

CORIO®matrix mini

C3-310 Series

Key Features

- Universal DVI Inputs/Outputs: (HDMI/CV/YC/RGB/YPbPr)
- SDI Inputs/Outputs: (SD/HD/3G-SDI)
- High Resolution Inputs/Outputs: Analog: PC to 1920x1080p/60, HDTV to 1080p/60
- DVI: PC to 1920x1200, HDTV to 1080p/60 w/EDID
- SDI: SD, HDTV to 1080p/60
- HDMI-Compatible Input & Output with HDCP
- Automatic Incoming Resolution Detection
- 4:4:4 Full Bandwidth Sampling
- Video Signal Parameter Adjustments
- Horizontal alignment on Analog RGBHV, RGsB and YUV/YPbPr Inputs
- Integral Audio Routing
- Audio de-embed/embed for SDI and DVI/HDMI
- Control: RS-232, TCP/IP, and WebUI
- Upgrade: USB and TCP/IP
- Command Line Interface - Third Party Control
- 1RU Frame Size
- Modularity Provides Flexible I/O

Scaler Modules Provided,

Factory fit only

- Seamless, Cross Format Matrix Switching
- Up-Down-Cross Conversion
- Diagonal Interpolation
- Noise Reduction for PAL, NTSC & Analog 1080i
- Motion Compensation & 3:2 Pull-down

Options

- Audio Module with AES I/O
- Digital & Analog Audio Breakout Boxes
- Dual Redundant Power Supplies, Factory fit only
- Rear Rackmount Supports
- Universal DVI Adapters (DVI to other connectors)



Overview

C3-310 CORIOmatrix mini is a high quality modular video matrix router that utilizes firmware based video routing, switching and signal conversion platform. This is 1 Rack Unit with six modular AV slots that can be populated as inputs or outputs as needed.

CORIOmatrix scaled output modules provide Up, Down and Cross conversion between a wide variety of analog and digital video formats. The quantity and type of modules selected determines which formats will be accommodated and the matrix size.

All CORIOmatrix functions can be controlled via RS-232 or IP. A web interface is provided for both video and audio routing and setup of the router and can be used as the main control interface if desired. The built-in command line interface easily permits a wide choice of control options. AMX & Creston modules are also available.

The unit is housed in a standard 1RU rackmount case and features an optional redundant internal PSU and power inlet.

Advanced Features

The CORIOmatrix 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 and can link to our A2-7300 range of audio break-out units. Audio routing control is implemented in the Web UI and also 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, RGsB, RGsB, Y/C and Composite Video. A variety of adapters are available to convert from DVI-I to other connectors.

CORIO®matrix mini

C3-310 Series

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 Module

- HDBaseT Scaling Output Module - 2 HDBaseT Outputs w/Ethernet

SDI Modules

- 3G/HD/SD-SDI Input Module - 2 Inputs
- 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 input to be converted to SD-SDI, HD-SDI or 3G-SDI for output**.

Monitoring Module

A single monitoring card allows the inputs and outputs to be viewed on 1 or 2 outputs for signal verification. Embedded audio signals can be monitored along with source and destination identification. This module is only available with Universal DVI Outputs

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.

Main Chassis

C3-310 Main Chassis w/Blank Front Panel

- 6 Slots available for Video/Audio Modules*
- Up to 10 I/O for DVI, HDMI, RGB/YPbPr
- Up to 10 I/O for 3G/HD/SD-SDI
- Up to 16 inputs for HD-SDI using all 4x Input Modules
- Up to 10 Outputs for HDBaseT
- Single Power Supply
- Interfaces for RS-232, USB, IP
- Web GUI

Input Modules

- CM-DVIU-2IN 2x via DVI-I Connectors
- CM-3GSDI-2IN 2x (3G/HD/SD-SDI) via BNC
- CM-HDSI-4IN 4x (HD/SD-SDI) via BNC

Scaling Output Modules

- CM-DVIU-XSC-2Out 2x via DVI-I
- CM-3GSDI-XSC-2Out 2x (3G/HD/SD-SDI) via BNC
- CM-HDBT-SC-2Out-1ETH 2x HDBaseT w/Ethernet

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

Additional Modules

- CM-DVIU-MON-2Out DVI Monitoring Module
- CM-AUD-8IN-8OUT Audio Interface Module
8x In & 8x Out via HD-44 Connector
- CM-4RPS Redundant Power Supply, factory fit only

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

CORIO®matrix mini

C3-310 Series

Specifications

Computer Input	
Digital DVI	Up to 10 via Universal DVI (HDMI & HDCP compatible)
Analog	Up to 10 via Universal DVI
Analog Format	RGBHV, RGBS, RGsB, YPbPr
Analog Sync	TTL Level, 10K Ω , Pos or Neg
RGB Level Range	0.5-2.0 Vp-p
Scan Rate Detection	Automatic
Analog Signals	PC to 1920x1080p/60, HD to 1080p60
DVI Signals	PC to 1920x1200, HD to 1080p60
Max Horiz Scan Rate	150kHz
Computer Compatibility	PC, Workstations
Computer Outputs	
DVI Signals	Up to 10 via Universal DVI (HDMI & HDCP compatible)
Analog	Up to 10 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
Vertical Refresh Rate	Any to 250Hz
Size and Position	User Adjustable
Settings Memory	Non-Volatile
Conversion Technology	Proprietary – CORIO®2
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, Diagonal
(NTSC, PAL, 1080i)	Interpolation, Noise Reduction.
Video Comb Filter	Adaptive
Film (NTSC, 1080i)	3:2 Pull-down
Video Adjustments	Contrast, Brightness, RGB Gamma
Audio Support	
De-embed/embed	SDI & HDMI-I/O via DVI with optional audio interface module
HD Video Resolutions supported (DVI, YPbPr, SDI)	
720p (1280x720)	23.98, 24, 25, 29.97, 30, 50, 59.94, 60Hz
1080i (1920x1080)	50, 59.94, 60Hz
1080p (1920x1080)	23.98, 24, 25, 29.97, 30Hz
1080p (1920x1080)	50, 59.94, 60Hz
Video Inputs	
Television Standards	NTSC, PAL, PAL-M/N, SECAM
Composite Video	Up to 10 via DVI
YC (S-Video)	Up to 10 via DVI
YUV /YPbPr	Up to 10 via DVI
HD-SDI	Up to 16 via BNC
SD/HD/3G-SDI	Up to 8 via BNC

Video Outputs	
Television Standards	NTSC, PAL, PAL-M/N, SECAM
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
3G/HD/SD-SDI	
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
Control Methods	
RS-232	8 Stereo 24bit Audio Channels
IP Interface	Support Only
Web UI	via D9 Female Connector
Warranty	
Limited Warranty	RJ45 Connector
Regulatory Compliance	
Main unit	Browser
Mechanical	
Size (H x W x D)	5 Years Parts and Labor
Weight (Net)	FCC, CE, RoHS
Environmental	
Operating Temperature	1.75" x 19.0" x 13.25"
Operating Humidity	45 x 482 x 336mm
Storage Temperature	383mm/15.25"
Storage Humidity	Approx. 5Kg (11.03 lbs)
MTBF	
Power Requirement	
Internal Power Supply	0° to +40° C (+32° to +104° F)
Redundancy	10% to 85%, Non-condensing
Accessories Included	
1x Operations Manual	-10° to +70° C (+14° to +158° F)
1x Power cable	10% to 85%, Non-condensing
Control Software	Approximately 50,000 hours
Optional Accessories	
See list above and check website for latest list	

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.

CORIO®matrix mini

C3-310 Series

Panel Configuration Drawings

