

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 are 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.

By choosing scaled output modules, 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 and controls 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.

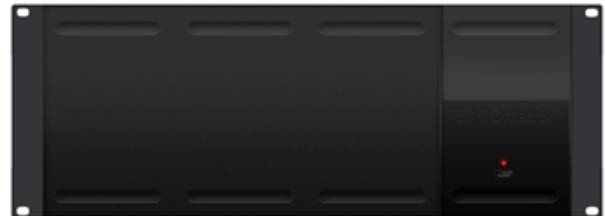
Integral audio switching is provided to route audio from the DVI (HDMI-compatible) input or SDI input to the DVI and SDI outputs. An optional Audio Module can provide AES and analog or digital I/O breakout capabilities as well as audio delay and can link to our A2-7300 range of audio break-out units.

DVI-U

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.



Standard Front Panel



Blank Front Panel

Key Features of the C3-340

- 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
- Automatic Incoming Resolution Detection
- 4:4:4 Full Bandwidth Sampling
- Video Signal Parameter Adjustments
- Closed-caption de-embed/embed for SDI
- Integral Audio Routing
- Audio de-embed/embed for SDI and DVI
- Interfaces: RS-232/422/485, USB, IP
- 4RU Frame Size
- Front Panel with Controls or Blank
- Modularity Provides Flexible I/O
- Mix Scaling and Non-scaling Output Modules

Scaler Modules Provide

- Seamless Cross Format Matrix Switching
- Available with Up-Down-Cross Conversion
- Diagonal Interpolation
- Noise Reduction for PAL, NTSC & Analog 1080i In
- Motion Compensation & 3:2 Pull-down
- AutoSet - Automatic Image Sizing of PC Inputs

Options

- Audio Module with AES Out and Adjustable Delay
- Digital & Analog Breakout Boxes
- Tally Module
- Redundant Hot Swappable Power Supplies
- Rear Rackmount Supports
- DVI-U Adapters (DVI to other connectors)

DVI-U Modules

The system features the following types of modules for the inputs and outputs. All modules only use 1 AV Slot.

- DVI-U Universal Input Module - 2 Inputs
- DVI-U Universal Output Non-Scaling Module-2 Outputs
- DVI-U Universal Scaling Output Module - 2 Outputs

The DVI-U output module with scaling allows any input to be converted to any of the DVI-U formats on the output. The high resolution DVI-U outputs are selectable as virtually any PC or HDTV resolution. 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.

SDI Modules

- 3G/HD/SD-SDI Input Module - 2 Inputs
 - 3G/HD/SD-SDI Output Non-Scaling Module - 2 Outputs
 - 3G/HD/3G-SDI Output Scaling Module - 2 Outputs
 - 3G/HD/SD-SDI In/Out (non-scaling) Module-1 In1 Out
- The output modules with scaling allow any input to be converted to SD-SDI, HD-SDI or 3G-SDI on the output.

- HD/SD-SDI Input Module - 4 Inputs
- HD/SD-SDI Output Non-Scaling Module - 4 Outputs
- HD/SD-SDI Output Scaling Module - 4 Outputs

The output modules with scaling allow any input format to be converted to SD-SDI or HD-SDI on the output. Use of these four output modules does impose some slot restrictions.

Audio Interfaces

The optional CM-AUD-8IN-8OUT Audio Interface Module allows connection to any of the following optional external breakout units via HD-44 Connector.

- A2-7312 Converts AES-3id I/O to 16x BNC Connectors
8x AES-id In and 8x AES-3id Out
- A2-7302 Converts AES-3id I/O to 16x XLR Connectors
8 AES Stereo In and 8x Stereo Out
- A2-7342 Converts AES-3id I/O to 16x XLR Connectors
4x Analog Stereo In & 4x Analog Out
- A2-7322 Converts AES-3id I/O to Analog Stereo on
Terminal Blocks, 8x Analog Stereo In and 8x Analog
Stereo Out, Balanced or Unbalanced

Data Modules

Tally Module - Uses 1 of 3 Data Slots Provided

Future Modules

Additional types and formats of Video, Audio and Data Modules will be added in the future. Please check our websites for the latest list.

Main Chassis

C3-340-1001 Main Chassis w/Blank Front Panel

C3-340-5001 Main Chassis w/LCD Front Panel

- 16 Slots available for Video/Audio Modules
- 3 Slots available for Data Modules
- Up to 32 I/O for DVI, HDMI, 3G-SDI, RGB/YPbPr
- Up to 64 I/O for HD/SD-SDI using all 4x Modules
- Single Power Supply
- Interfaces for RS-232/422/485, USB IP

Input Modules

CM-DVIU-2IN 2x via DVI-I Connectors

CM-3GSDI-2IN 2x (3G/HD/SD-SDI) via BNC

CM-HSDSI-4IN 4x (HD/SD-SDI) via BNC

Scaling Output Modules

CMX-DVIU-SC-2OUT 2x via DVI-I Connectors

CM-3GSDI-SC-2OUT 2x (3G/HD/SD-SDI) via BNC

CM-HSDSI-SC-4OUT 4x (HD/SD-SDI) via BNC

Non-Scaling Output Modules

CM-DVIU-2OUT 2x via DVI-I Connectors

CM-3GSDI-2OUT 2x (3G/HD/SD-SDI) via BNC

CM-HSDSI-4OUT 4x (HD/SD-SDI) via BNC

CM-3GSDI-1IN-1OUT 1x In (w/Reclocked Loop-thru)
and 1x Dual Out (3G/HD/SD-SDI) via BNC

Note: Full A-to-D or D-to-A, Format and Framerate Conversion is provided with Scaling Output Modules. Non-scaling Output Modules provide only Format Conversion of SDI to DVI-D and DVI-D to SDI (with the framerate remaining unchanged from input to output) using the appropriate I/O Modules.

Additional Modules

CM-AUD-8IN-8OUT Audio Interface Module
8x In & 8x Out via HD-44 Connector

CM-TALLY Tally Interface Data Module

CM-4RPS Redundant Hot Swappable Power Supply

Optional DVI-U Adapters

ZDH2050 Composite Video Adapter
DVI-I Male to BNC Female

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

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

ZDH2040 Analog PC Adapter
DVI-I Male to HD-15 Female

ZDB2038 Analog RGBHV Adapter Cable
DVI-I Male to 5-BNC Female – 1.5' (0.5m)

ZDB2044 YPbPr/YUV Adapter Cable
DVI-I Male to 3-BNC Female – 1.5' (0.5m)

ZDB2042 YPbPr/YUV Adapter
DVI-I Male to 3-RCA Female

CMD1939 HDMI Adapter
DVI-I Male to HDMI Female

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, 10KΩ, 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@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 micro-SD
De-Interlacing (NTSC, PAL, 1080i)	Pixel-level Motion Adaptive, 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)
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 Labor
Regulatory Compliance	
Main unit	FCC, CE, RoHS, UL
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	

Note: Preliminary Specifications Only – Subject to Change

Rear Panel Views

Sixteen Input DVI-U to Sixteen Output DVI-U Configuration



Eight Input DVI-U to Eight Output DVI-U Configuration



Twenty Input (16 DVI-U, 4 3G-SDI) to Twelve Output (8 DVI-U, 4 3G-SDI)



Front Angle View



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