (CV/YC/YUV/RGBHV) and digital inputs but not simultaneously. A series of adaptors for HDMI, RGBHV, RGBS, RGsB, YUV, YPbPr, Y/C and CV enable connection to the C2-8000. DVI, RGB, YUV & CV are auto detected, but YC must be user selected. Audio for HDMI inputs is de-embedded and passed to the Video Processor for routing.

DVI-U
The Universal I/O
compatible with
HDMI, DVI-D, DVI-A,
RGBHV, RGBS, RGsB,
YUV, YPbPr, CV, Y/C

ZDH2050 Composite Video
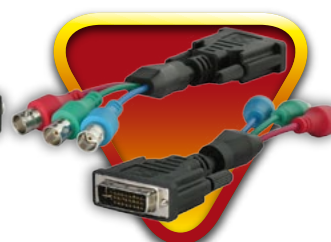adapter DVI Male to BNC Female

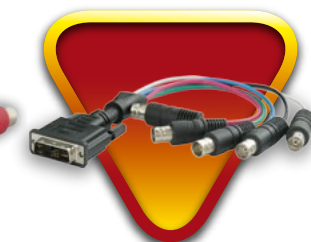CMD1939 HDMI adapter
DVI Male to HDMI Female

ZDH2040 Analog PC adapter
DVI Male to HD-15 Female

ZDB2042 YPbPr/YUV adapter
DVI Male to 3RCA Female

ZDB2044 YPbPr/YUV adapter
cable DVI male to 3-BNC Female
- 1.5' (0.5m)

ZDB2038 Analog RGBHV adapter
cable DVI-I Male to 5-BNC Female
- 1.5' (0.5m)

ZDB2048 YC (S-Video) adapter
DVI Male to 2-BNC Female

ZDS2046 YC (S-Video) adapter
DVI Male to 4-Pin Mini-Din Female

Control Interface | Input | Output | Input/Output

C2-8110
C2-8120
C2-8130
C2-8160
C2-8210
C2-8260

Large Venue Presentation Switchers