C3-540 CORIO®master offers a new, more efficient approach to building video systems. Using TV One's latest CORIO®3 technology, it gives the user access to new levels of video processing power to achieve new heights of creative and dynamic video displays. All this is possible in one 4RU chassis.

CORIO®3 video processing technology allows the use of layouts which define where each output is used. Outputs can be independently rotated through 360º in real-time, without adding delay, for use in creative video wall applications. Projectors can be used off axis with brightness controls to aid in an even distribution of the projected image. Warping controls allow for projection on curved surfaces. Multiple layouts can be used at the same time or one layout can be designed to tie multiple projectors or monitors together as one large image.

Edge blending, monitor walls and multiple projectors can show any combination of inputs by setting up canvases to design each layout without the limitation of a monitor or projector dedicated to just one source input. Multiple canvases can be used at the same time to define multiple layouts to aid in choreographing a video design. To further assist functionality, multiple windows can be used to design a canvas with the capability to resize and rotate each window on the canvas which is then sent to the predefined layout. The same canvas can be sent to more than one layout design. This allows for duplication in more than one area or used for status display on one monitor of the entire canvas.

The CORIOmaster also includes a multi-viewer to monitor the inputs to aid in previewing the sources during live events or used as a status monitor in various types of installations. Graphic images can be loaded into the CORIOmaster to use as backgrounds as well as for use on each canvas.
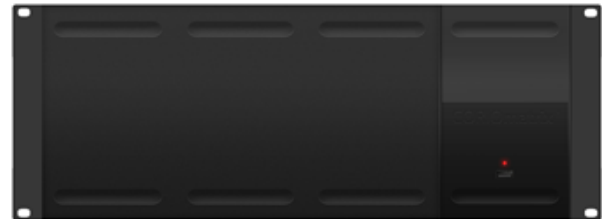
Control of the CORIOmaster is provided by a multiplatform software package that provides an intuitive way of setting up layouts and defining the canvas to be used for each layout. Presets can be saved and recalled. Changes can be made to the canvas and then transferred to the layout.

The flexibility to use various input formats and the ability to up, down, and cross covert those signals on the outputs of the CORIOmaster to various displays and projectors of any format allow for easy installation without the use of multiple pieces of equipment to accomplish the same task all accomplished in a 4RU chassis.

The CORIOmaster is high power in its capabilities, but low in its power consumption. It typically requires only 160 watts, fully loaded. A traditional video system that performs the same tasks can consume ten times as much energy. Over its life, that is a lot of savings.

Standard Front Panel

Blank Front Panel

Key Features of the C3-540
- Single or Multiple Output Layouts
- Single or Multiple Canvases
- Real-time 360º Output Rotation
- Projector Off-Axis Correction w/Brightness Control
- Output Warping for Projection on Curved Surfaces
- Simultaneous use of Multiple Layouts and Canvases
- One or More Windows (PIP's) on each Canvas
- Layouts and Canvases Can Be Created Off Line and Saved for Later Recall
- Internal Still Image Store
- 3 Levels of User Access and Control
- PC and Apple Desktop Software
- Controllable by Web Browser
- Low Power Consumption - 160w

Video Choreography Design Possibilities
- Live Event Using Multiple Projectors
  - Edgeblending w/Side Projectors
  - Stage Monitoring
- Video Walls
  - Number of Monitors Determined by Number of Outputs
  - Rotation of Monitors Possible using Canvas Window Rotation
- Command & Control
  - Monitoring of Various Video Sources & Formats
- Hospital/Healthcare
  - Distribution with Windowing to Various Operating Rooms or other locations
  - Status Display of Video Equipment in Use

Note: Any combination of above uses is possible in one CORIOmaster.

Limitless Possibilities to CORIOgraph Your World!

Physical Properties

The C3-540 has 16 Uuniversal AV Module slots available and the CORIOmaster automatically recognizes the modules inserted as either input or output modules. 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. Additional DVI-U or 3G-SDI modules can be added later in spare slots without having to reset the unit. All AV modules are hot swappable and recognized for immediate auto configuration.

CORIOmaster also provides independent Up, Down and Cross conversion for every output between a variety of analog and digital video formats thru 3G-SDI and WUXGA. 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. A front panel LCD option makes direct setup easy. 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 CORIOmaster 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.

Key Hardware Features of the C3-540

- 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
- Interfaces: RS-232/422/485, USB, IP
- 4RU Frame Size
- Audio de-embed/embed for SDI and DVI
- Seamless Cross Format Matrix Switching
- Available with Up-Down-Cross Conversion
- Diagonal Interpolation
- Noise Reduction for
    PAL, NTSC and analogue 1080i inputs
- Motion Compensation & 3:2 Pull-down
- AutoSet - Automatic Image Sizing of PC Inputs

Options

- Audio Module with AES Break-out and Adjustable
    Delay
- Tally Module
- Redundant Hot Swappable Power Supplies
- Rear Rackmount Supports
- DVI-U Adapters (DVI to other connectors)

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.

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 Scaling Output Module - 2 Outputs

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/3G-SDI Output Scaling Module - 2 Outputs
- HD/SD-SDI Input Module - 4 Inputs
- HD/SD-SDI Output Scaling Module - 4 Outputs

Note - Use of the four-output modules does impose some slot restrictions.

Data Modules

Tally Module - Uses 1 of 3 Data Slots Provided

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. Please check our websites for the latest list.

Main Chassis

C3-540-1001 Main Chassis w/Blank Front Panel
C3-540-5001 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-HDSDI-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-HDSDI-SC-4OUT 4x (HD/SD-SDI) via BNC

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®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 (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
Delay	optional audio interface module

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 Labour

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