

CORIOmatrix

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CORIOmatrix

The C3-340 CORIO[®]matrix Scaling Routing Switcher from TV One is an Audio/Video matrix with up to 64 input/output 3G-SDI/DVI-U connection combinations.

C3-340 CORIO[®]matrix is based on TV One's exclusive CORIO[®]2 technology and provides high quality modular video matrix switching using CORIO[®]softswitch, which provides an industry first firmware based video routing, switching and video conversion platform. 16 AV universal module slots are available and the CORIO[®]matrix automatically recognizes the modules inserted as an input or output module. There is no dedicated input or output slots when using 2-Channel DVI-U or 3G-SDI modules. This flexibility allows end user configurations to be based on their own needs instead of the router forcing a certain setup and limited configuration. Additional DVI-U or 3G-SDI modules can be added later in open slots without having to re-set the router. All AV modules are hot swappable and recognized for immediate auto configuration.

The CORIO[®]matrix also provides Up, Down and Cross conversion between a variety of analog and digital video formats thru 3G-SDI. The modules selected determine what format will be accommodated and the matrix size. 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 serial connection via RS-232/422/485, USB or IP. Windows software is provided. A front panel LCD option makes direct setup easy. Third party controllers permit a wide choice of control options. The unit is housed in a standard 4RU rackmount case and features an optional redundant hot swappable internal PSU and power inlet.

Advanced Features

The CORIO[®]matrix includes advanced Digital Flicker Elimination circuitry and high 4:4:4 full bandwidth 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.



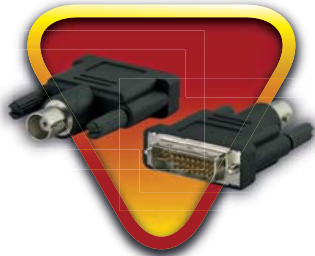
Key features of the C3-340

- Seamless Cross Format Matrix Switching
- Available with Up-Down-Cross Conversion
- DVI-U Inputs/Outputs: (HDMI/CV/YC/RGB/YPbPr)
- SDI Inputs/Outputs: (SD/HD/3G-SDI)
- High Resolution Inputs/Outputs:
Analog: PC to 2048x2048, HDTV to 1080p/60
DVI: PC to 1920x1200, HDTV to 1080p/60 w/EDID
SDI: SD, 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 for PAL, NTSC and 1080i inputs
- Automatic Incoming Resolution Detection
- AutoSet - Automatic Image Sizing of PC Inputs
- 4:4:4 Full Bandwidth Sampling
- Video Signal Parameter Adjustments
- Optional Audio de-embed/embed for SDI and DVI
- Closed-caption de-embed/embed for CV / SDI
- 3D Compatible
- Integral Audio Routing
- Interfaces: RS-232/422/485, USB, IP
- 4RU Frame Size
- Optional Audio Module with AES Break-out and Adjustable Delay
- Optional Tally Module
- Optional Redundant Hot Swappable Power Supplies
- Optional Rear Rackmount Supports
- Optional DVI-U Adapters (DVI to other connectors)



DVI-U - The Universal I/O

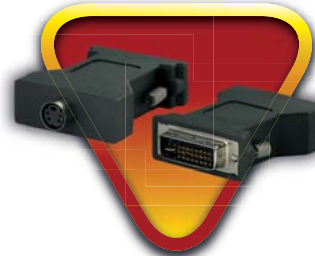
The DVI-U universal interface utilizes a single DVI-I connector to provide the following signal formats: HDMI, DVI-I, plus analog YUV, YPbPr, RGBHV, RBBS, RGsB, Y/C and Composite Video. A variety of adapters are available to convert from DVI-I to other connectors.



ZDH2050 Composite Video adapter DVI Male to BNC Female



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



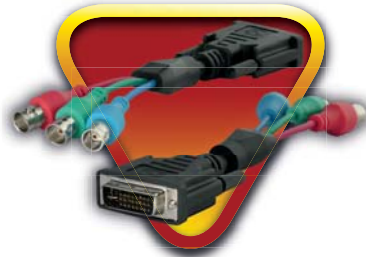
ZDS2046 YC (S-Video) adapter DVI Male to 4-Pin Mini-Din Female



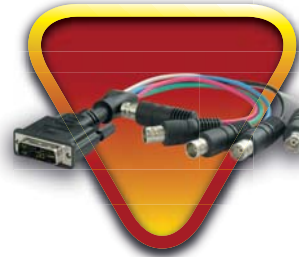
CMD1939 HDMI adapter DVI Male to HDMI Female



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)



ZDH2040 Analog PC adapter DVI Male to HD-15 Female

Modules

The CORIO[®]matrix modular system is designed to accommodate up to 16 modules for video input & output or audio routing. These modules are either DVI-U, 3G-SDI or HD-SDI for video connection, or an AES/analog break-out and adjustable delay audio module for connecting to an A2-7300 series unit.

- There are three DVI-U modules, an input module (2 inputs) and two output modules (2 outputs each; scaling & non-scaling).
- Four 3G-SDI modules, one input module (2 inputs), two output modules (2 outputs each; scaling and non-scaling) and an input/output module (1 Input and 1 scaled output). The 3G-SDI Module allows any SDI, HD-SDI or 3G-SDI format to be used. The 3G-SDI scaling output module allows any input to be converted to SDI, HD-SDI or 3G-SDI on the output.
- And three HD-SDI modules, an input module (4 inputs) and two output modules (4 outputs each; scaling & non-scaling). The HD-SDI modules accommodate both SDI & HD-SDI. The Output Scaling Module allows any input format to be converted to SDI or HD-SDI on the output.

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 addition to the video I/O module slots, there are three Data module slots, one for a Tally Module and two for future expansion modules.

Typical module configurations:



8 Input DVI-U to 8 Output DVI-U



16 Input DVI-U to 16 Output DVI-U



20 Input (16 x DVI-U, 4 x 3G-SDI) to 12 Output (8 x DVI-U, 4 x 3G-SDI)

Integral Audio Switching

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 provides AES & analog I/O abilities, and audio delay. The module can connect to the TV One A2-7300 range of audio break-out units via HD-44 connectors.



A2-7312 Converts AES3-id to 16x BNC Connectors – 8x AES-id In and 8x AES-3id Out



A2-7302 Digital Audio Converter - AES-3id I/O on XLR – 8 AES Stereo In and 8x Stereo Out



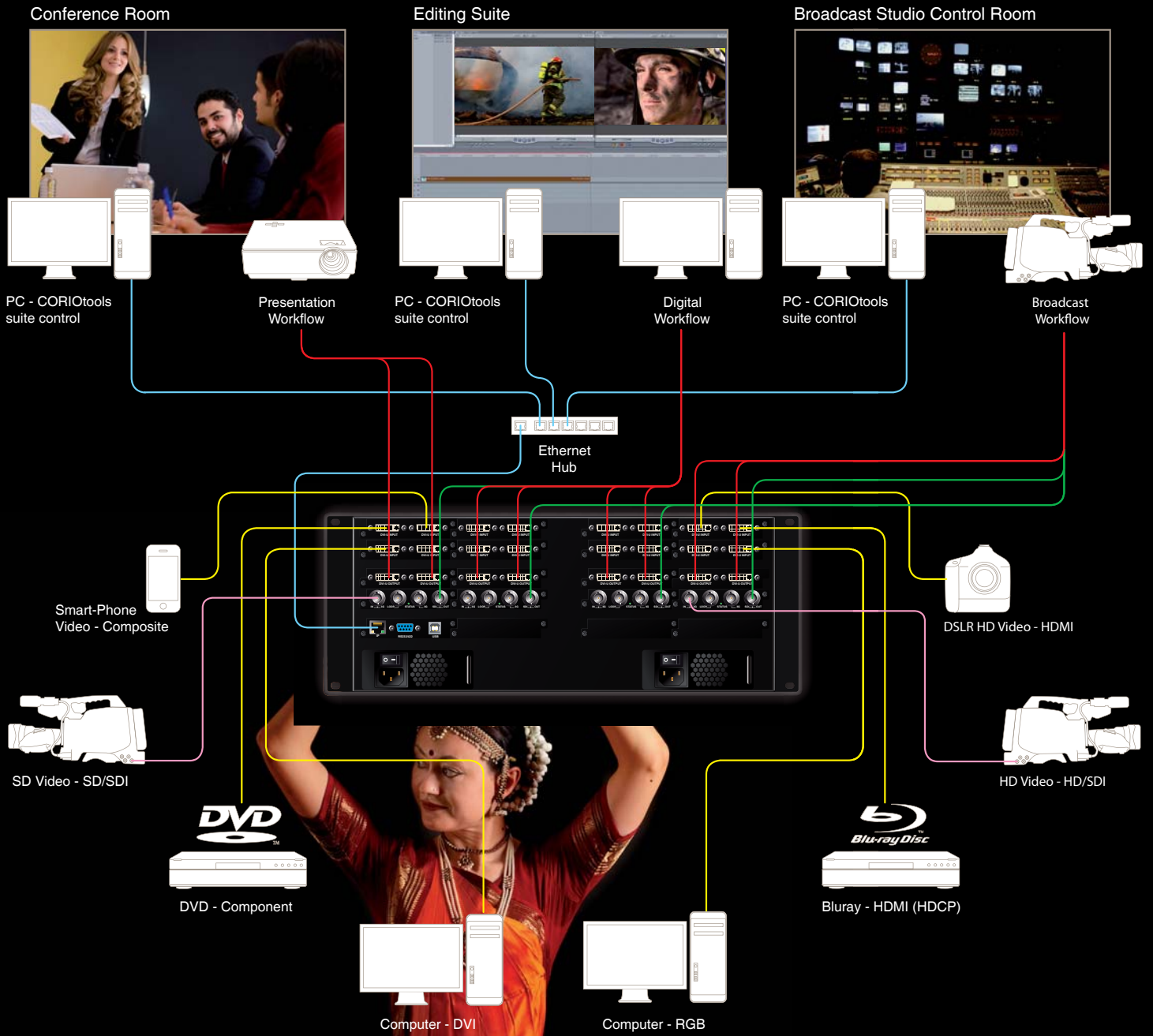
A2-7342 Analog Audio Converter - Analog Stereo on XLR – 4x Analog Stereo Ch. In - 4x Analog Ch. Out



A2-7322 Analog Audio Converter – AES-3id to Analog Stereo on Terminal Blocks – 8x Analog Stereo In and 8x Analog Stereo Out, Balanced or Unbalanced



Routing Example



Specifications

Video Inputs

Television Standards	NTSC, PAL, PAL-M/N, SECAM
Composite Video	Up to 30 via DVI-U
YC (S-Video)	Up to 30 via DVI-U
YUV /YPbPr	Up to 30 via DVI-U
SD/HD-SDI	Up to 60 via BNC
SD/HD/3G-SDI	Up to 30 via BNC

Computer Inputs

Digital DVI	Up to 30 via DVI-U (HDMI & HDCP compatible)
Analog	Up to 30 via DVI-U
Analog Format	RGBHV, RGBS, RGsB, YPbPr
Analog Sync	TTL Level, 10K Ω , Pos or Neg
RGB Level Range	0.5-2.0 Vp-p
SD/HD/3G-SDI	Up to 16 via BNC with loop out
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	Up to 30 via DVI-U
YC (S-Video)	Up to 30 via DVI-U
YUV /YPbPr	Up to 30 via DVI-U
HD/SD-SDI	Up to 32 via BNC
SD/HD/3G-SDI	Up to 30 via BNC

Computer Outputs

DVI Signals	Up to 30 via DVI-U (HDMI & HDCP compatible)
Analog	Up to 30 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
Settings Memory	Non-Volatile
Conversion Technology	Proprietary – CORIO [®] 3
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 micro-SD
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 with optional audio interface module
Delay	

Closed Captions

De-embed / embed	SDI (608 & 608 in 708)
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3G/HD/SD-SDI

SMPTE259M-C (SD-SDI Video)	270Mbps < 0.1UI jitter 525/625Line
SMPTE292M (HD-SDI Video)	1.485/1.4835Gbps < 0.2 UI jitter 720p, 1035i, 1080i, 1080p
SMPTE424M (3G-SDI Video)	2.97/2.967Gbps < 0.3 UI jitter 1080p 60/59.94
SMPTE272M-2004 (SD-SDI Audio)	8 Stereo 24bit Audio Channels
SMPTE299M-2004 (3G/HD-SDI Audio)	8 Stereo 24bit Audio Channels

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

USB	via Rear Type B connector
RS-232/422/485	via D9 Female Connector
IP Interface	RJ45 Connector

Warranty

Limited Warranty	5 Years Parts and Labour
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Regulatory Compliance

Main unit	FCC, CE, RoHS, UL
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Mechanical

Size (H x W x D)	7.0" x 19.0" x 13.1" (178 x 482 x 334mm)
Weight (Net)	Approx. 15Kg (33 lbs) (with redundant PSU option)

Environmental

Operating Temperature	0° to +50° C (+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	Approximately 35,000 hours

Power Requirement

Internal Power Supply	110v to 240v auto-detecting
Redundancy	Optional Internal Hot Swap PSU

Accessories Included

1x Operations Manual	
1x Power cable	US, UK, Euro or AU
Control Software	Downloadable from Website

Optional Accessories

See list above and check website for latest list

CORIOmatrix

by **tiVone**



Vertrieb / Distributor:

VIDELCO – Professionelle Audio-, Video-, Medien-Technik!

Telefon: +49 (0)2102 / 86 39-00 • Fax: +49 (0)2102 / 86 39-17 • info@videlco.eu • www.videlco.eu

VIDELCO
Europe Limited