

# CORIO®matrix mini

## C3-310 Series



### Key Features

- More than just a AV matrix switch
- Flex i/o: unparalleled flexibility and freedom when dealing with mixed any AV format
- Modular design (6 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
- Coming soon: IP streaming integration & local 4K playback
- 1RU Frame Size
- HDCP compliant
- Custom input/output resolution support
- Monitor Standby mode

### Quad input modules

- New 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 viceversa)

### Options

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

### Overview

C3-310 CORIO®matrix mini 4K is an ultra-flexible, modular, multi format AV matrix router. Leveraging tvONE's patented CORIO® technology this is a one box solution for integrating mixed AV signals seamlessly at very low latency.

The CORIO®matrix is ideal for applications where mixed audio and/or video formats are used and require integration. For example, applications where SDI signals are used in conjunction as DVI or 4K HDMI – flexibility in input and outputs.

CORIO® technology means one can Up-scale, Down-scale and format Cross convert between a wide variety of analog and digital video formats.

The six modular AV slots (1U chassis) provide ability to mix and match video formats in a switcher. The quantity and type of modules selected determines which formats will be accommodated and the matrix size (12+ input / output modules to choose from).

A single device solution means, simplicity of control and configuration. By removing the need for additional separate little scalers / format converters / decoders the CORIO®matrix simplifies and centralizes the control of all of these functions.

Control and configuration of the CORIO®matrix can be done via API via RS-232 or IP interface (try our free Crestron / AMX modules or write your own via public API). Alternatively, an internal web interface provides full configuration and control.

The unit is housed in a standard 1RU rackmount case.

### Advanced Features

The CORIO®matrix includes an optional and unique monitoring module. This module will create a thumbnail composition previewing all your inputs and outputs (including embedded audio channels). This monitoring module is configurable and has 2 DVI/HDMI outputs each can show different information/layouts relevant to your application.

Integral audio switching / embedding /de-embedding is provided as standard to route audio. An optional Audio Module can provide AES and analog or digital I/O breakout capabilities when linked to our A2-7300 range of audio break-out units.

Audio routing control is implemented in the Web interface and available using the command line interface.

### Universal DVI

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

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### Universal DVI Modules

tvONE Universal DVI modules allow for direct connections to most common analog or digital sources and destinations.

Custom DVI-I adapters provide connections for: Composite, S-Video, component, VGA, RGBHV and HDMI (DVI-D connects directly).

A DVI module provides 2 connections per AV Slot.

- Universal DVI Input Module
- Universal DVI Scaling Output Module, supporting virtually any PC or HDTV resolution.

### HDBaseT Modules

- HDBaseT Scaling Output Module - 2 HDBaseT Outputs w/Ethernet
- HDBaseT input module - 2 HDBaseT Inputs w/Ethernet

### SDI Modules

- 3G/HD/SD-SDI Input Module - 2 Inputs
- HD/SD-SDI Input Module - 4 Inputs
- 3G/HD/SD-SDI Input Module – 4 Inputs
- 3G/HD/SD-SDI Scaling Output Module - 2 Outputs  
The scaling 3G/HD/SD-SDI output module allows any source to be converted to SD-SDI, HD-SDI or 3G-SDI for output.\*\*

### Monitoring Module

A single monitoring Module allows the inputs and outputs to be viewed on 1 or 2 DVI outputs for signal verification. Embedded audio signals can be monitored along with source and destination identification.

### 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

### Future Modules

Additional types and formats of Video, Audio and Data Modules will be added in the future.

Coming soon: 4K Media Streaming input module

### Main Chassis

C3-310 Main Chassis w/Blank Front Panel

- **6 Slots available for Video/Audio Modules**
- Up to 12 I/O for DVI, HDMI, 3G-SDI, RGB/YPbPr
- Up to 20 I/O for HD/SD-SDI/HDMI/3G-SDI using all 4x Input Modules
- Interfaces for RS-232, USB, IP

### Input Modules

- CM-DVIU-2IN 2x DVI-U<sup>(DVI, HDMI, RGB/YUV, CV, YC)</sup> 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-HSDSI-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
- CM-AVIP-X-IN-1USB-1ETH 4K media streaming input

### Scaling Output Modules

- CM-DVIU-XSC-2OUT 2x DVI-U<sup>(DVI, HDMI, RGB/YUV, CV, YC)</sup> Out
- CM-3GSDI-XSC-2OUT 2x 3G/HD/SD-SDI via BNC Out
- CM-HDMI-4K-XSC-1OUT 1x 4K30 HDMI out
- CM-HSDSI-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.**

### Additional Modules

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

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### Specifications

<b>Computer Input</b> Digital DVI/HDMI Up to 10 via Universal DVI (HDCP compliant) Digital HDMI Up to 16 via Quad HDMI input module (HDCP com) Analog Up to 10 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		
<b>Outputs</b> Digital DVI/HDMI Up to 10 via Universal DVI (HDCP compliant) Digital HDMI Up to 10 via HDBaseT (HDCP compliant) Analog Up to 10 via Universal DVI Analog format RGBHV, 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 <sup>®</sup> 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 Pixel-level Motion Adaptive (NTSC, PAL, 1080i) Video Comb Filter Adaptive Film (NTSC, 1080i) 3:2 Pull-down Video Adjustments Contrast, Brightness		
<b>Audio Support</b> Digital/Analog 48kHz PCM De-embed/embed SDI & HDMI-I/O via DVI with optional Audio module with AES break-out. HDBaseT output		
<b>Video Resolutions supported (HDMI, DVI, YPbPr, SDI)</b> 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)		
<b>Video Inputs</b> Television Standards NTSC, PAL, PAL-M/N Composite Video Up to 10 via Universal DVI YC (S-Video) Up to 10 via Universal DVI YUV /YPbPr Up to 10 via Universal DVI SD/HD-SDI Up to 16 via BNC SD/HD/3G-SDI Up to 16 via BNC 3G-SDI up to 16 via BNC		
<b>Video Outputs</b> Television Standards NTSC, PAL, PAL-M/N Composite Video Up to 10 via DVI YC (S-Video) Up to 10 via DVI YUV /YPbPr Up to 10 via DVI SD/HD/3G-SDI Up to 10 via BNC HDBaseT Up to 10 via RJ45 4K30 HDMI 3840x2160p30		
<b>3G/HD/SD-SDI</b> SMPTE259M-C (SD-SDI Video) 270Mbps < 0.1UI jitter SMPTE292M (HD-SDI Video) 525/625Line SMPTE424M (3G-SDI Video) 1.485/1.4835Gbps < 0.2 UI jitter SMPTE272M-2004 (SD-SDI Audio) 720p, 1035i, 1080i, 1080p SMPTE299M-2004 (3G/HD-SDI Audio) 2.97/2.967Gbps < 0.3 UI jitter Note: Video & Audio 1080p 60/59.94 4 Stereo 24bit Audio Channels 4 Stereo 24bit Audio Channels		
<b>Control Methods</b> RS-232 via D9 Female Connector IP Interface RJ45 Connector Web UI Browser		
<b>Warranty</b> Limited Warranty 5 Years Parts and Labor		
<b>Regulatory Compliance</b> Main unit FCC, CE, RoHS		
<b>Mechanical</b> Size (H x W x D) 1.75" x 19.0" x 13.25" 45 x 482 x 336mm 383mm/15.25" Weight (Net) Approx. 5Kg (11.03 lbs)		
<b>Environmental</b> 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 50,000 hours BTU 427 BTU/hr (fully populated) Fan Noise 0-35°C = 37.7dB(A) Min @ 1m 40°C = 50.6dB(A) Max @ 1m		
<b>Power</b> Internal Power Supply 110v to 240v auto-detecting Consumption 125 watts maximum (fully populated)		
<b>Accessories Included</b> 1x Operations Manual 1x Power cable US, UK, Euro or AU Control Software WebUI, no software required to install		

Specifications subject to change

\*Only 5 slots are modular. 1 Universal DVI Input card is included in all frames.

\*\*HDCP protected sources are not allowed to be converted in this way.

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### Panel Configuration Drawings

