

### C2-7260 Dual Channel 17-Input Video Processor

moves well beyond video processing and switching, providing HD-SDI Up, Down and Cross Conversion and many additional features. Two independent video processing and scaling engines and two video mixers provide maximum flexibility in handling SD and HD-SDI, Composite, YC (S-Video), YUV Component, YPbPr HD Component, DVI and RGB. The unit's 8 HD-SDI inputs means it is at home in broadcast as well as presentation environments, the C2-7260 is multiple products in one.

Three operating modes simplify control:

**Switcher Mode** - Equally powerful Program and Preview channels allow any function (Next Image, PIP, Keying, Logo, etc.) to be set up and previewed, totally independent of the Program output. Transition from Preview to Program is by Cut, Dissolve or Special Effect.

**Independent Mode** - Provides all the power of two completely independent scalers in one box, each with a full range of features, including PIP, Keying, etc. Each output can deliver different formats and resolutions simultaneously. For example, a presentation being fed to a high resolution display on Output 1 via DVI can be fed to a VCR for recording on Output 2 via Composite Video.

**Dual PIP Mode** - Any video input can be squeezed and placed into either of two windows of any size and positioned anywhere on the screen, even overlapping, with user defined layer priority control. The windows can be placed over any other video input or a static image from memory as the background. The window's image can then be seamlessly switched, faded or zoomed. Keying can be independently applied to each window.

**Powerful Features** - 4:4:4 sampling provides full bandwidth color which allows precise keying, including Transparent (Soft) Keys. The 11 video inputs can accommodate signals (either analog or digital, video or computer) in a variety of formats and resolutions. It handles all known HDTV formats plus any analog RGB resolution up to 2048x2048 - and new resolutions can be easily added. Each of the two independent outputs delivers a wide range of digital and analog video signals.

In addition to SD and HD television formats, the C2-7200 output signal format flexibility assures that the Native Resolution of virtually any Digital Display can be matched. Using the software based resolution calculator, new or unusual resolutions can be instantly added to the menu. Signal parameter adjustments can be made for each video input and are stored in individual non-volatile memories. Integral Test Signals are user defined. A fast Logo memory is provided, so the unit can easily be used as a Logo Inserter. Advanced motion compensation (NTSC and PAL) is employed to smooth out fast moving images and its automatic 3:2 Pull-down detection efficiently de-interlaces video from 24 fps film (NTSC).

**Setup and Control** is extremely flexible. Local control is provided by the 48-button CORIO EXP Front Panel designed expressly for handling live events. These



C2-7260



C2-7210



C2-7200

### Multiple Products in One

- 11 or 17-Input Multi-format Seamless Switcher
- 2x Analog ◀-▶ SD/HD-SDI
- 2x DVI ◀-▶ SD/HD-SDI
- 2x Universal Scalers
- 2x Single Window PIP
- 2x Standards Converters
- 2x Frame Sync/TBC's
- 2x Aspect Ratio Converters
- 2x SD-SDI ◀-▶ HD-SDI
- 2x HDTV ◀-▶ HDTV
- 2x Logo Inserters
- 1x Dual Window PIP
- 2x Up Converters
- 2x Down Converters
- 2x Chromakeyers

buttons plus the multi-way navigation control and integrated LCD bring all the control needed for quick and easy access right to the front panel. Remote control via RS-232 or Ethernet (IP) is standard. Macros are provided to facilitate complex command sequences. The Windows Control Panel affords complete control of the unit. The CC-300 CORIO console option takes control to the next level by providing the C2-7000 series with the operational feel of a traditional Video Production Switcher. Two rows of 14 buttons, a fader bar, joystick and an integrated LCD touch screen provides access to the powerful C2-7000 series functions with a minimum of keystrokes. Event control directly from the CC-300 is available by the integral interface to Calypso control systems. Virtually any third party device is controllable.

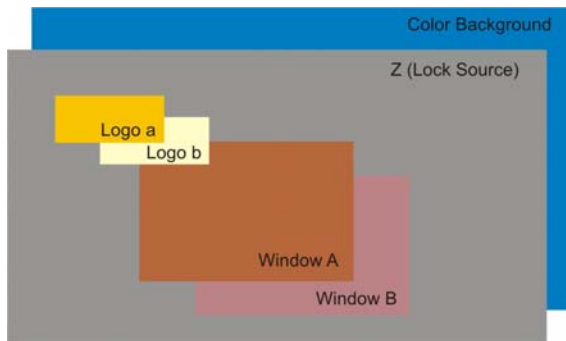
**C2-7210** provides the same features and functions of the C2-7260, except it has 2 HD-SDI Inputs instead of 8.

**C2-7200** provides the same features and functions of the C2-7210 with a different front panel. This version has 10 programmable buttons and a shift key with removable key caps for flexibly labeling. It is intended for applications where custom or restricted access to functions is desirable. The programmability of the buttons provides the ability to setup the unit to allow only specific functions to be accessed directly from the front panel buttons. This is particularly important in situations where public access to the unit is available.

**Edge Blending** is a standard feature of the C2-7000 series. Because of the ability to 'feather' any or all of the edges, multiple images can be aligned vertically, horizontally, or both to create unusual displays. Since it is dual channel, only one unit is required to blend two edges. Using multiple units, there is no limit to the number of blended images. Edge Blending is not limited to high resolution RGB computer images, but can be applied to any input. Gamma correction is employed to compensate for many of the problems faced when blending between projectors. Special preparation of the video in advance is not necessary, since all processing is done within the unit.

**Image Layer Processing** within the C2-7000 series utilizes a multiple layer video display system whose stacking order can be altered as desired by the user. Using the dual PIP as an example, the layers consist of:

- 1 or 2 image windows (A & B) that can be resized and positioned as desired
- a lock source (the Z layer) which can be an active video or still image background
- 1 or 2 logo images (a & b)
- a color background



Should the user wish, the layers can be re-ordered (example: B in front of A) and the individual layers can also be made opaque, semi-opaque or transparent. Windows A & B can be positioned anywhere on the screen and used either as key sources or as key background images. Logos a & b can also be positioned anywhere on the raster and have their appearance set to opaque normal keying or to semi-transparent for channel branding. When keying, the Z Layer may be moved from the background to the foreground

### Other products in the C2-7000 family

**C2-7110** provides all the features and functions of the C2-7210, except without SDI/HD-SDI Inputs/Outputs.

**C2-7100** provides all the features and functions of the C2-7110 except without the CORIO EXP front panel.

**C2-7310** provides all the features and functions of the C2-7210, plus 48 channels of integral stereo processing. This allows for simultaneous extraction and embedding of 8 stereo channels into each of the unit's 2 SD/HD-SDI inputs and 2 outputs. Also, 16 stereo inputs and 16 outputs can be assigned to any of the other Composite, Component, S-Video, RGB or DVI-I inputs and outputs.

### Key Features of the C2-7260/7210/7200

- Analog to HD-SDI Up, Down, Cross Conversion
- SD-SDI to HD-SDI Cross Conversion
- Dual Independent Scaling Engines
- Delay free HD-SDI Audio Pass-Thru
- 4:4:4 Sampling for full bandwidth color
- 17 (or 11) Multi-format Inputs
  - 3x Composite Video, 3x YC (S-Video), 8x SD/HD-SDI (2x on C2-7210 & C2-7200), 3x DVI (also handles RGB, YUV & YPbPr)
- 2 Independent Output Channels, each with: SD/HD-SDI, Composite Video, YC (S-Video), DVI-I (also handles RGB, YUV & YPbPr)
- Multiple Conversion & Scaling products in one
- Multi-format Inputs – Digital and Analog
- Analog RGB to 2048x2048 and HDTV to 1080p
- Genlock any Video Input to any other
- Seamless Switching with Cuts, Fades or Effects
- Unrestricted Dual PIP - Any Input over any other
- Multiple Layering and Windowing Capability
- Flexible Key Layering - Background Lock Source can be moved to the Foreground
- RS-232 & IP Interface Remote Control
- External Control by Windows Control Panel
- External Control by Third Party Control Systems
- External Hardware Control by Optional CC-300
- CORIO2® Technology Conversion Engines
- Zoom up to 1000% with full Positioning
- Image Shrink to 10% with full Positioning

### CORIO2 Technology



This symbol on a product indicates that it is powered by CORIO2™ technology, the most flexible video processing engine now available.

Unlike most manufacturers, who use third party chipsets to provide video conversion, TV One has developed its own proprietary technology known as CORIO2™. This frees TV One products from the constraints imposed by third parties and results in an unsurpassed degree of flexibility. Products based on third party chipsets have a feature set frozen at the introduction of the product. Since the CORIO2™ video processing engine is entirely firmware based, it can be upgraded at any time by downloading the latest firmware version from the support website and flash upgrading the unit in the field. This enables new features to be added to units many years after the initial purchase. This "obsolescence insurance" means that a CORIO2™ based product can always be upgraded to the latest version of that model.

### CC-300



## Specifications

### Video Inputs

Composite Video	3x via BNC Connector
YC (S-Video)	3x via 4-PIN Mini-DIN Connector
DVI-I (Note 1)	3x via DVI-I Connector
SDI (SD or HD-SDI)	8x via BNC (C2-7260 only) (2x on C2-7210 and C2-7200)

### Genlock Input

Reference Signal	Any of the Video Inputs
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### Independent Output 1

Composite Video	1x via BNC Connector
YC (S-Video)	1x via 4-PIN Mini-DIN Connector
DVI-I (Note 1)	1x via DVI-I Connector
SDI (SD or HD-SDI)	1x via BNC

### Independent Output 2

Composite Video	1x via BNC Connector
YC (S-Video)	1x via 4-PIN Mini-DIN Connector
DVI-I (Note 1)	1x via DVI-I Connector
SDI (SD or HD-SDI)	1x via BNC

### Input/Output Range

Computer Resolutions	Analog: Up to 2048x2048 DVI: Up to 1280x1024
Max Vert Refresh Rate	250Hz
Max Horiz Frequency	150KHz
HDTV Resolutions	All thru 1080p
Interface Support	Progressive and Interlaced
Television Standards	NTSC 3.58, 4.43, PAL-B,G,I ,D, H, PAL-M, PAL-N & SECAM (In Only) SD-SDI or HD-SDI

### SDI

### Input RGB Sync

Type	RGBHV, RGBS, RGsB
Level / Impedance	TTL, 10KΩ
Polarity	Positive or Negative
Maximum Level	5Vp-p

### Output RGB Sync

Type	RGBHV, RGBS, RGsB
Level / Impedance	5Vp-p, 220Ω
Polarity	Positive or Negative

### Audio Switching (Optional A2-2000) Note 2

Stereo Inputs	10x Balanced and Unbalanced
Program Output	1x Balanced and Unbalanced
Preview Output	1x Balanced and Unbalanced
Connectors per I/O	2x RCA for Unbalanced

### Control Methods

Local Front Panel	10x2 Programmable Buttons +LED, Rotary Selector, and LCD
RS-232 Interface	DB-9 Male Connector
IP Interface	RJ45 Connector

### Mechanical

Desktop Case (HWD)	1.75"x17"x7.9" (44x420x200mm)
With Rack Ears (HWD)	1.75"x19"x7.9" (44x482x200mm)
Weight (Net)	8.4 lbs (3.8 kg)

### Environmental

Operating Temperature	+40° to +113° F (4° to +45° C)
Operating Humidity	10% to 85%, Non-condensing
Storage Temperature	32° to +140° F (0° to +60° C)
Storage Humidity	10% to 85%, Non-condensing

### Regulatory Approvals

Video Scaler Unit	FCC, CE, RoHS
Power Supplies	UL, CE, CSA, RoHS

### Warranty

Limited Warranty	2 Years Parts and Labor
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### General

Image Size & Position	AutoSet or Manual
Image Zoom Range	Continuous to 1000%
Image Shrink Range	Continuous to 10%
Image Mirroring	Horizontal and/or Vertical
Image Freeze	Full Frame
Video Sampling Rate	108MHz
Resolution Memory	Approximately 1,000 Definable
Firmware Memory	Flash, Upgradeable via RS-232
Flicker Filter	4-Level Vertical
Picture-in-Picture	2 Windows + Background from any 3 Video Inputs
Number PIP Windows	2 in Dual PIP Mode 1 in Switcher & Ind. Modes
Video I/O Impedance	75Ω
Video Decoder	9-bit Digital
Comb Filter Decoding	Adaptive
De-Interlacing (PAL-NTSC)	Pixel-level Motion Adaptive
Film Mode (NTSC)	3:2 Pull Down Detection
Video Encoder	10-bit Digital
Digital Sampling	24-bit, 8-bits per R, G and B
Colors	16.7 Million
Video Scaling Engine	Proprietary CORIO2®
Internal Format	4:4:4 YUV
Internal Test Patterns	User Defined
LCD Panel	24x2 Character
Logo Inserter	Flash Programmable
Proc Amp Adjustments	Brightness, Contrast, Saturation, & Hue for CV & SV Inputs, plus Video Level for RGB Input
Proc Amp Memory	Settings for each Video Input

### SDI Jitter

SMPT259M-C	(270Mbps: 525/625 Line) Jitter 0.070 +/-0.01 UI
SMPT292M	(1.485/1.4835Gbps: 720p, 1035i, 1080i, 1080p) Jitter 0.176 +/-0.02 UI

### Power Requirement

Internal Power Supply	100-240VAC, 47-63Hz, 50W
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### Accessories Included

1x C-Video I/O Cable	6' (2m) BNC to BNC
1x S-Video I/O Cable	6' (2m) 4-Pin S-V to 4-Pin S-V
1x DVI I/O Cable	6' (2m) DVI-I to DVI-I
5x RGBHV I/O Adapters	DVI to HD-15 Adapters
1x AC Power Cord	6' (2m) US, UK or Euro Type
1x RS-232 Cable	6' (2m) D9F to DB9F
1 DVI-A to 5 BNC	6' (2m) DVI-A to 5 BNC
1x Operations Manual	
1x Rackmount Kit	2 Ears and 4 Screws
1x Control Software	Downloadable from website

### Product Item Number

C2-7260	Version with 8 HD-SDI Inputs
C2-7210	Version with 2 HD-SDI Inputs
C2-7200	Programmable Front Panel Version

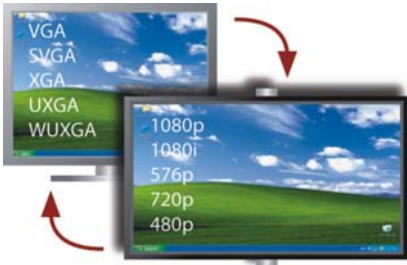
### Optional Accessories

CC-300	CORIOconsole
A2-2000	Audio Switcher

### Notes

- (1) DVI-I Input/Output connectors also accommodate RGBHV, RGBS, RGsB, YUV & YPbPr signal formats.
- (2) A2-2000 is controlled from the C2-7200 and provides Audio Follow Video or Audio Breakaway.

## Sample Capabilities



Dual Channel Universal Signal Conversion – Up, Down, Cross



Dual Channel Chromakey with simultaneous PIP Insertion



Multi-Format, Dual PIP over an Active Video Background

## Sample Windows Control Panel Screens



Switcher Dual PIP Menu



Windows Setup Menu



Resolution Editor Menu

## Panel Drawings

