CORIOmatrix®

C3-340

Universal I/O Scaling Matrix Router

OVERVIEW

CORIO®matrix (C3-340) is an ultra-flexible, modular, 4K multi-format AV matrix router that features tvONE's award winning CORIO® technology that provides the ability to up-scale, down-scale, and cross convert between a wide variety of analog and digital video formats at very low latency. CORIOmatrix is ideal for applications where mixed video and/or audio formats are used.

CORIOmatrix is a single device solution providing simplicity of control and configuration by removing the need for separate scalers, format converters and monitoring multi-viewers reducing system complexity and increasing reliability.

Sixteen modular slots (4U chassis C3-340) provide the ability to mix and match video formats. 12 input/output module are available for Digital AV, Analog AV and Broadcast formats. The unit is housed in a standard 4RU rackmount case and features an optional redundant hot swappable internal PSU and power inlet.

CORIOmatrix features a Web GUI for configuration and control. Alternatively, control COROmatrix via our free to download API, via RS-232 or IP or try our free automation plugins available for popular AV control systems.

KEY FEATURES

- More than just a AV matrix switch
- Modular design (16 slots)
- Huge variety format support with 12+ modules types
- Low latency format conversion
- Ultra-fast and clean switching
- Video monitoring preview available through optional monitoring output module
- Integral Audio Routing
- Audio de-embed/embed for SDI and DVI/HDMI
- Control: RS-232, TCP/IP, and WebUI
- Command Line Interface - Third Party Control
- 4RU Frame Size
- HDCP compliant
- Custom input/output resolution support
- Monitor Standby mode

QUAD INPUT MODULES

- Quad input modules provide 1080p inputs for greater density
- Include Quad HDMI input module and Quad 3G-SDI module

SCALER MODULES PROVIDE

- Any format in / any format out
- Seamless, Cross format Matrix Switching
- Up-Down-Cross Conversion
- Dynamic aspect ratio conversion (4:3 into 16:9 or vice versa)

OPTIONS

- Audio Module with AES In & Out
- Digital & Analog Audio Breakout Boxes
- Redundant Hot-Swappable Power Supplies
- Rear Rackmount Supports
- Universal DVI Adaptors (DVI to other connectors)

CHASSIS

Chassis

The CORIOmatrix chassis can accept a huge number of I/O configurations allowing complex functionality to be quickly and simply configured to meet your exact needs, while also being whisper quiet for in-room installs

Main Chassis	
C3-340 Main Chassis w/ Blank Front Panel	16 slots available for Video/Audio Modules Single Power Supply Interfaces for RS-232, USB, IP

ADVANCED FEATURES

CORIOmatrix has been designed to excel in environments with mixed signal formats, various resolutions, advanced audio management and signal monitoring requirements.

Up/Down/Cross Conversion

Whatever the resolution, mix and match your content with the widest range of resolutions providing full control of frame rate, aspect ratio and frame/field handling.

Flexible Audio

Although its possible embedded audio as standard, and optional Audio Modules can provide AES and analog or digital I/O breakout capabilities. Audio routing can be controlled using the Web interface and is also available using the API command line interface.

Format Conversion

CORIOmatrix has been designed to excel in environments with mixed signal formats, various resolutions, advanced audio management and signal monitoring requirements.

Integrated Monitoring

CORIO®matrix includes an optional, configurable Monitoring Module to preview system inputs and outputs (including embedded audio channels). The module features 2 DVI/HDMI outputs which can show different information/layouts relevant to your application.

MODULES

Universal DVI Modules

The dual connector universal DVI modules are available as input and scaled output versions. They both utilize a single DVI-I connector to provide the following signal formats using custom adapters HDMI, DVI-I, plus analog YUV, YPbPr, RGBHV, RGBS, RGsB, Y/C and Composite Video.

HDBaseT Modules

If your signals requires extension past the typical length of an HDMI cable (15m) optional HDBaseT modules are available for input and output, allowing extension to 150m when paired with the Magenta DX-500/LX-500 Transmitters and Receivers. In addition to the transmission to audio and video, the modules can also pass an Ethernet signal, which can be useful for control of items such as projectors.

SDI Modules

For Broadcast connectivity using either 3G/HD/SD-SDI choose between a selection of input and output modules. Both Input and output modules are available in dual 3G/HD/SD-SDI with a quad version for HD/SD-SDI. In addition, the scaling 3G/HD/SD-SDI output module allows any source to be converted to SD-SDI, HD-SDI or 3G-SDI for output.

Additional Modules	
CM-AUD-8IN-8OUT	Audio Interface Module 8x In & 8x Out via HD-44 Connector
CM-4RPS	Redundant Hot-Swappable Power Supply

Input Modules	
CM-DVIU-2IN	2x DVI-U(DVI, HDMI, RGB-YUV, CV, YC) input
CM-3GSDI-X-2IN	2x 3G/HD/SD-SDI via BNC input
CM-HDBT-X-2IN-1ETH	2x HDBASET input
CM-HDMI-4K-X-2IN	2x 4K30 HDMI input
CM-HDSCI-X-4IN	4x HD/SD-SDI via BNC input
CM-HDMI-X-4IN	4x HD only HDMI* input
CM-3GSDI-X-4IN	4x 3GSDI* via BNC input
Scaling Output Modules	
CM-DVIU-XSC-2OUT	2x DVI-U(DVI, HDMI, RGB/YUV, CV, YC) out
CM-3GSDI-XSC-2OUT	2x 3G/HD/SD-SDI via BNC out
CM-HDMI-4K-XSC-1OUT	1x 4K30 HDMI out
CM-HDSDI-XSC-4OUT	4x HD/SD-SDI via BNC
CM-HDBT-XSC-2OUT-1ETH	2x HDBaseT w/Ethernet
CM-DVI-I-MON-2OUT	2x DVI Monitoring Output

Note: Full A-to-D or D-to-A, Format and Framerate Conversion is provided with Scaling Output Modules.

Optional DVI-U Adapters	
ZDH2050	Composite Video Adapter DVI-I Male to BNC Female
ZDB2048	YC (S-Video) Adapter
ZDS2046	YC (S-Video) Adapter DVI-I Male to 4-Pin Mini-Din Female
ZDH2040	Analog PC Adapter DVI Male to HD-15 Female
ZDB2038	Analog RGBHV Adapter Cable DVI-I Male to 5=BNC
ZDB2044	YPbPr/YUV Adapter Cable DVI-I Male to 3-BNC Female

SPECIFICATIONS

Computer Input	
DVI/HDMI	Up to 30 via Universal DVI (HDCP compliant)
HDMI	Up to 60 via Quad HDMI input module (HDCP compliant)
Analog	Up to 30 via Universal DVI
Analog Format	RGBHV, RGsB, YPbPr
Analog Sync	TTL Level, 10KΩ, Pos or Neg
RGB Level Range	0.5-2.0 Vp-p
Scan Rate Detection	Automatic
Analog Signals	PC to 1920x1080, HD to 1080p60
DVI Signals	PC to 1920x1200, HD to 1080p60
Max Horiz Scan Rate	150kHz
Computer Compatibility	PC, Workstations
Outputs	
Digital DVI/HDMI	Up to 30 via Universal DVI (HDCP compliant)
Digital HDMI	Up to 30 via HDBaseT (HDCP compliant)
Analog	Up to 30 via Universal DVI
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 1920x1080, HD to 1080p60
3G-HD-SDI	HD to 1080/60p
Settings Memory	Non-volatile
Conversion Technology	Proprietary - CORIO®2
Color	RGB/DVI/HDMI/YPbPr 24-bit 4:4:4, SDI 20-bit 4:2:2 Quad inputs (HDMI & 3G-SDI) 4:2:0 4K input module (4:2:0)
Max. Sampling Rate	300MHz
Firmware Memory	Flash, Upgradeable via micro-SD
De-Interlacing (NTSC, PAL, 1080i	Pixel-level Motion Adaptive
Video Comb Filter	Adaptive
Film (NTSC, 1080i)	3:2 Pull-down
Video Adjustments	Contrast, Brightness
Audio Support	
Digital/Analog	48kHz PCM
De-embed/embed	SDI & HDMI-I/O via DVI with optional Audio module with AES breakout. HDBaseT output
Video Resolutions supported (HDMI, DVI, YPbPr, SDI)	
720p (1280x720)	(23.98, 24, 25 SDI only), 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 (not 4x HD-SDI input module)
4K (3840x2160p)	23.98, 24, 25, 29.97, 30Hz (4K input module only)
4k (4096x2160p)	23.98, 24, 25, 29.97, 30Hz (4K input module only)
Video Inputs	
Television Standards	NTSC, PAL, PAL-M/N
Composite Video	Up to 30 via Universal DVI
YC (S-Video)	Up to 30 via Universal DVI
YUV/YPbPr	Up to 30 via Universal DVI
SD/HD-SDI	Up to 60 via BNC
SD/HD/3G-SDI	Up to 30 via BNC
3G-SDI	Up to 60 via BNC
Video Outputs	
Television Standards	NTSC, PAL, PAL-M/N
Composite Video	Up to 24 via Universal DVI
YC (S-Video)	Up to 24 via Universal DVI
YUV/YPbPr	Up to 24 via Universal DVI
SD/HD/3G-SDI	Up to 24 via BNC
HDBaseT	Up to 24 via RJ45
4K30 HDMI	3840x2160p30
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
SMPTE424M (3G-SDI Video)	2.97/2.967Gbps < 0.3 UI jitter 1080p 60/59.94
SMPTE272M-2004 (SD-SDI Audio)	4 Stereo 24bit Audio Channels
SMPTE299M-2004 (3G/HD-SDI Audio)	4 Stereo 24bit Audio Channels
Control Methods	
RS-232	via D9 Female Connector
IP Interface	RJ45 Connector
Web UI	Browser
Warranty	
Limited Warranty	5 Years Parts and Labor
Regulatory Compliance	
Main Unit & Modules	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 (33lbs) (with redundant PSU option)
Environmental	
Operating Temperature	0° to +40°C (+32° to +104°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
BTU	1024 BTU/hr
Fan Noise	0-35°C = 37.7dB(A) Min 1m 40°C = 46.6dB(A) Max @ 1m
Power	
Internal Power Supply	110v to 240v auto-detecting
Redundancy	Optional Internal Hot Swap PSU
Consumption	300 watts maximum (fully populated)
Accessories Included	
1x Operations Manual	
1x Power Cable	US, UK, Euro or AU
Control Software	WebUI, no software required to install

Specifications subject to change
*Not recommended for interlaced signals
**HDCP protected sources are not allowed to be converted in this way.

PANEL EXAMPLE (# OF INPUTS OR OUTPUTS)

Optional power supply