PRODUCT CATALOG
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tvone

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Key to symbols used throughout the Catalog

CORIO® Powered

Picture in Picture

Keying

Mix

Edge Blending

Genlock

Audio

▲ Up Conversion
▼ Down Conversion
✖ Cross Conversion

Introduction

As we approach our 25th year in business, TV One looks back on a long series of technical innovations and ahead to even more significant contributions to the broadcast and professional video market. Our focus is the design and manufacture of video and audio processing products, based on our proprietary CORIO® conversion technology. The industry has shown its acceptance of our innovative products by rewarding us with unbroken annual growth. With over a dozen offices and major operations on four continents, TV One stands ready to increase its positive impact on the industry.

David K. Barnes

Chairman, TV One Companies

CORIO® Technology

CORIO® is a stylized form of the word choreography and refers to TV One's mission of choreographing video. As video formats and standards continue to evolve, the format landscape becomes more complex. The heart of CORIO® technology is its ability to level the format playing field and allow the user to freely move between various computer, video, analog, digital, standard and high definition video formats. CORIO® technology was initially developed as a high quality method of computer-to-video scan conversion before third party video scaling chipsets were on the market. Even with the advent of such chips, CORIO®'s advantages in terms of image quality and flexibility were strong enough that it was continually used in TV One products. CORIO® technology has steadily advanced since its inception in 1994 to its present level, called CORIO®2. The continuity and cumulative expertise of the design team established CORIO®2 as the leading video scaling technology available today and will insure that position is maintained into the future.

The CORIO®2 Difference

When competitors design a video scaler or other video conversion device, they generally look to several chip manufacturers to provide a chipset for the actual video conversion and scaling. Once a chipset is chosen, the support circuitry is designed. However, the majority of these chips are designed for a completely different task, primarily for scaling incoming video to the format required for LCD and Plasma Displays. These same chips are then adapted for use in standalone video scalers, often with a high degree of success, but always with one major limitation. The chip only does what it was originally designed to do and handles a predetermined set of input and output standards, resolutions and formats. Therefore, a video scaler using a third-party chipset will never go beyond the initial capability. What you see on day one is generally what you get throughout the product's entire lifespan.

The chipset manufacturers follow the same firmware development path as we do with CORIO®2 technology at first. The huge difference is that when they determine the design is finished, they freeze the code with a known set of parameters. After that point, changes or bug fixes can only be done with external circuitry and some aren't even capable of being fixed. The advantage of this approach is that the resulting chip can be mass produced at a lower cost if demand is sufficient. The disadvantage is that any existing bugs are also permanent and the cost to make a new chip with corrections is prohibitive.

The Ultimate in Flexibility

CORIO®2 technology is completely different in that the firmware is not permanently committed to a chip. Instead the firmware is loaded into a FPGA (Field Programmable Gate Array) to perform the task. That FPGA becomes the core of the finished product and can be changed at any time to fix bugs, add input/output resolutions or provide additional features. Since access to the FPGA is always available via a serial interface port, new firmware can be downloaded from the TV One Tech Support website and upgraded in a matter of minutes. Because the actual inner working of the FPGA is being altered, the hardware is effectively being changed by the firmware upgrade. A user with a model several years old can usually upgrade that unit to the same level as a brand new version of that same model. This means that product features are dynamic in CORIO®2 products and provide "obsolescence insurance" to the end-user.

Major Features Added Retroactively

A real world example of the benefits of CORIO®2 technology is the introduction of Edge Blending

at Infocomm 2006. Using multiple projectors to show a single image has become very popular, but it is undesirable to show a hard edge between these images. A seamless blending of the edges can be accomplished by overlapping the images and feathering them together making the overlap point undetectable to the eye. Edge Blending can take place with projectors equipped with this capability or by an external hardware device. Instead of creating a product just for Edge Blending, it was added as a standard feature to the already existent C2-7000 series. Not only was that a powerful addition to the C2-7000 series, but an existing owner can add this feature by going to the support website and downloading the latest firmware version.

Customization Made Easy

Special applications can generally be addressed by firmware changes thanks to the enormous flexibility of the CORIO®2 architecture. Often, users will have a special requirement that necessitates some code changes by our engineering staff. This can be accommodated by writing some additional code, adding it to the firmware and uploading it as a new version into the unit. If the requirement is unique, it may only be available to a specific user or group of users. However, if it is a good feature or product improvement, it can be added to the general firmware and made available to all users with the next firmware release.

Firmware Upgrades that Alter the Hardware

The ability to upload new firmware to TV One products should not be confused with some competitor's ability to do a seemingly similar thing. They are solely re-programming the micro-controller in charge of the scaling chip. They aren't capable of adding extra features at the hardware level using such a method. Also, CORIO®2 firmware updates are not limited to video scaling. For example, the audio processor at the heart of the new C2-7310 HD-SDI Video-Audio Processor is also based on a FPGA, making it easy to add or change features or standards. This is extremely important in the digital audio market, since it provides flexibility to give the customer exactly what they want. Off the shelf audio processing chips are just like video scalers and can't adapt to new markets or standards.

Providing Obsolescence Insurance

When a user takes possession of a CORIO®2 based product, registering it on TV One's support website is encouraged. This keeps a communication link open between TV One and the customer to insure that the latest features are always available. When a new firmware version is announced, an email is sent to all registered users of the affected models. A list of the additional features and a list of bug fixes, when applicable, is provided in the email. The user can then determine if it is essential to their application to make the firmware upgrade. Some users may even skip a couple of firmware releases until one comes along that is of interest, in which case, all of the benefits of previous firmware upgrades accrue with the latest version.

Creating New Resolutions on the Fly

Not all changes require new firmware downloads. For example, even though the unit comes with a predefined set of input and output resolutions, new ones can be added by the user. A resolution calculator within TV One's Windows Control Panel software lets the user create new resolutions and add them to the unit's firmware quickly and efficiently. This is particularly important for medical, radar, scientific and other applications where the source or display often is not a standard computer or video device.

CORIO®2's Family Philosophy

The design philosophy at TV One is to create a product family instead of just one product. CORIO®2 technology makes this easy and cost-effective since the firmware is scalable and as product features are removed, the code is reduced, allowing for a smaller FPGA. For instance, the C2-7100 is a powerful Dual Channel, Multi-format, Video Switcher/Scaler that performs up, down and cross conversion. After its successful launch, a group of derivative products in the C2-1000, C2-2000 and 1T-C2 Series were created. These perform specific tasks and functions found in the C2-7100, at that same quality level, but at reduced prices.

Great Multi-Tasking Capability

CORIO®2 technology affords other advantages over competitive approaches to product development. The FPGA is not restricted to containing firmware exclusively for video conversion and scaling. In fact, dozens of other tasks can be simultaneously performed within the same FPGA. This results in an amazingly small signal delay of no more than two video fames from input to output. This provides an obvious advantage when dealing with lip sync problems often found with competitive products. The minimal delay is maintained even when additional processing like windowing or keying is performed since it is all done within the FPGA at relatively the same time. The ability to do such processes in parallel, rather than serially, is a tremendous advantage. Any additional features added into new firmware can also be added using this parallel method, right inside the heart of the video processor.

Delivering More Features for the Price

The ability to include multiple features within the same FPGA provides a definite cost advantage over competitive products simply because it reduces the total parts in CORIO®2 based products. TV One can provide a product with more features at a significantly lower cost. Another important factor with having exclusive proprietary scaling technology is that we can adapt it to suit the ancillary chips in the product's circuitry. This means we can pick and choose the particular DVI receiver, video encoder or other device and make the FPGA suit it instead of the other way around.

Longer Product Life

CORIO®2 has a technological leg up on the competition but also has a huge cost advantage. Firmware upgrades to CORIO®2 products guarantee that TV One products will have a much longer life in the field and is something that the competition does not offer. It is also worth noting that CORIO® is a registered trademark in the UK, Europe and the USA. With each successive product, we want to insure that customers recognize the word CORIO® and associate it with product excellence.

Large Venue Presentation Switchers

These multi-format products offer the ultimate flexibility for switching analog and digital video signals and conversion between video and computer formats and resolutions. They are based on our exclusive CORIO®2 conversion technology and are capable of dealing with virtually any type of analog or digital video signal. CORIO®2 based products provide the benchmark for video image conversion products, coming nearer the ideal of “Anything In - Anything Out” than any other conversion products on the market. Some of the functions include: SDTV/HDTV Conversion, Digital/Analog Conversion, Aspect Ratio Conversion, Up/Down-Conversion, Video Scaling, Multi-Format Seamless Switching, Worldwide Standards Conversion, Chroma/Lumakeying, Picture-in-Picture Windowing, TBC/Frame Synchronization, and much more. The CC-300 CORIOconsole control surface further enhances operation of these Seamless Switchers.

Large Venue Presentation Switchers Comparison Chart

Model	C2-7310	C2-7260	C2-7200 C2-7210	C2-7100 C2-7110	C2-5200	C2-5100	C2-4100	C2-3300	C2-3310	C2-3350	C2-3360
VIDEO INPUTS	11	17	11	9	10	9	3	8		8	
Scalable Signal Types/Connector											
Analog RGB/YPbPr via HD15					2	2	2				
Analog RGB/YPbPr via 5-BNC					1	1	1				
DVI or Analog RGB, YPbPr, YUV via DVI-I	3	3	3	3							
Composite Video via BNC	3	3	3	3	3	3					
YC (S-Video) via 4-Pin Mini-DIN	3	3	3	3	3	3					
SD-SDI via BNC					1						
HD-SDI or SD-SDI via BNC	2	8	2								
Universal CV/YC/YPbPr/YUV/RGBHV via HD15								8		8	
VIDEO OUTPUTS	8	8	8	6	6	5	2	2		2	
Signal Type/Connector											
Video Processing Channels	Dual	Dual	Dual	Dual	Single	Single	Single	Single		Single	
RGB/YPbPr via HD15					1	1	1				
RGB/YPbPr/YUV via 5-BNC					1	1	1				
DVI or Analog RGB, YPbPr,YUV via DVI-I	2	2	2	2				1		1	
Composite Video via BNC	2	2	2	2	1	1					
YC (S-Video) via 4-Pin Mini-DIN	2	2	2	2	1	1					
SD-SDI via BNC					1						
HD-SDI or SD-SDI via BNC	2	2	2								
Universal CV/YC/YPbPr/YUV/RGBHV via HD15								1		1	
STEREO AUDIO INPUTS											
AES3-id Channels from External Connectors	16										
Channels Extracted from SD/HD-SDI Inputs	16										
Channels Processed	32										
Analog Stereo	Optional							0	8	0	8
STEREO AUDIO OUTPUTS											
AES3-id Channels to External Connectors	16										
Channels Embedded into SD/HD-SDI Out	16										
Channels Processed	16										
Analog Stereo	Optional							0	2	0	2
FEATURES											
Video Conversion Direction (Up ▲, Down ▼, Cross ✖)	▲▼✖	▲▼✖	▲▼✖	▲▼✖	▲▼✖	▲▼✖	✖	▲▼✖		▲▼✖	
Video Processing Channels	Dual	Dual	Dual	Dual	Single	Single	Single	Single		Single	
Preview Output	Scaled	Scaled	Scaled	Scaled	Unscaled	Unscaled	Unscaled	Format Converted (RGB)		Format Converted (RGB)	
Preview Type (Full, Next Source)	F	F	F	F	NS	NS	NS	NS		NS	
RS-232 Interface	✓	✓	✓	✓	✓	✓	✓	✓		✓	
Infrared Remote Optional					✓	✓	✓	✓		✓	
IP Interface	✓	✓	✓	✓	Optional	Optional	Optional	✓		✓	
Chromakey, Lumakey, Mix	✓	✓	✓	✓	✓	✓	✓			✓	
Picture-in-Picture (PIP) Windows	2	2	2	2	1	1	1			1	
Transitions (Special Effects, Cut or Fade)	✓	✓	✓	✓						✓	
Transitions by Cut or Fade only					✓	✓	✓	✓			
Edge Blending	✓	✓	✓	✓							
Audio Processing Capability	Internal	External	External	External	External	External	External	Opt	Int	Opt	Int
SD/HD-SDI Audio Embedding and Extraction	Full										
A2-2000		Optional	Optional	Optional	Optional	Optional	Optional				
A2-7300 Series	Optional										
Form Factor	1U 19" Rackmount										

C2-7000 Series – powerful advanced image processing

The C2-7000 Series Video Processors are the most flexible units available and address a wide range of requirements. All products in the family are in reality multiple products in a single box and are at home in broadcast, display and live event environments.

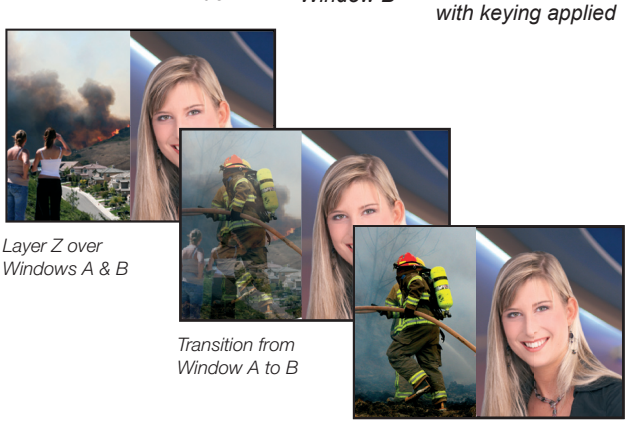
Image Layer Processing ▶

The C2-7000 Series utilizes a multiple layer video display system allowing the stacking order of layers to be altered. For example, in Dual PIP mode there are two image windows (A & B) that can be resized and positioned as desired, a lock source layer* (Z) which can be an active video source, two logo layers (a & b) and a color background. The foreground/background priority of each layer is user assignable over the color background layer. Windows A & B and layer Z can all be utilized as either a key source or background, and have fully adjustable levels of transparency through to opaque. In Independent Mode each scaler may use a different Z layer video source as a background or as a foreground key. In Switcher Mode video may be seamlessly transitioned over the Z layer video or under [behind] a Z layer key. In Dual PIP Mode the video layer priority and keying may be assigned independently for each output.

*only 2 x SDI inputs can be used at a time

Image Keying ▶

The Lock and Mix mode found on select CORIO® processors extends the capabilities of the Z layer to become an unscaled video source or a luminance/chroma key source. As a key source, the Z layer background information can be keyed out and utilizing the image layer processing capability, keyed over one or both windows depending on the mode. The transparency of the keyed Z layer video is fully adjustable. In Independent Mode, each scaler may use a different Z layer video source, in Switcher Mode, video may be seamlessly transitioned under a Z layer key and in Dual PIP Mode the video layer priority may be assigned independently for each output.



◀ Zoom and Shrink

Zooming into any area of the image, while maintaining high quality, is possible because of the unique CORIO®2 video sampling technology. Variable zoom can go up to 10x while Variable Shrink can go down to 10%, both adjustable in one pixel steps. Pixel level position controls allow accurate movement around any desired area and can be controlled from the front panel or the Windows Control Panel. Zooming can be independently applied to the images in the windows.

▼ Automatic 3:2 Pulldown

Our exclusive CORIO®2 conversion technology enables the C2-7000 Series to employ advanced proprietary pixel adaptive motion compensation to smooth out fast moving images. The automatic 3:2 Pull-down efficiently de-interlaces NTSC video originating from 24 fps film. The end result is no image quality penalty when incorporating original film footage into video.

Operational Modes

Switcher Mode

Provides equally powerful Program and Preview channels for live event switching. In addition to previewing inputs before selection, complex functions, such as Chromakeys and Picture-In-Picture, can be previewed for setup totally independent of the Program channel output. There are a variety of seamless transitions from Preview to Program including Cuts, Variable Duration Cross-Fades or Special Effects. Any signal format can be freely mixed with any other.

Independent Mode

Provides the power of two independently functioning products, performing different tasks in one box. Each output can deliver different formats and resolutions simultaneously. For example, a presentation being fed to a high resolution display on Output 1 via DVI can also be fed to a VCR for recording on Output 2 via Composite Video. In a Broadcast environment, the C2-7000 Series can function as two completely independent Analog to HD-SDI Converters, each genlocked to a different reference and each with a different logo or ID keyed in.

Output 1 Output 2

Dual PIP Mode

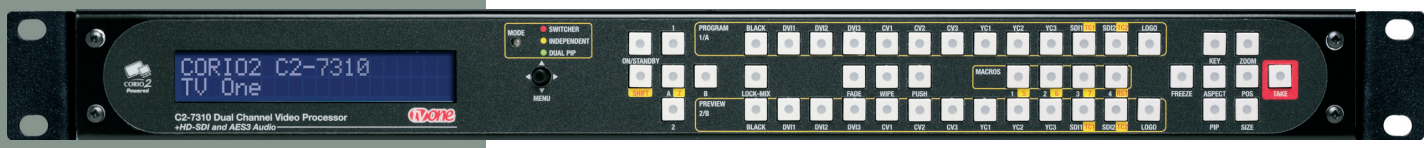
Any video input* can be placed into either of two windows of any size and positioned anywhere on the screen, even overlapping each other with user defined layer priority control. The windows can be placed over any other input as the background. The image in the window can then be switched to another input or a static image from the unit's memory and even zoomed in or out. Keying can be added independently to each window and the background.

*only 2 x SDI inputs can be used at a time

C2-7310

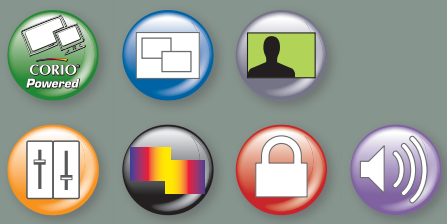
Dual Channel Video Processor

+HD-SDI and AES3 Audio



Key Features C2-7310

- Analog to HD-SDI Up, Down, Cross Conversion
- SD-SDI to HD-SDI Cross Conversion
- Dual Independent Scaling Engines
- Delay free HD-SDI Audio Pass-Thru
- 4:4:4 Sampling for full bandwidth color
- 11 Multi-format Inputs
  3x Composite Video, 3x S-Video,
  3x DVI (also handles RGB, YUV & YPbPr)
  2x SD/HD-SDI
- 2 Independent Output Channels, each with: SD/HD-SDI, Composite Video, YC, DVI-I (also handles RGB, YUV & YPbPr)
- Multiple Conversion & Scaling product
- Multi-format Inputs – Digital and Analog
- Analog RGB to 2048x2048, DVI to 1280x1024 @60Hz
- All HDTV resolutions to 1080p
- Genlock any Video Input to any other
- Seamless Switching - Cuts, Fades or Effects
- Unrestricted Dual PIP
- Chromakeyer & Lumakeyer
- Multiple Layering and Windowing Capability
- Flexible Key Layering - Background Lock Source can be moved to the Foreground
- RS-232 & IP Interface Remote Control
- Ext. Control by Windows Control Panel
- Ext. Control by Third Party Control Systems
- Ext. Hardware Control by Optional CC-300
- CORIO®2 Technology Conversion Engines
- Zoom up to 1000% with full Positioning
- Image Shrink to 10% with full Positioning
- 32 Channels of Stereo Audio Processing
- SD/HD-SDI Audio Embedding
- SD/HD-SDI Audio De-embedding
- Assign Stereo Channels to any Video I/O
- AES Sampling Rates of 24, 32, 48, 96KHz
- DARS Sync Input
- Individual Stereo Channel Processing, including Delay, for all 32 Channels
- Automatic Audio to Video Delay match
- AES3-id directly on 2x HD-44 connectors



C2-7310 2-Channel 11-Input Video-Audio Processor moves well beyond video processing, switching and HD-SDI Up, Down and Cross Conversion by providing the most powerful audio processing in its category. Two independent video processing and scaling engines and two video mixers provide maximum flexibility in handling SD-SDI, HD-SDI, Composite Video, YC (S-Video), YUV Component, YPbPr HD Component) DVI and RGB. At home in both broadcast and presentation environments, the C2-7310 is multiple products in one.

Three operating modes simplify control:

Switcher Mode - Equally powerful Program and Preview channels allow any function (Next Image, PIP, Keying, Logo, etc.) to be set up and previewed, totally independent of the Program output. Transition from Preview to Program is by Cut, Dissolve or Special Effect.

Independent Mode - Provides all the power of two completely independent scalers in one box, each with a full range of features, including PIP, Keying, etc. Each output can deliver different formats and resolutions simultaneously. For example, a presentation being fed to a high resolution display on Output 1 via DVI can be fed to a VCR for recording on Output 2 via Composite Video. Two projectors may be edge blended from one unit.

Dual PIP Mode - Any input can be placed into either of two windows of any size and positioned anywhere on the screen, even overlapping, with user defined layer priority control. The windows can be placed over any other input or a static image from memory as the background. The window's image can then be seamlessly switched, faded or zoomed. Keying can be independently applied to each window.

Powerful Features – The 4:4:4 sampling provides full bandwidth color which allows precise keying, including Transparent (Soft) Keys. The 11 video inputs can accommodate signals (either analog or digital, video or computer) in a variety of formats and resolutions. It handles all known HDTV formats plus any analog RGB resolution up to 2048x2048 - and new resolutions can be easily added. Each of the two independent outputs delivers a wide range of digital and analog video signals.

In addition to SD and HD television formats, the C2-7310 output signal format flexibility assures that the Native Resolution of virtually any Digital Display can be matched. Using the software based resolution calculator, new or unusual resolutions can be instantly added to the menu. Signal parameter adjustments can be made for each video input and are stored in individual non-volatile memories. A Windows tool is provided to allow user programming of multiple internal test cards and logos into non-volatile memory. The test cards facilitate ease of setup, and the logo memory allows the unit to be used as a Logo Inserter. Advanced motion compensation (NTSC and PAL) is employed to smooth out fast moving images and its automatic 3:2 Pull-down detection efficiently de-interlaces video from 24 fps film (NTSC).

Setup and Control is extremely flexible. Local control is provided by the 48-button CORIO® EXP Front Panel designed expressly for handling live events. These buttons plus the multi-way navigation control and integrated LCD bring all the control needed for quick and easy access right to the front panel. Remote control via RS-232 or Ethernet (IP) is standard. Macros and presets are provided to facilitate complex command sequences which can be recalled at the touch of a button. The Windows Control Panel affords complete control of the unit. The CC-300 CORIOconsole option takes control to the next level by providing the C2-7000 series with the operational feel of a traditional Video Production Switcher.

Edge Blending is a standard feature of the C2-7000 series. Because of the ability to 'feather' any or all of the edges, multiple images can be aligned vertically, horizontally, or both to create unusual displays. Since it is dual channel, only one unit is required to blend two edges. Using multiple C2 units, a large number of images can be blended. Edge Blending is not limited to high resolution RGB computer images, but can be applied to any input. Gamma correction is employed to compensate for many of the problems faced when blending between projectors. Special preparation of the video in advance is not necessary, since all processing is done within the unit.

C2-7310 (Video) Specifications

Video Inputs

Composite Video	3x via BNC Connector
YC (S-Video)	3x via 4-PIN Mini-DIN Connector
DVI-I (Note 1)	3x via DVI-I Connector
SDI (SD or HD-SDI)	2x via BNC

Genlock Input

Reference Signal	Any of the Video Inputs

Independent Output 1

Composite Video	1x via BNC Connector
YC (S-Video)	1x via 4-PIN Mini-DIN Connector
DVI-I (Note 1)	1x via DVI Connector
SDI (SD or HD-SDI)	1x via BNC

Independent Output 2

Composite Video	1x via BNC Connector
YC (S-Video)	1x via 4-PIN Mini-DIN Connector
DVI-I (Note 1)	1x via DVI Connector
SDI (SD or HD-SDI)	1x via BNC

Input/Output Range

Computer Resolutions	Analog: Up to 2048x2048 DVI: Up to 1280x1024 @ 60Hz/1080p30
Max Vert Refresh Rate	250Hz
Max Horiz Frequency	150KHz
HDTV Resolutions	All thru 1080p
Interlace Support	Progressive and Interlaced
Television Standards	NTSC 3.58, 4.43, PAL-B,G,I ,D, H, PAL-M, PAL-N & SECAM (In Only)
SDI	SD-SDI or HD-SDI

Input RGB Sync

Type	RGBHV, RGBS, RGsB
Level / Impedance	TTL, 10KΩ
Polarity	Positive or Negative
Maximum Level	5Vp-p

Output RGB Sync

Type	RGBHV, RGBS,RGsB
Level / Impedance	5Vp-p, 220Ω
Polarity	Positive or Negative

Control Methods

Local Front Panel	48 Button EXP front panel +LED and LCD
RS-232 Interface	DB-9 Male Connector
IP Interface	RJ45 Connector

Mechanical

Desktop Case (HWD)	44x420x200mm (1.75"x17"x7.9")
With Rack Ears (HWD)	44x482x200mm (1.75"x19"x7.9")
Weight (Net)	3.8 kg (8.4 lbs)

Environmental

Operating Temperature	4° to +45° C (+40° to +113° F)
Operating Humidity	10% to 85%, Non-condensing
Storage Temperature	0° to +60° C (32° to +140° F)
Storage Humidity	10% to 85%, Non-condensing

Regulatory Approvals

Video Scaler Unit	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Warranty

Limited Warranty	2 Years Parts and Labor

SDI Jitter

SMPTE259M-C	(270Mbps: 525/625 Line) Jitter 0.070 +/-0.01 UI
SMPTE292M	(1.485/1.4835Gpbs: 720p, 1035i, 1080i,1080p) Jitter 0.176 +/-0.02 UI

General

Image Size & Position	AutoSet or Manual
Image Zoom Range	Continuous to 10x
Image Shrink Range	Continuous to 10%
Image Mirroring	Horizontal and/or Vertical
Image Freeze	Full Frame
Video Sampling Rate	108MHz
Resolution Memory	Approximately 1,000 Definable
Firmware Memory	Flash, Upgradeable via RS-232
Flicker Filter	4-Level Vertical
Picture-in-Picture	2 Windows + Background from any 3 Video Inputs
Number PIP Windows	2 in Dual PIP Mode 1 in Switcher & Ind. Modes
Video I/O Impedance	75Ω
Video Decoder	9-bit Digital
Comb Filter Decoding	Adaptive
De-Interlacing (PAL-NTSC)	Pixel-level Motion Adaptive
Film Mode (NTSC)	3:2 Pull Down Detection
Video Encoder	10-bit Digital
Digital Sampling	24-bit, 8-bits per R, G and B
Colors	16.7 Million
Video Scaling Engine	Proprietary CORIO®2
Internal Format	4:4:4 YUV
Internal Test Patterns	User Defined
LCD Panel	24x2 Character
Logo Inserter	Flash Programmable
Proc Amp Adjustments	Brightness, Contrast, Saturation, & Hue for CV & SV Inputs, plus Video Level for RGB Input
Proc Amp Memory	Settings for each Video Input

Power Requirement

Internal Power Supply	100-240VAC, 47-63Hz, 50W

Accessories Included

1x AC Power Cord	6' (2m) US, UK or Euro
1 DVI-A to 5 BNC	6' (2m) DVI-A to 5 BNC
1x Operations Manual	
1x Rackmount Kit	2 Ears and 4 Screws

Product Item Number

C2-7310	2-Channel Video-Audio Processor w/HD-SDI I/O

Optional Audio Breakout Units

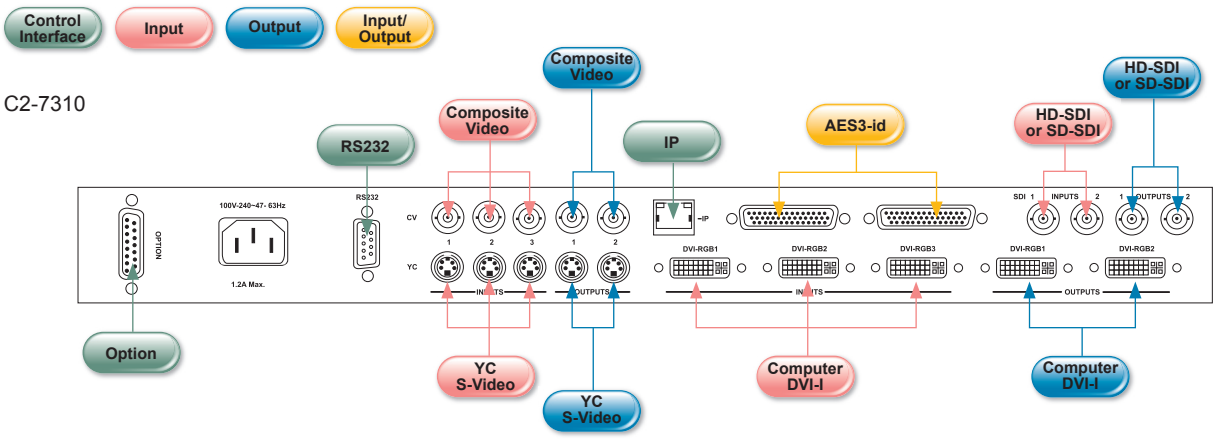
A2-7312	16 AES3-id (8-in,8-out) on BNC's
A2-7302	16 AES (8-in,8-out) on XLR's
A2-7342	8 Analog Stereo (4-in, 4-out) on XLR's
A2-7322	16 Analog Stereo (8-in, 8-out) on Terminal Strips

Optional Accessories

1x Control Software	Downloadable from website
CC-300	Hardware Control Panel
RM110	Long arm rack ears for 24" to 32" deep racks

Notes

(1) DVI-I Input/Output connectors also accommodate RGBHV, RGBS, RGsB, YUV & YPbPr signal formats.



C2-7310

Dual Channel Video Processor

+HD-SDI and AES3 Audio (Continued)

Integral Audio Processing of the C2-7310 allows the user to embed, de-embed, delay, mix, route and sample rate convert an astonishing 32 channels of Digital Stereo Audio to satisfy even the most challenging requirements.

The superior quality of the C2-7310 means that the full 16 channels of Digital Stereo Audio at 48KHz embedded within the two SD/HD-SDI inputs can be de-embedded and processed along with a further 16 channels of AES-3id audio, frequency between 24 to 96KHz, that can be input via the two rear panel HD-44 connectors, giving a total of 32 Digital Stereo Audio inputs processed simultaneously. Each Stereo Audio channel can be delayed by up to 5 seconds using exceptionally fine delay adjustment and the gain can be altered to anywhere between 0 and 800%.

A supremely high-quality sample rate conversion is also employed by the unit which enables the unit to increase or decrease the sample frequency on each audio channel as required while insuring optimum audio output, alternatively all of the AES audio channels can be synced to a DARS. Each Stereo Audio output can also be processed by down-mixing up to 3 uniquely delayed and sample rate converted Stereo Audio inputs and routed to any audio output required. The C2-7310 also automatically adjusts audio delay to match the video processing delay.

Up to 16 AES Stereo Audio channels can be output at a frequency of 48KHz or DARS synchronized using the two HD-44 connectors on the back of the unit. Each of the two SDI outputs on the C2-7310 can have up to 8 channels of 48KHz Stereo Audio embedded in the video signal.

Due to the highly flexible internal audio routing, these 32 stereo input channels are not restricted for use within the HD-SDI signal, but can be assigned to and will then follow any of the other Composite, Component, S-Video, RGB or DVI inputs and outputs.

The 2x HD-44 connectors support AES-3id audio format directly and a range of optional breakout units are available to interface to a wide variety of digital and analog audio formats. Each of these optional breakout units connect to a single of the C2-7310's HD-44 connectors, so a total of two units may be simultaneously attached to provide maximum interface flexibility.

C2-7310 (Audio) Specifications

Audio Inputs

Digital Stereo	16x via HD-44 Connectors (Note 1) 16x via SDI De-Embedding
DARs Reference	2x via HD-44 Connectors, AES3-id or word clock
Format	AES3-id
Assignable	to any of the 11 Video Inputs
Input Level	0.8V to 1.2V p-p
Impedance	75Ω
Sample Rate	24, 32, 48, 96 KHz

Audio Outputs

Digital Stereo	16x via HD-44Connectors (Note 1)
Format	AES3-id
Assignable	to any of the 8 Video Outputs
Output Level	1V p-p
Impedance	75Ω
Sample Rate	48KHz
Rise/Fall Time	Between 30 and 44ns
Jitter	TBA
AES Noise (THd+N)	>100db
SDI Noise (THd+N)	>100db
DC Offset	<50mV

SDI Audio Embedding

Format	SD or HD-SDI
Number of Channels	Up to 8 SDI Stereo Channels
Sample Rate	48 KHz

SDI Audio Extraction

Format	SD or HD-SDI
Number of Channels	Up to 8 SDI Stereo Channels
Sample Rate	48 Hz

Audio Control and Routing

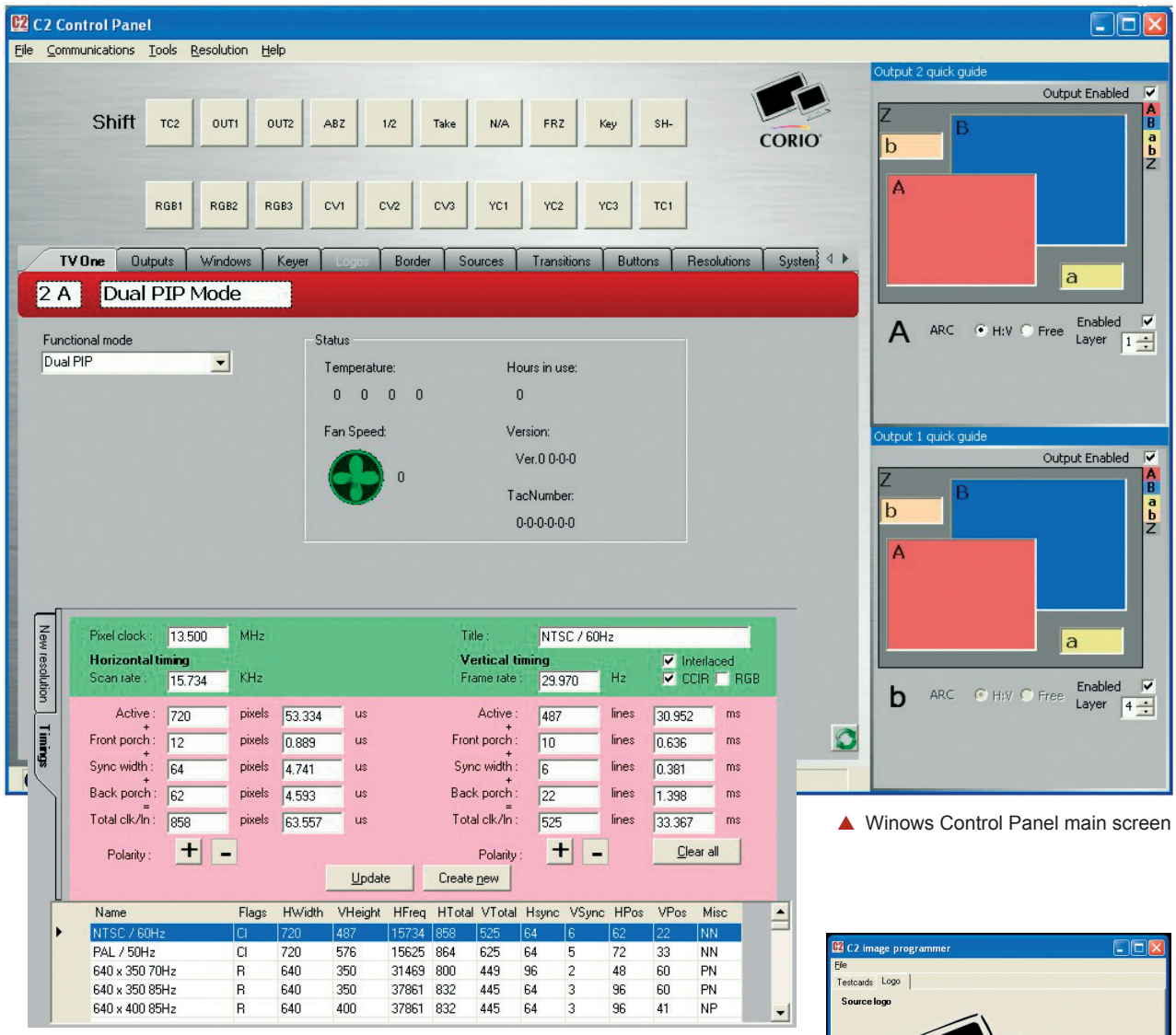
Selectable Routing	Each AES3-id or De-Embedded SDI audio channel can be assigned to any of the 11 Video inputs
Adjustable Audio Delay	0-5 Sec for each Stereo Channel
Level Adjustments	0-800% for each Stereo Channel
Muting Control	for each Stereo Channel
Balance Adjustments	for each Stereo Channel
Audio Follow Video	Including Mixing and Fading during C2-7310 Switcher Mode
Synchronization	DARS

Notes

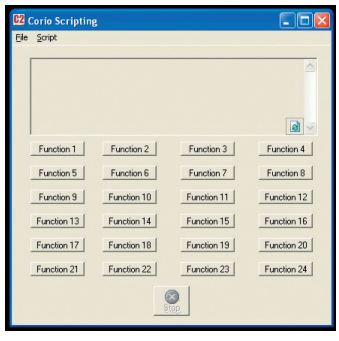
(1) Each HD-44 Connector contains 8 AES3-id Stereo Audio Channels In and 8 AES3-id Stereo Channels Out and a DARS reference. 1 or 2 A2-73XX breakout units may be simultaneously connected.

Windows Control Panel

The Windows Control Panel is a powerful application that offers full control of the C2-7000 Series. The application provides access to all the functions available on the connected unit. The functions are controlled by slide bars, buttons and selection boxes. Learning the user interface is simple since all functions are available on tabs which match the menus found on the units. When using multiple windows, a graphical viewer is shown indicating the layout of the windows and logos. It also provides size, position and layer adjustments by simply dragging screen objects in real time.



▲ Winows Control Panel main screen



▲ Resolution Editor

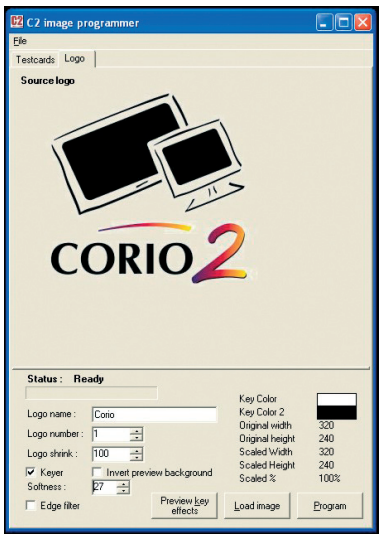
One of the most powerful features of CORIO®2 technology is the ability to create any custom resolution. These are created from either a full video timing specification or from the most basic information i.e. image width, height and refresh rate.

Image Loader

The Image Loader application is integrated into the Windows Control Panel. This will program and store the logos and testcards. It will also scale the testcards and key up to two separate colors for the logos.

▲ Scripting Tool

An integrated scripting tool provides a simplified interface for programming complex actions assignable to user selectable buttons, which can be recalled at anytime.



▲ Image loader tool

A2-7300 Series

Audio Format Converters

Key Features A2-7300 Series

Key Audio Features of the A2-7302

- 8 Balanced AES Input on XLR connectors
- 8 Balanced AES Output on XLR connectors
- DARS AES3-id Input on a BNC connector

Key Audio Features of the A2-7312

- 8 AES3-id Input on 75Ω BNC Connectors
- 8 AES3-id Output on 75Ω BNC Connectors
- DARS AES3-id Input on a BNC Connector

Key Audio Features of the A2-7322

- 8 Balanced/Unbalanced Stereo Input on Terminals
- 8 Balanced/Unbalanced Stereo Output on Terminals
- DARS AES3-id Input on a BNC connector
- Adjustable sample rates 32, 44.1, 48, 96KHz

Key Audio Features of the A2-7342

- 4 Balanced Stereo In on XLR connectors
- 4 Balanced Stereo Out on XLR connectors
- DARS AES3-id In on a BNC Connector
- Adjustable sample rates 32, 44.1, 48, 96KHz

A2-7300 Series units are high quality audio format converters designed primarily to provide maximum format flexibility for the C2-7310 HD Audio/Video Processor's audio inputs and outputs. The C2-7310 provides AES3-id audio I/O via two HD-44 Connectors. Any two of the A2-7300 models, or two of the same model, can connect to these connectors to bring the AES3-id signals out to BNC connectors or to change the audio format completely. All of the AES audio channels can be synchronized to a DARS reference when connected to the C2-7310 via any of the A2-7300 units. Additionally, the A2-7300 units may be used in conjunction with one another, without the C2-7310, to provide bi-directional analog/digital or AES3/AES3-id conversion.

A2-7302 provides an HD-44 interface to 16 AES (8-in/8-out) on XLR connectors and a DARS reference input on a BNC connector. This unit contains eight balanced AES to AES3-id converters, plus eight AES3-id to balanced AES converters to provide AES I/O.

A2-7312 provides an HD-44 interface to 16 AES3-id (8-in/8-out) and a DARS reference input on BNC's mounted on a 1RU panel via a 1.5 meter (4.5') interconnect cable. The connectors may be separated from the panel if system wiring requirements dictate.

A2-7322 provides an HD-44 to 16 Analog Stereo (8-in/8-out), balanced or unbalanced, on terminals and a DARS reference input on a BNC connector. This unit contains eight high quality stereo analog to AES3-id converters, plus eight high quality AES3-id to stereo analog converters. The audio sample rate is user adjustable in stand alone mode using DIP switches or selectable from the C2-7310 menu when connected.

A2-7342 provides an HD-44 to 8 Analog Stereo (4-in/4-out) on XLR's and a DARS reference input on a BNC connector. This unit contains four high quality stereo analog to AES3-id converters, plus four high quality AES3-id to stereo analog. The audio sample rate is user adjustable in stand alone mode using DIP switches or selected from the C2-7310 menu when connected.

A2-7300 Series Specifications

A2-7302 Format Converter

Interface to C2-7310	via HD-44 Connector
Audio Inputs	
Digital Stereo	8 Channels AES3 on 8x XLR
DARS Reference	75Ω BNC
Audio Output	
Digital Stereo	8 Channels AES3 on 8x XLR
Signal	
Voltage Level	TBA
Impedance	110Ω
Mechanical	
Size w/Rack Ears (HWD)	44x482x200mm (1.75"x19"x7.9")
Weight	TBA
Regulatory Approvals	
Breakout Unit	FCC, CE, RoHS

A2-7322 Format Converter

Interface to C2-7310	via HD-44 Connector
Audio Inputs	
Analog Stereo	8 Channels Stereo on Terminals
DARS Reference	75Ω BNC
Audio Output	
Analog Stereo	8 Channels Stereo on Terminals
Signal	
Voltage Level	TBA
Impedance	600Ω Balanced
Mechanical	
Size w/Rack Ears (HWD)	44x482x200mm (1.75"x19"x7.9")
Weight	TBA
Power Requirement	
External Power Supply	12VDC @ 1A
Regulatory Approvals	
Breakout Unit	FCC, CE, RoHS
Power Supply	UL, CUL, CE, PSE, GS, RoHS

A2-7312 Breakout Unit

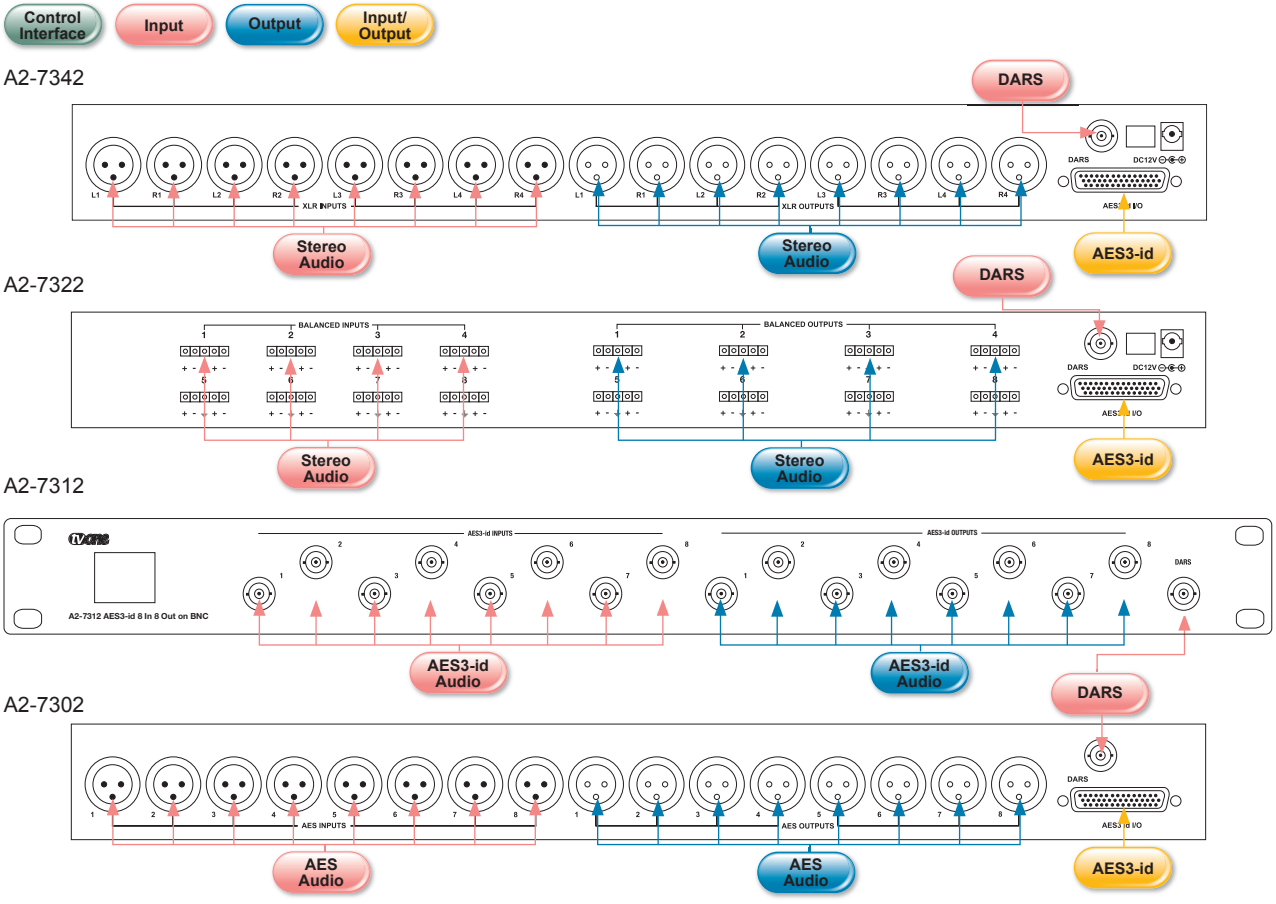
Interface to C2-7310	via HD-44 Connector
Audio Inputs	
Digital Stereo	8 Channels AES3-id on 8 x BNC
DARS Reference	75Ω BNC
Audio Output	
Digital Stereo	8 Channels AES3-id on 8 x BNC
Signal	
Voltage Level	1V p-p
Impedance	75Ω
Mechanical	
Size (HW)	44x482mm (1.75"x19")
Weight	TBA
Regulatory Approvals	
Breakout Unit	FCC, CE, RoHS

A2-7342 Format Converter

Interface to C2-7310	via HD-44 Connector
Audio Inputs	
Analog Stereo	4 Channels Stereo on 8x XLR
DARS Reference	75Ω BNC
Audio Output	
Analog Stereo	4 Channels Stereo on 8x XLR
Signal	
Voltage Level	TBA
Impedance	600Ω Balanced
Mechanical	
Size w/Rack Ears (HWD)	44x482x200mm (1.75"x19"x7.9")
Weight	TBA
Power Requirement	
External Power Supply	12VDC @ 1A
Regulatory Approvals	
Breakout Unit	FCC, CE, RoHS
Power Supply	UL, CUL, CE, PSE, GS, RoHS

Optional Accessories

RM110	Long arm rack ears for 24" to 32" deep racks



C2-7260

Dual Channel Video Processor

+HD-SDI

Key Features C2-7260

- Analog to HD-SDI Up, Down, Cross Conversion
- SD-SDI to HD-SDI Cross Conversion
- Dual Independent Scaling Engines
- Delay Free Audio Pass-thru for Lock Source SDI
- 4:4:4 Sampling for Full Bandwidth Color
- 17 Multi-format Inputs:
  3x CV, 3x YC, 8x SD/HD-SDI, 3x DVI (also handles RGB, YUV & YPbPr)
- Two Independent Output Channels, each with: SD/HD-SDI, CV, YC, DVI-I (RGB, YUV, YPbPr)
- Multiple Conversion and Scaling Product
- Multi-format Inputs – Digital and Analog
- Analog RGB to 2048x2048, DVI to 1280x1024 @60Hz
- All HDTV resolutions to 1080p
- Genlock any Video Input to any Other
- Seamless Switching - Cuts, Fades or Effects
- Unrestricted Dual PIP
- Chromakeyer & Lumakeyer
- Multiple Layering and Windowing Capability
- Flexible Key Layering - Background Lock Source can be moved to the Foreground
- RS-232 and IP Interface Remote Control
- Ext. Control by Windows Control Panel
- Ext. Control by Third Party Control Systems
- Ext. Hardware Control by Optional CC-300
- CORIO®2 Technology Conversion Engines
- Zoom up to 10x with full Positioning
- Image Shrink to 10% with full Positioning

C2-7260 Dual Channel 17-Input Video Processor moves well beyond video processing and switching, providing HD-SDI Up, Down and Cross Conversion and many additional features. Two independent video processing and scaling engines and two video mixers provides maximum flexibility in handling SD and HD-SDI, Composite, YC, YUV Component, YPbPr HD Component, DVI and RGB. The unit's eight HD-SDI inputs mean that it is at home in broadcast as well as presentation environments.

Three operating modes simplify control:

Switcher Mode - Equally powerful Program and Preview channels allow any function (Next Image, PIP, Keying, Logo, etc.) to be set up and previewed, totally independent of the Program output. Transition from Preview to Program is by Cut, Dissolve or Special Effect.

Independent Mode - Provides all the power of two completely independent scalers in one box, each with a full range of features, including PIP, Keying, etc. Each output can deliver different formats and resolutions simultaneously. For example, a presentation being fed to a high resolution display on Output 1 via DVI can be fed to a VCR for recording on Output 2 via Composite Video. Two projectors may be edge blended from one unit.

Dual PIP Mode - Any input can be placed into either of two windows of any size and positioned anywhere on the screen, even overlapping, with user defined layer priority control. The windows can be placed over any other input or a static image from memory as the background. The window's image can then be seamlessly switched, faded or zoomed. Keying can be independently applied to each window.

Powerful Features – The 4:4:4 sampling provides full bandwidth color which allows precise keying, including Transparent (Soft) Keys. The 17 video inputs can accommodate signals (either analog or digital, video or computer) in a variety of formats and resolutions. It handles all known HDTV formats plus any analog RGB resolution up to 2048x2048 - and new resolutions can be easily added. Each of the two independent outputs delivers a wide range of digital and analog video signals.

In addition to SD and HD television formats, the C2-7260 output signal format flexibility assures that the Native Resolution of virtually any Digital Display can be matched. Using the software based resolution calculator, new or unusual resolutions can be instantly added to the menu. Signal parameter adjustments can be made for each video input and are stored in individual non-volatile memories. A Windows tool is provided to allow user programming of multiple internal test cards and logos into non-volatile memory. The test cards facilitate ease of setup, and the logo memory allows the unit to be used as a Logo Inserter. Advanced motion compensation (NTSC and PAL) is employed to smooth out fast moving images and its automatic 3:2 Pull-down detection efficiently de-interlaces video from 24 fps film (NTSC).

Setup and Control is extremely flexible. Local control is provided by the 48-button CORIO® EXP Front Panel designed expressly for handling live events. These buttons plus the multi-way navigation control and integrated LCD bring all the control needed for quick and easy access right to the front panel. Remote control via RS-232 or Ethernet (IP) is standard. Macros and presets are provided to facilitate complex command sequences which can be recalled at the touch of a button. The Windows Control Panel affords complete control of the unit. The CC-300 CORIOconsole option takes control to the next level by providing the C2-7000 series with the operational feel of a traditional Video Production Switcher.

Edge Blending is a standard feature of the C2-7000 series. Because of the ability to 'feather' any or all of the edges, multiple images can be aligned vertically, horizontally, or both to create unusual displays. Since it is dual channel, only one unit is required to blend two edges. Using multiple C2 units, a large number of images can be blended. Edge Blending is not limited to high resolution RGB computer images, but can be applied to any input. Gamma correction is employed to compensate for many of the problems faced when blending between projectors. Special preparation of the video in advance is not necessary, since all processing is done within the unit.

C2-7260 Specifications

Video Inputs

Composite Video	3x via BNC Connector
YC (S-Video)	3x via 4-PIN Mini-DIN Connector
DVI-I (Note 1)	3x via DVI-I Connector
SDI (SD or HD-SDI)	8x via BNC (Note 3)

Genlock Input

Reference Signal	Any of the Video Inputs

2x Independent Outputs, each with:

Composite Video	1x via BNC Connector
YC (S-Video)	1x via 4-PIN Mini-DIN Connector
DVI-I (Note 1)	1x via DVI-I Connector
SDI (SD or HD-SDI)	1x via BNC

Input/Output Range

Computer Resolutions	Analog: Up to 2048x2048, DVI: Up to 1280x1024 @ 60Hz/1080p30
Max Vert Refresh Rate	250Hz
Max Horiz Frequency	150KHz
HDTV Resolutions	All thru 1080p
Interlace Support	Progressive and Interlaced
Television Standards	NTSC 3.58, 4.43, PAL-B,G,I ,D, H, PAL-M, PAL-N & SECAM (In Only)
SDI	SD-SDI or HD-SDI

Input RGB Sync

Type	RGBHV, RGBS, RGsB
Level / Impedance	TTL, 10KΩ
Polarity	Positive or Negative
Maximum Level	5Vp-p

Output RGB Sync

Type	RGBHV,RGsB
Level / Impedance	5Vp-p, 220Ω
Polarity	Positive or Negative

YPbPr Input/Output Sync

Type	Tri-Level

Control Methods

Front Panel	48 Buttons + LED and LCD
RS-232 Interface	DB-9 Male Connector
IP Interface	RJ45 Connector

Mechanical

Desktop Case (HWD)	44x432x201mm (1.75"x17"x7.9")
With Rack Ears (HWD)	44x483x201mm (1.75"x19x7.9")
Weight (Net)	3.4 kg (7.48 lbs)

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

Regulatory Approvals

Video Scaler Unit	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Warranty

Limited Warranty	2 Years Parts and Labor

General

Image Size & Position	AutoSet or Manual
Image Zoom Range	Continuous to 10x
Image Shrink Range	Continuous to 10%
Image Mirroring	Horizontal and/or Vertical
Image Freeze	Full Frame
Video Sampling Rate	108MHz
Resolution Memory	Approximately 1,000 Definable
Firmware Memory	Flash, Upgradeable via RS-232
Flicker Filter	4-Level Vertical
PIP	2 Windows and Background from any 3 Video Inputs
Number PIP Windows	2 in Dual PIP Mode 1 in Switcher & Ind. Modes
Video I/O Impedance	75Ω
Video Decoder	9-bit Digital
Comb Filter Decoding	Adaptive
De-Interlacing (PAL-NTSC)	Pixel-level Motion Adaptive
Film Mode (NTSC)	3:2 Pull Down Detection
Video Encoder	10-bit Digital
Digital Sampling	24-bit, 8-bits per R, G and B
Colors	16.7 Million
Video Scaling Engine	Proprietary CORIO®2
Internal Format	4:4:4 YUV
Internal Test Patterns	User Defined
LCD Panel	24x2 Character
Logo Inserter	Flash Programmable
Proc Amp Adjustments	Brightness, Contrast, Saturation, & Hue for CV & YC Inputs, plus Video Level for RGB Input
Proc Amp Memory	Settings for each Video Input

SDI Jitter

SMPTE259M-C	(270Mbps: 525/625 Line) Jitter 0.070 +/-0.01 UI
SMPTE292M	(1.485/1.4835Gpbs: 720p, 1035i, 1080i, 1080p) Jitter 0.176 +/-0.02 UI

Power Requirement

Internal Power Supply	100-240VAC, 47-63Hz, 50W

Accessories Included

2x Adapters	DVI to HD-15F Adapters
1x AC Power Cord	US, UK or Euro
1x Operations Manual	
1x Rackmount Kit	2 Ears and 4 Screws

Product Item Number

C2-7260	Version with 8 HD-SDI Inputs

Optional Accessories

CC-300	CORIOconsole
A2-2000	Audio Switcher
RM110	Long arm rack ears for 24" to 32" deep racks
1x Control Software	Downloadable from website

Audio Switching (Optional A2-2000) Note 2

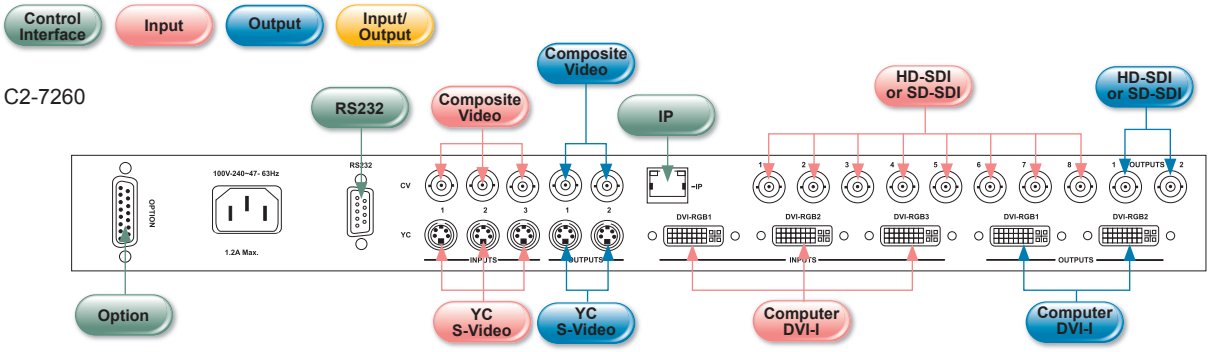
Stereo Inputs	10x Balanced and Unbalanced
Program Output	1x Balanced and Unbalanced
Preview Output	1x Balanced and Unbalanced
Connectors per I/O	2x RCA for Unbalanced

Note

(1) DVI-I Input/Output connectors also accommodate RGBHV, RGBS (In Only), RGsB, YUV & YPbPr formats.

(2) A2-2000 is controlled from the C2-7260 and provides Audio Follow Video or Breakaway.

(3) Only 2 of the 8 SD/HD-SDI sources may be used at the same time. For example, in the Dual PIP Mode, if 2 HD-SDI sources are used for the windows, the image for the background cannot be another HD-SDI source



C2-7210, C2-7200

Dual Channel Video Processors

+HD-SDI

Key Features C2-7210, C2-7200

- Analog to HD-SDI Up, Down, Cross Conversion
- SD-SDI to HD-SDI Cross Conversion
- Dual Independent Scaling Engines
- Delay Free Audio Pass-thru for Lock Source SDI
- 4:4:4 Sampling for Full Bandwidth Color
- 11 Multi-format Inputs:
  3x CV, 3x YC, 2x SD/HD-SDI, 3x DVI (also handles RGB, YUV & YPbPr)
- Two Independent Output Channels, each with: SD/HD-SDI, CV, YC, DVI-I (RGB, YUV, YPbPr)
- Multiple Conversion and Scaling Product
- Multi-format Inputs – Digital and Analog
- Analog RGB to 2048x2048, DVI to 1280x1024 @60Hz
- All HDTV resolutions to 1080p
- Genlock any Video Input to any Other
- Seamless Switching Cuts, Fades or Effects
- Unrestricted Dual PIP
- Chromakeyer & Lumakeyer
- Multiple Layering and Windowing Capability
- Flexible Key Layering - Background Lock Source can be moved to the Foreground
- RS-232 and IP Interface Remote Control
- Ext. Control by Windows Control Panel
- Ext. Control by Third Party Control Systems
- Ext. Hardware Control by Optional CC-300
- Choice of Front Panels to Suit Application:
  48 Button CORIO® EXP Panel - C2-7210
  10 Programmable Buttons + Shift - C2-7200
- CORIO®2 Technology Conversion Engines
- Zoom up to 10x with full Positioning
- Image Shrink to 10% with full Positioning

C2-7210 Dual Channel 11-Input Video Processor moves well beyond video processing and switching, providing HD-SDI Up, Down and Cross Conversion and many additional features. Two independent video processing and scaling engines and two video mixers provides maximum flexibility in handling SD and HD-SDI, Composite, YC, YUV Component, YPbPr HD Component, DVI and RGB. The unit's two HD-SDI inputs mean that it is at home in broadcast as well as presentation environments.

Three operating modes simplify control:

Switcher Mode - Equally powerful Program and Preview channels allow any function (Next Image, PIP, Keying, Logo, etc.) to be set up and previewed, totally independent of the Program output. Transition from Preview to Program is by Cut, Dissolve or Special Effect.

Independent Mode - Provides all the power of two completely independent scalers in one box, each with a full range of features, including PIP, Keying, etc. Each output can deliver different formats and resolutions simultaneously. For example, a presentation being fed to a high resolution display on Output 1 via DVI can be fed to a VCR for recording on Output 2 via Composite Video. Two projectors may be edge blended from one unit.

Dual PIP Mode - Any input can be placed into either of two windows of any size and positioned anywhere on the screen, even overlapping, with user defined layer priority control. The windows can be placed over any other input or a static image from memory as the background. The window's image can then be seamlessly switched, faded or zoomed. Keying can be independently applied to each window.

Powerful Features – The 4:4:4 sampling provides full bandwidth color which allows precise keying, including Transparent (Soft) Keys. The 17 video inputs can accommodate signals (either analog or digital, video or computer) in a variety of formats and resolutions. It handles all known HDTV formats plus any analog RGB resolution up to 2048x2048 - and new resolutions can be easily added. Each of the two independent outputs delivers a wide range of digital and analog video signals.

In addition to SD and HD television formats, the C2-7210 output signal format flexibility assures that the Native Resolution of virtually any Digital Display can be matched. Using the software based resolution calculator, new or unusual resolutions can be instantly added to the menu. Signal parameter adjustments can be made for each video input and are stored in individual non-volatile memories. A Windows tool is provided to allow user programming of multiple internal test cards and logos into non-volatile memory. The test cards facilitate ease of setup, and the logo memory allows the unit to be used as a Logo Inserter. Advanced motion compensation (NTSC and PAL) is employed to smooth out fast moving images and its automatic 3:2 Pull-down detection efficiently de-interlaces video from 24 fps film (NTSC).

Setup and Control is extremely flexible. Local control is provided by the 48-button CORIO® EXP Front Panel designed expressly for handling live events. These buttons plus the multi-way navigation control and integrated LCD bring all the control needed for quick and easy access right to the front panel. Remote control via RS-232 or Ethernet (IP) is standard. Macros and presets are provided to facilitate complex command sequences which can be recalled at the touch of a button. The Windows Control Panel affords complete control of the unit. The CC-300 CORIOconsole option takes control to the next level by providing the C2-7000 series with the operational feel of a traditional Video Production Switcher.

C2-7200 provides the same features and functions of the C2-7210 with a different front panel. This version has ten programmable buttons and a shift key with removable key caps for flexible labeling. It is intended for applications where custom or restricted access to functions is desirable. The programmability of the buttons lets the user setup specific functions so they can be accessed directly from the front panel buttons.

C2-7210, C2-7200 Specifications

Video Inputs

Composite Video	3x via BNC Connector
YC (S-Video)	3x via 4-PIN Mini-DIN Connector
DVI-I (Note 1)	3x via DVI-I Connector
SDI (SD or HD-SDI)	2x via BNC

Genlock Input

Reference Signal	Any of the Video Inputs

2x Independent Outputs, each with:

Composite Video	1x via BNC Connector
YC (S-Video)	1x via 4-PIN Mini-DIN Connector
DVI-I (Note 1)	1x via DVI-I Connector
SDI (SD or HD-SDI)	1x via BNC

Input/Output Range

Computer Resolutions	Analog: Up to 2048x2048 DVI: Up to 1280x1024 @ 60Hz/1080p30
Max Vert Refresh Rate	250Hz
Max Horiz Frequency	150KHz
HDTV Resolutions	All thru 1080p
Interlace Support	Progressive and Interlaced
Television Standards	NTSC 3.58, 4.43, PAL-B,G,I ,D, H, PAL-M, PAL-N & SECAM (In Only)
SDI	SD-SDI or HD-SDI

Input RGB Sync

Type	RGBHV, RGBS, RGsB
Level / Impedance	TTL, 10KΩ
Polarity	Positive or Negative
Maximum Level	5Vp-p

Output RGB Sync

Type	RGBHV,RGsB
Level / Impedance	5Vp-p, 220Ω
Polarity	Positive or Negative

YPbPr Input/Output Sync

Type	Tri-Level

Control Methods

Front Panel – C2-7200	10x2 Programmable Buttons +LED, Rotary Selector and LCD
Front Panel – C2-7210	48 Buttons + LED and LCD
RS-232 Interface	DB-9 Male Connector
IP Interface	RJ45 Connector

Mechanical

Desktop Case (HWD)	44x432x201mm (1.75"x17"x7.9")
With Rack Ears (HWD)	44x483x201mm (1.75"x19x7.9")
C2-7210 Weight (Net)	3.16 kg (6.95 lbs)
C2-7200 Weight (Net)	3.16 kg (6.95 lbs)

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

Regulatory Approvals

Video Scaler Unit	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Warranty

Limited Warranty	2 Years Parts and Labor

General

Image Size & Position	AutoSet or Manual
Image Zoom Range	Continuous to 10x
Image Shrink Range	Continuous to 10%
Image Mirroring	Horizontal and/or Vertical
Image Freeze	Full Frame
Video Sampling Rate	108MHz
Resolution Memory	Approximately 1,000 Definable
Firmware Memory	Flash, Upgradeable via RS-232
Flicker Filter	4-Level Vertical
PIP	2 Windows and Background from any 3 Video Inputs
Number PIP Windows	2 in Dual PIP Mode 1 in Switcher & Ind. Modes
Video I/O Impedance	75Ω
Video Decoder	9-bit Digital
Comb Filter Decoding	Adaptive
De-Interlacing (PAL-NTSC)	Pixel-level Motion Adaptive
Film Mode (NTSC)	3:2 Pull Down Detection
Video Encoder	10-bit Digital
Digital Sampling	24-bit, 8-bits per R, G and B
Colors	16.7 Million
Video Scaling Engine	Proprietary CORIO®2
Internal Format	4:4:4 YUV
Internal Test Patterns	User Defined
LCD Panel	24x2 Character
Logo Inserter	Flash Programmable
Proc Amp Adjustments	Brightness, Contrast, Saturation, & Hue for CV & YC Inputs, plus Video Level for RGB Input
Proc Amp Memory	Settings for each Video Input

SDI Jitter

SMPTE259M-C	(270Mbps: 525/625 Line) Jitter 0.070 +/-0.01 UI
SMPTE292M	(1.485/1.4835Gpbs: 720p, 1035i, 1080i, 1080p) Jitter 0.176 +/-0.02 UI

Power Requirement

Internal Power Supply	100-240VAC, 47-63Hz, 50W

Accessories Included

2x Adapters	DVI to HD-15F Adapters
1x AC Power Cord	US, UK or Euro
1x Operations Manual	
1x Rackmount Kit	2 Ears and 4 Screws

Product Item Number

C2-7210	Version with 2 HD-SDI Inputs
C2-7200	Programmable Front Panel Version

Optional Accessories

CC-300	CORIOconsole
A2-2000	Audio Switcher
RM110	Long arm rack ears for 24" to 32" deep racks
1x Control Software	Downloadable from website

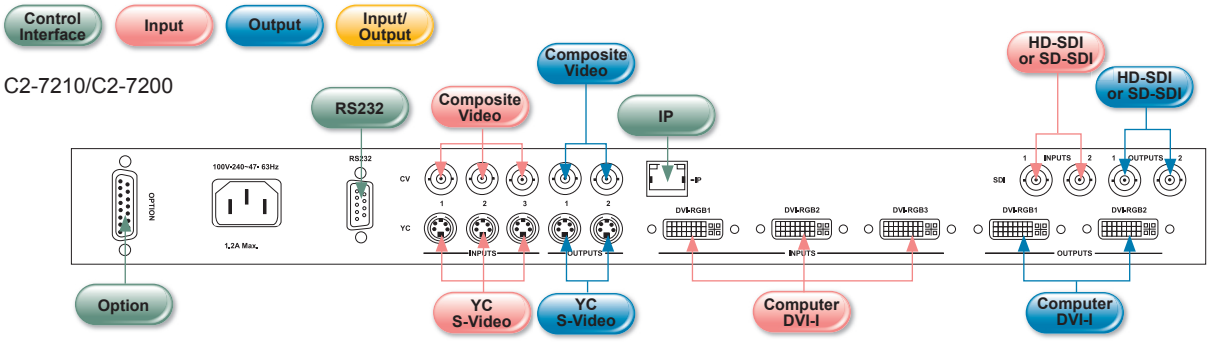
Audio Switching (Optional A2-2000) Note 2

Stereo Inputs	10x Balanced and Unbalanced
Program Output	1x Balanced and Unbalanced
Preview Output	1x Balanced and Unbalanced
Connectors per I/O	2x RCA for Unbalanced

Note

(1) DVI-I Input/Output connectors also accommodate RGBHV, RGBS (In Only), RGsB, YUV & YPbPr formats.

(2) A2-2000 is controlled from the C2-7200/C2-7210 and provides Audio Follow Video or Breakaway.



C2-7110, C2-7100

Dual Channel Video Processors

Key Features C2-7110, C2-7100

- Up, Down and Cross Conversion
- Dual Independent Scaling Engines
- 4:4:4 Sampling for Full Bandwidth Color
- 9 Multi-format Inputs:
  3x CV, 3x YC, 3x DVI-I (also handles RGB, YUV and YPbPr)
- Two Independent Output Channels, each with: CV, YC, DVI-I (+RGB, YUV, YPbPr)
- Multiple Conversion and Scaling Product
- Multi-format Inputs – Digital and Analog
- Analog RGB to 2048x2048, DVI to 1280x1024 @60Hz
- All HDTV resolutions to 1080p
- Genlock any Video Input to any Other
- Seamless Switching Cuts, Fades or Effects
- Unrestricted Dual PIP
- Chromakeyer & Lumakeyer
- Multiple Layering and Windowing Capability
- Flexible Key Layering - Background Lock Source can be Moved to the Foreground
- RS-232 and IP Interface Remote Control
- Ext. Control by Windows Control Panel
- Ext. Control by Third Party Control Systems
- Ext. Hardware Control by Optional CC-300
- Choice of Front Panels to Suit Application:
  48 Button CORIO® EXP Panel - C2-7110
  10 Programmable Buttons + Shift - C2-7100
- CORIO®2 Technology Conversion Engines
- Zoom up to 10X with Full Positioning
- Image Shrink to 10% with Full Positioning

C2-7110 Dual Channel Nine Input Video Processor provides two independent video processing and scaling engines and two video mixers for maximum flexibility in handling SD and HD images: Composite, YC (S-Video), YUV, YPbPr, DVI, and RGB. At home in both broadcast and display environments, it is multiple products in one.

Three operating modes simplify control:

Switcher Mode - Equally powerful Program and Preview channels allow any function (Next Image, PIP, Keying, Logo, etc.) to be set up and previewed, totally independent of the Program output. Transition from Preview to Program is by Cut, Dissolve or Special Effect.

Independent Mode - Provides all the power of two completely independent scalers in one box, each with a full range of features, including PIP, Keying, etc. Each output can deliver different formats and resolutions simultaneously. For example, a presentation being fed to a high resolution display on Output 1 via DVI can be fed to a VCR for recording on Output 2 via Composite Video. Two projectors may be edge blended from one unit.

Dual PIP Mode - Any input can be placed into either of two windows of any size and positioned anywhere on the screen, even overlapping, with user defined layer priority control. The windows can be placed over any other input or a static image from memory as the background. The window's image can then be seamlessly switched, faded or zoomed. Keying can be independently applied to each window.

Powerful Features – The 4:4:4 sampling provides full bandwidth color which allows precise keying, including Transparent (Soft) Keys. The nine video inputs can accommodate signals (either analog or digital, video or computer) in a variety of formats and resolutions. It handles all known HDTV formats plus any analog RGB resolution up to 2048x2048 - and new resolutions can be easily added. Each of the two independent outputs delivers a wide range of digital and analog video signals.

In addition to SD and HD television formats, the C2-7110 output signal format flexibility assures that the Native Resolution of virtually any Digital Display can be matched. Using the software based resolution calculator, new or unusual resolutions can be instantly added to the menu. Signal parameter adjustments can be made for each video input and are stored in individual non-volatile memories. A Windows tool is provided to allow user programming of multiple internal test cards and logos into non-volatile memory. The test cards facilitate ease of setup, and the logo memory allows the unit to be used as a Logo Inserter. Advanced motion compensation (NTSC and PAL) is employed to smooth out fast moving images and its automatic 3:2 Pull-down detection efficiently de-interlaces video from 24 fps film (NTSC).

Setup and Control is extremely flexible. Local control is provided by the 48-button CORIO® EXP Front Panel designed expressly for handling live events. These buttons plus the multi-way navigation control and integrated LCD bring all the control needed for quick and easy access right to the front panel. Remote control via RS-232 or Ethernet (IP) is standard. Macros and presets are provided to facilitate complex command sequences which can be recalled at the touch of a button. The Windows Control Panel affords complete control of the unit. The CC-300 CORIOconsole option takes control to the next level by providing the C2-7000 series with the operational feel of a traditional Video Production Switcher.

C2-7100 provides all the functions of the C2-7110 with a different front panel. This version has ten programmable buttons and a shift key with removable key caps for flexible labeling. It is intended for applications where custom or restricted access to functions is desirable. The programmability of the buttons provides the ability to setup the unit to allow only specific functions to be accessed directly from the front panel buttons. This is particularly important in situations where public access to the unit is available.

C2-7110, C2-7100 Specifications

Video Inputs

Composite Video	3x via BNC Connector
YC (S-Video)	3x via 4-PIN Mini-DIN Connector
DVI-I (Note 1)	3x via DVI-I Connector

Genlock Input

Reference Signal	Any of the Video Inputs

Independent Output 1

Composite Video	1x via BNC Connector
YC (S-Video)	1x via 4-PIN Mini-DIN Connector
DVI-I (Note 1)	1x via DVI Connector

Independent Output 2

Composite Video	1x via BNC Connector
YC (S-Video)	1x via 4-PIN Mini-DIN Connector
DVI-I (Note 1)	1x via DVI Connector

Input/Output Range

Computer Resolutions	Analog: Up to 2048x2048 DVI: Up to 1280x1024 @ 60Hz/1080p30
Max Vert Refresh Rate	250Hz
Max Horiz Frequency	150KHz
HDTV Resolutions	All thru 1080p
Interlace Support	Progressive and Interlaced
Television Standards	NTSC 3.58, 4.43, PAL-B,G,I ,D, H, PAL-M, PAL-N & SECAM (In Only)

Input RGB Sync

Type	RGBHV, RGBS, RGsB
Level / Impedance	TTL, 10KΩ
Polarity	Positive or Negative
Maximum Level	5Vp-p

Output RGB Sync

Type	RGBHV,RGsB
Level / Impedance	5Vp-p, 220Ω
Polarity	Positive or Negative

Input/Output YPbPr Sync

Type	Tri-Level

Control Methods

Front Panel – C2-7200	10x2 Programmable Buttons +LED, Rotary Selector and LCD
Front Panel – C2-7110	48 Buttons + LED and LCD
RS-232 Interface	DB-9 Male Connector
IP Interface	RJ45 Connector

Mechanical

Desktop Case (HWD)	44x432x201mm (1.75"x17"x7.9")
With Rack Ears (HWD)	44x483x201mm (1.75"x19"x7.9")
C2-7100 Weight (Net)	3.16 kg (6.95 lbs)
C2-7110 Weight (Net)	3.16 kg (6.95 lbs)

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

Regulatory Approvals

Video Scaler Unit	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Warranty

Limited Warranty	2 Years Parts and Labor

General

Image Size & Position	AutoSet or Manual
Image Zoom Range	Continuous to 10x
Image Shrink Range	Continuous to 10%
Image Mirroring	Horizontal and/or Vertical
Image Freeze	Full Frame
Video Sampling Rate	108MHz
Resolution Memory	Approximately 1,000 Definable
Firmware Memory	Flash, Upgradeable via RS-232
Flicker Filter	4-Level Vertical
PIP	2 Windows & Background from any 3 Inputs
Number PIP Windows	2 in Dual PIP Mode, 1 in Switcher & Ind. Modes
Video I/O Impedance	75Ω
Video Decoder	9-bit Digital
Comb Filter Decoding	Adaptive
De-Interlacing (PAL-NTSC)	Pixel-level Motion Adaptive
Film Mode (NTSC)	3:2 Pull Down Detection
Video Encoder	10-bit Digital
Digital Sampling	24-bit, 8-bits per R, G and B
Colors	16.7 Million
Video Scaling Engine	Proprietary CORIO®2
Internal Format	4:4:4 YUV
Internal Test Patterns	User Defined
LCD Panel	24x2 Character
Logo Inserter	Flash Programmable
Proc Amp Adjustments	Brightness, Contrast, Saturation, & Hue for CV & YC Inputs, plus Video Level for RGB Input
Proc Amp Memory	Settings for each Video Input

Power Requirement

Internal Power Supply	100-240VAC, 47-63Hz, 50W

Accessories Included

2x Adapters	DVI to HD-15F Adapters
1x AC Power Cord	US, UK or Euro
1x Operations Manual	
1x Rackmount Kit	2 Ears and 4 Screws

Product Item Number

C2-7110	Version w/EXP Front Panel
C2-7100	Version w/STD Front Panel

Optional Accessories

CC-300	CORIOconsole
A2-2000	Audio Switcher
Input/Output Cables	Various Types
RM110	Long arm rack ears for 24" to 32" deep racks
1x Control Software	Downloadable from website

Note

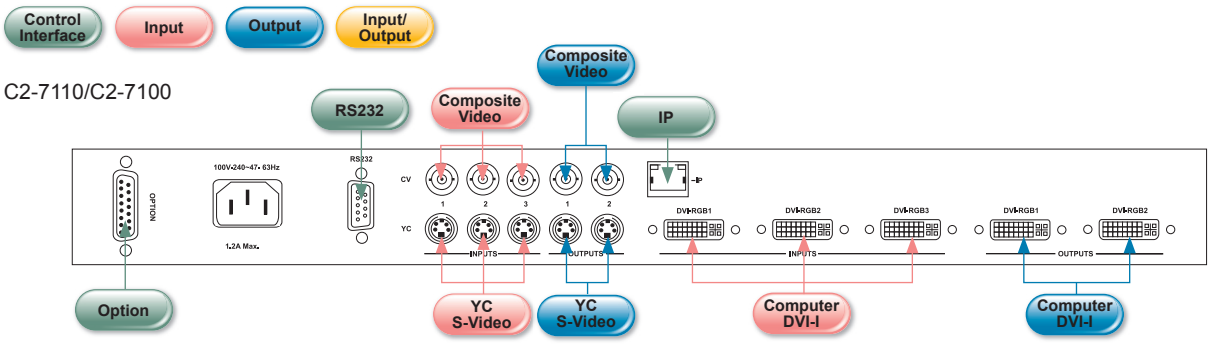
(1) DVI-I Input/Output connectors also accommodate RGBHV, RGBS (In Only), RGsB, YUV & YPbPr formats.

Audio Switching (Optional A2-2000 - Note 2)

Stereo Inputs	10x Balanced and Unbalanced
Program Output	1x Balanced and Unbalanced
Preview Output	1x Balanced and Unbalanced
Connectors per I/O	2x RCA for Unbalanced

Notes

(2) A2-2000 is controlled from the C2-7100 and provides Audio Follow Video or Audio Breakaway.



C2-5200, C2-5100

Single Channel Video Processors

Key Features C2-5200, C2-5200

- Up, Down and Cross Conversion
- Multiple Conversion and Scaling product
- Up to 10 Inputs:
  3 x RGB/YUV/YPbPr, 3 x CV, 3 x YC,
  1 x SD-SDI (C2-5200 only)
- 5 Outputs:
  1 x CV, 1 x YC, 2 x RGBHV, YPbPr, YUV &
  1 x SD/SDI (C2-5200 only)
- Two Preview Outputs – RGBHV and CV
- Computer Resolutions to 2048x2048
- HDTV Resolutions to 1080p
- Genlock any Input to Any Other
- SD/SDI In/Out & Genlock (C2-5200 Only)
- AutoSet - Automatic picture sizing
- Seamless Switching with Cuts or Fades
- Unrestricted PIP
- Chromakeyer & Lumakeyer
- CORIO®2 Technology Conversion Engine
- Auto Detect Worldwide TV Standards
- Zoom up to 10x with Full Positioning
- Image Shrink to 10% with Full Positioning
- Video Image Adjustment, Multiple Memory
- Front Panel Control Knob/Buttons & LCD
- Optional IR Remote or IP Interface
- RS-232 and IP Interface Remote Control
- Ext. Control by Windows Control Panel
- Ext. Control by Third Party Control Systems
- Ext. Hardware Control by Optional CC-300
- Universal Internal Power Supply

C2-5100 Video Scaler is a multi-function image conversion and scaling product which comes close to the ideal of “Anything In – Anything Out”. Not only is it a high performance Video Scaler, Up-Converter, Down-Converter and Multi-Format Seamless Switcher, but it goes far beyond that. It’s also a Worldwide Standards Converter, Chromakeyer, Lumakeyer, PIP Device, HDTV Converter, Frame Synchronizer, Time Base Corrector, Aspect Ratio Converter and a Universal Image Genlock. The nine Inputs and four Outputs will accommodate Composite Video, YC, YUV, YPbPr, all HDTV formats and any RGBHV resolution up to 2048x2048, not just some predefined ones. Plus, the C2-5100 has two Outputs for Preview (RGBHV and Composite Video) to facilitate live event switching.

As a PIP Device, the C2-5100 Universal Video Scaler is unparalleled in its price range. Any input can be placed into a window of any size and positioned anywhere on the screen. The window can be placed over any other input as the background. The image in the window can then be seamlessly switched to another input. The image can also be zoomed while it is in the window. As a Seamless Switcher, next source Preview is available via the associated computer or video Preview output.

The C2-5100’s output signal format flexibility assures that the Native Resolution of virtually any Analog Display can be matched. A Windows Control Panel is provides a resolution calculator, allowing new resolutions to be added. Adjustments are provided for Brightness, Contrast, Color Saturation and Hue (where applicable) and each video input has its own non-volatile memory to retain these settings, even when the power to the unit has been turned off. A Windows tool is provided to allow user programming of multiple internal graphic images into non-volatile memory. These images can be used as test cards facilitate ease of setup, or as logos allowing the unit to be used as a Logo Inserter. The C2-5100 employs advanced motion compensation to smooth out fast moving images and its automatic 3:2 Pull-down detection efficiently de-interlaces video from 24 fps film.

C2-5200 Video Scaler provides all the features and functions of the C2-5100 and adds an SD-SDI input and output. This brings the unit’s total to ten Inputs and five Outputs. Additionally, a second SD-SDI input is provided exclusively as a genlock source. The SD-SDI Inputs and Outputs are fully integrated into the architecture of the unit so that any of the other signal formats may be converted to and from SD-SDI. The SD-SDI signal can be used as either the background or insert in the PIP windowing mode. It is also possible to seamlessly switch between any of the analog inputs and the SD-SDI input.

Control of the C2-5100 and C2-5200 can be from the front panel buttons and integrated LCD or remotely by RS-232 or by IP (C2-5110 and C2-5210). The Windows Control Panel affords complete control of the unit and adds Macros to facilitate long, complex command sequences. In addition, the optional CC-300 CORIOconsole provides a hardware control solution similar to a traditional Video Switcher.

C2-5200, C2-5100 Specifications

10 Video Inputs

Composite Video	3x via BNC Connector
YC (S-Video)	3x via 4-PIN Mini-DIN Connector
SD/SDI (C2-5200 Only)	1x via BNC Connector
RGBHV, YPbPr, YUV	3x (1x via 5-BNC, 2x via HD-15F) (Note 1)

Genlock Input

Reference Signal	Any of the Video Inputs
SDI (C2-5200 Only)	1x via BNC

5 Video Outputs

Composite Video	1x via BNC Connector
YC (S-Video)	1x via 4-PIN Mini-DIN Connector
SD/SDI (C2-5200 Only)	1x via BNC Connector
RGBHV, YPbPr, YUV	2x (1x via 5-BNC, 2x via HD-15F)

2 Preview Outputs

Composite Video	1x via BNC Connector
RGBHV, YPbPr, YUV	1x via HD-15 Female Connector

Input/Output Range

Computer Resolutions	Up to 2048x2048
Max Vert Refresh Rate	250Hz
Max Horiz Frequency	150KHz
HDTV Resolutions	All Known Resolutions & Formats
Interlace Support	Progressive and Interlaced
Television Standards	PAL-B, G, I, D, H, PAL-M, PAL-N, NTSC 3.58, NTSC 4.43, SECAM,
SD/SDI (C2-5200 Only)	SMPTE 259M

Input RGB Sync

Type	Auto-detect RGBHV, RGBS, RGsB, YPbPr
Level / Impedance	TTL, 10KΩ
Polarity	Positive or Negative
Maximum Level	5Vp-p

Output RGB Sync

Type	RGBHV, RBGS
Level / Impedance	5Vp-p, 220Ω
Polarity	Positive or Negative

Output YPbPr Sync

Type	Bi-level

Control Methods

Local Front Panel	10x Programmable Buttons +LED, Rotary Selector, LCD Readout
RS-232 Interface	DB-9 Male Connector
IP Interface	Optional via RJ45 Connector
Infrared Control Option	IRC-5 Remote Control Unit
Audio Switcher Control	Via D-15 Options Connector from the Main Unit

Mechanical

Desktop Case (HWD)	44x432x201mm (1.75"x17"x7.9")
With Rack Ears (HWD)	44x483x201mm (1.75"x19"x7.9")
C2-5100 Weight (Net)	3.48 kg (7.66 lbs)
C2-5200 Weight (Net)	3.58 kg (7.88 lbs)

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

Regulatory Approvals

Video Scaler Unit	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

General

Image Size & Position	AutoSet or Manual
Image Zoom Range	Continuous to 10x
Image Shrink Range	Continuous to 10%
Image Mirroring	Horizontal and/or Vertical
Image Freeze	Full Frame
Video Memory	4x4MBytes Picture Memory Buffers (16MBytes total)
Resolution Memory	Approximately 1,000 Definable
Firmware Memory	Flash, Upgradeable via RS-232
Flicker Filter	4-Level Vertical
PIP	Any 2 Video Inputs
Number PIP Windows	Multiple Units may be Cascaded
Video I/O Impedance	75Ω
Video Decoder	9-bit Digital
Comb Filter Decoding	Adaptive
De-Interlacing (PAL-NTSC)	Pixel-level Motion Adaptive
Film Mode (NTSC)	3:2 Pull Down Detection
Video Encoder	10-bit Digital
Digital Sampling	24-bit, 8-bits per R, G and B
Colors	16.7 Million
Video Scaling Engine	Proprietary CORIO®2
Internal Format	4:2:2 YUV
Test Cards/Logos	User Defined
LCD Panel	24x2 Character
Proc Amp Adjustments	Brightness, Contrast, Saturation, & Hue for CV & SV Inputs, plus Video Level for RGB Inputs
Proc Amp Memory	Settings for each Video Input

Power Requirement

Internal Power Supply	100-240VAC, 47-63Hz, 50W

Warranty

Limited Warranty	2 Years Parts and Labor

Accessories Included

1x AC Power Cord	US, UK or Euro
1x Operations Manual	C2-5000 Series
1x Rackmount Kit	2 Ears and 4 Screws

Optional Accessories

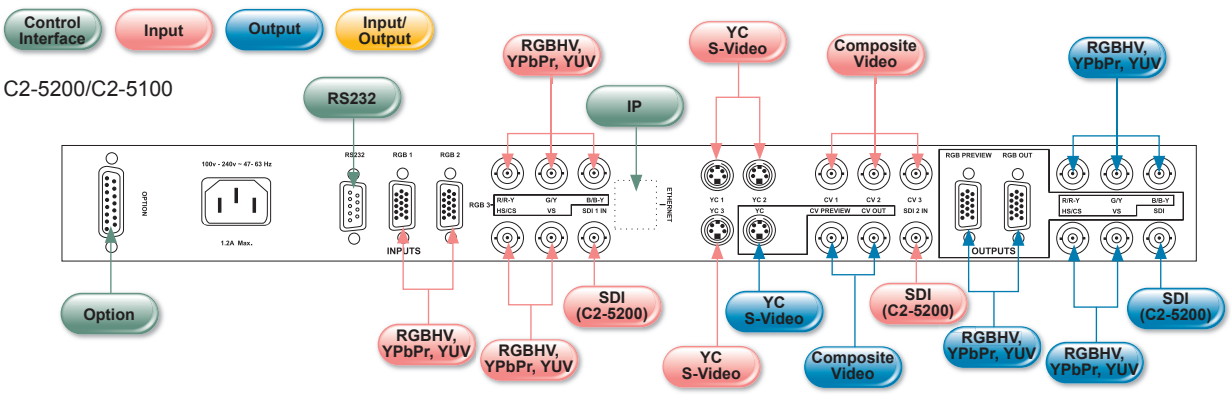
A2-2000	Audio Switcher (Note 2)
IRC-5	IR Remote Control Unit
Add 10 to Model No.	Network Interface (Factory Installed)
RM110	Long arm rack ears for 24" to 32" deep racks
CC-300 CORIOconsole	Hardware Control Panel
1x Control Software	Downloadable from website

Product Item Number

C2-5100	Universal Scaler
C2-5110	Universal Scaler with IP Interface
C2-5200	Universal Scaler with SD/SDI I/O
C2-5210	Universal Scaler with SD/SDI & IP

Note

(1) RGBHV Inputs/Outputs may also be RGBS or RGsB.
(2) A2-2000 is controlled from the C2-5000 and provides Audio Follow Video or Audio Breakaway. A Separate Spec Sheet available for this option.



C2-4100

Single Channel Video Processor

Key Features C2-4100

- Up and Cross Conversion
- Multiple Conversion and Scaling Products
- 3 Inputs:
  3x RGB/YUV/YPbPr
- 2 Outputs:
  2x RGB/YPbPr
- Preview Output RGBHV
- Computer Resolutions to 2048x2048
- HDTV Resolutions to 1080p
- Genlock any Input to Any Other
- AutoSet® - Automatic picture sizing
- Seamless Switching with Cuts or Fades
- Unrestricted PIP
- Chromakeyer & Lumakeyer
- CORIO®2 Technology Conversion Engine
- Zoom to 10x, 100% Pan coverage
- Image Shrink to 10%, 100% Pan coverage
- Video Image Adjustment, Multiple Memory
- Front Panel Control Knob/Buttons and LCD
- Optional IR Remote or IP Interface
- RS-232 and IP Interface Remote Control
- Ext. Control by Windows Control Panel
- Ext. Control by Third Party Control Systems
- Ext. Hardware Control by Optional CC-300
- Universal Internal Power Supply

C2-4100 Video Processor is a high performance Cross Converter for PC and HDTV signals. It is also a Seamless Switcher, Chromkeyer, Lumakeyer, PIP Device, RGB Frame Synchronizer, Aspect Ratio Converter and a RGB-HDTV Genlock. The three Inputs and two Outputs will accommodate RGBHV resolutions up to 2048x2048 and YPbPr in all HDTV formats. Plus, the C2-4100 also has an RGBHV Preview Output to facilitate live event switching.

As a PIP Device, any input of the C2-4100 RGB Video Scaler can be squeezed and placed into a window of any size and positioned anywhere on the screen. The window can be placed over any other input as the background. The image in the window can then be seamlessly switched to another video input. The image can also be zoomed while it is in the window. As a Seamless Switcher, next source Preview is available via the associated computer Preview output.

The C2-4100's output signal format flexibility assures that the Native Resolution of virtually any Analog Display can be matched. A Windows Control Panel is provides a resolution calculator, allowing new resolutions to be added. Adjustments are provided for RGB levels and each video input has its own non-volatile memory to retain these settings, even when the power to the unit has been turned off. A Windows tool is provided to allow user programming of multiple internal graphic images into non-volatile memory. These images can be used as test cards facilitate ease of setup, or as logos allowing the unit to be used as a Logo Inserter.

Control of the C2-4100 can be from the front panel buttons and integrated LCD or remotely by RS-232 or by IP (C2-4110). The Windows Control Panel affords complete control of the unit and adds Macros to facilitate long, complex command sequences. In addition, the optional CC-300 CORIOconsole provides a hardware control solution similar to a traditional Video Switcher.

C2-4100 Specifications

3 Video Inputs
RGBHV, YPbPr, YUV	3x (1x via 5-BNC, 2x via HD-15F)

Genlock Input
Reference Signal	Any of the Video Inputs

2 Video Outputs
RGBHV, YPbPr, YYUV	2x (1x via 5-BNC, 2x via HD-15F)

Preview Output
RGBHV, YPbPr, YUV	1x via HD-15 Female Connector

Input/Output Range
Computer Resolutions	Up to 2048x2048
Max Vert Refresh Rate	250Hz
Max Horiz Frequency	150KHz
HDTV Resolutions	All Known Resolutions & Formats
Interlace Support	Progressive and Interlaced

Input RGB Sync
Type	RGBHV, RGBS, RGsB, YPbPr, YUV
Level / Impedance	TTL, 10KΩ
Polarity	Positive or Negative
Maximum Level	5Vp-p

Output RGB Sync
Type	RGBHV, RBGS, RGsB, YPbPr
Level / Impedance	5Vp-p, 220Ω
Polarity	Positive or Negative

Output YPbPr Sync
Type	Bi-level

Control Methods
Local Front Panel	Up to 5x User-definable Preset Buttons +LED, Rotary Selector, LCD Readout
RS-232 Interface	DB-9 Male Connector
IP Interface	Optional via RJ45 Connector
Infrared Control Option	IRC-5 Remote Control Unit
Audio Switcher Control	Via D-15 Options Connector from the Main Unit

General
Image Size & Position	AutoSet or Manual
Image Zoom Range	Continuous to 10x
Image Shrink Range	Continuous to 10%
Image Mirroring	Horizontal and/or Vertical
Image Freeze	Full Frame
Video Memory	4x4MBytes Picture Memory Buffers (16MBytes total)
Resolution Memory	Approximately 1,000 Definable
Firmware Memory	Flash, Upgradeable via RS-232
PIP	Any 2 Video Inputs
Number PIP Windows	Multiple Units may be Cascaded
Video I/O Impedance	75Ω - R, G & B
De-Interlacing	Pixel-level Motion Adaptive at 15KHz Input (YUV)
Digital Sampling	24-bit, 8-bits per R, G and B
Colors	16.7 Million
Video Scaling Engine	Proprietary CORIO®2
Internal Format	4:2:2 YUV
Test Cards/Logos	User Defined
LCD Panel	24x2 Character
Proc Amp Adjustments	Video Level for RGB Inputs
Proc Amp Memory	Settings for each Video Input

Mechanical
Desktop Case (HWD)	44x432x201mm (1.75"x17"x7.9")
With Rack Ears (HWD)	44x483x201mm (1.75"x19"x7.9")
Weight (Net)	3.3 kg (7.26 lbs)

Warranty
Limited Warranty	2 Years Parts and Labor

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

Regulatory Approvals
Video Scaler Unit	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Power Requirement
Internal Power Supply	100-240VAC, 47-63Hz, 50W

Accessories Included
1x AC Power Cord	US, UK or Euro
1x Operations Manual	
1x Rackmount Kit	2 Ears and 4 Screws

Optional Accessories
A2-2000	Audio Switcher (Note 1)
IRC-5	IR Remote Control Unit
IP Interface	Factory Installed Option
RM110	Long arm rack ears for 24" to 32" deep racks
CC-300	Hardware Control Panel
1x Control Software	Downloadable from website

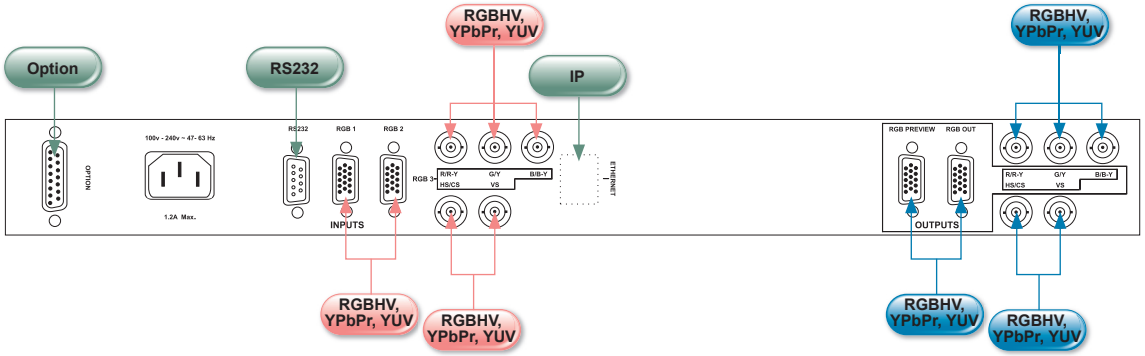
Product Item Number
C2-4100	RGB Video Scaler
C2-4110	RGB Scaler with IP Interface

Audio Switching (Optional A2-2000 - Note 1)
Stereo Inputs	10x Balanced and Unbalanced
Program Output	1x Balanced and Unbalanced
Preview Output	1x Balanced and Unbalanced
Connectors per I/O	2x RCA for Unbalanced

Note
(1) A2-2000 is controlled from the C2-4100 and provides Audio Follow Video or Audio Breakaway.

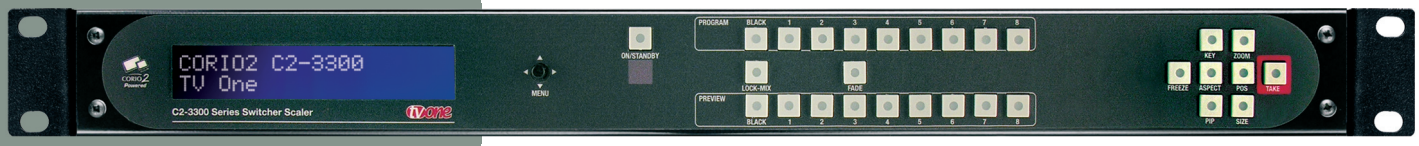
Control Interface | Input | Output | Input/ Output

C2-4100



C2-3300 Series

Universal Input/Output Seamless Switchers



Key Features C2-3300 Series

- Up, Down and Cross Conversion
- Automatic resolution and format detection
- 8x Universal Video Inputs
- 1x Program Out (Analog, any format)
- 1x Program Out (DVI-D)
- 1x Preview Out (RGBHV, all Sources)
- Seamless Switcher
- Video Frame Rate Conversion
- Worldwide TV Standards Conversion
- Aspect Ratio Conversion
- Menu Driven Control via Joystick and LCD
- Multiple In and Out Connector Choices
- Rack-mounting kit (to fit to 19" rack width)
- RS-232, IR and IP Interface
- Ext. Control by Windows Control Panel
- Ext. Control by Third Party Control Systems
- Ext. Hardware Control by Optional CC-300

Additional Features of the C2-3310 and C2-3360

- 8x Stereo Differential Stereo Audio In
- Program and Preview Stereo Audio Out
- Adjustable Audio Level and Balance
- Audio assignable to any video in

Additional Features of the C2-3350 and C2-3360

- Unrestricted Single Window PIP
- Genlock to any input to any other
- Mix function
- Chromakeyer & Lumakeyer

Flexible Upgrade Path

- Audio Upgradable - TV One Service Centers
- Mix/Key/PIP Upgradable at User's Location

C2-3300 Universal Input Seamless Switcher Series is based on TV One's exclusive CORIO®2 technology and provides high quality up, down and cross conversion from standard video formats to Computer or HDTV signals. NTSC and PAL video standards are supported. Each of the 8x Universal Video inputs on HD15 connectors can accommodate Composite Video, YC (S-Video), YUV/YPbPr Component, RGBHV, RGBS or RGsB formats. Compact adapters are available that convert from BNC to HD15 or 4-Pin YC to HD15. The output is selectable as any computer resolution up to 2048x2048 at any vertical refresh rate and all HDTV resolutions up to 1080p as well as Composite and YC.

Two Program outputs are provided. One is Universal Analog via an HD15 that can be set to any analog format and resolution from Composite Video through 1080p HD. The second Program out is provided as DVI-D. The Preview output is an analog RGBHV signal that shows the selected input as a full screen image preview; CV and YC inputs are up-converted to RGBHV for viewing.

Variable Zoom to 10X allows you to enlarge any part of the video image to fill the entire computer screen and position controls allow you to move around to any area desired. Variable Shrink to as little as 10% allows fitting the image to any display. High bandwidth chroma sampling insures faithfully reproduced, high resolution colors.

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. All settings are stored in non-volatile memory and are retained even when power is switched off.

Setup and Control is extremely flexible. Local control is provided by the Front Panel designed expressly for handling live events. These buttons plus the multi-way navigation control and integrated LCD bring all the control needed for quick and easy access right to the front panel. Remote control via RS-232, Infrared or Ethernet (IP) is standard. Macros and presets are provided to facilitate complex command sequences which can be recalled at the touch of a button. The Windows Control Panel affords complete control of the unit. The CC-300 CORIOconsole option takes control to the next level by providing the C2-3000 series with the operational feel of a traditional Video Production Switcher.

C2-3310 and **C2-3360** models offer Differential Stereo Audio switching provided by an integral 8x1 stereo audio routing switcher. The eight balanced/unbalanced inputs may be set to follow any of the video inputs. The connections are made via terminal blocks on the rear panel. Adjustment of audio volume and balance is possible (MUTE, -15dB to +15dB), plus separate routed outputs for program and preview.

C2-3350 and **C2-3360** models offer a wide variety of additional capabilities, Genlock, Unrestricted Picture-In-Picture (any input over any other), Chromakey, Lumakey and Mixing. The Key Mode allows computer graphics to be keyed over an external Composite or YC signal or vice versa. The keyed image may be faded in and out. Due to the 4:4:4 sampling format, precise keying at the pixel level can be achieved. The Mix Mode permits glitch-free mixing between the computer image and external video. The PIP Mode allows the computer inputs to be inset in a window over any of the video inputs.

Upgradability is taken to a new level in the C2-3000 Series. A basic C2-3300 or C2-3350 may have audio added at any TV One Technical Support Center by adding the Stereo Audio switching board. Adding the Mix/Key/PIP features can be done by firmware upgrade at the user's location in the field. So, the upgrade path is easy from the basic to the most advanced model.

ZCH3000-1 adaptor

ZSH3000-1 adaptor

C2-3300 Series Specifications

Video Inputs (All Models)

Universal Analog	8x via HD15 Female

Video Outputs (All Models)

Program Channel (2x)	1x Universal Analog via HD15F 1x DVI-D via DVI-I Connector
Preview Channel	1x RGBHV via HD15F

Stereo Audio Inputs

C2-3310, C2-3360	8x Balanced/Unbal via Terminals

Stereo Audio Outputs

C2-3310, C2-3360	2x Balanced/Unbal via Terminals

Audio Characteristics

Type	Analog – Balanced or Unbalanced
Frequency Response	180KHz - 3dB
Level and Balance	MUTE, -15dB to +15dB
Input/Output Levels	Line Level – all Inputs & Outputs

Video Characteristics

Video Standards	NTSC, PAL-B, M, N, SECAM
Composite & YC	NTSC, PAL (Note 1)
YUV	NTSC, PAL (Note 1)
YPbPr	Up to 1080p @ 60Hz
RGBHV, RGBS, RGsB	Up to 2048x2048 60Hz
Sync	TTL Level, 10KΩ, Pos or Neg
Impedance	75Ω
R-G-B Level Range	0.5-2.0V p-p
Scan Rate Detection	Automatic
PC Resolutions	Any up to 2048x2048
HDTV Resolutions	Any up to 1080p

General

Size and Position	Automatic via AutoSet or Manual
Image Size	User-Definable Presets
Image Freeze	One Video Frame
Video Sampling Rate	108MHz
Settings Memory	Non-Volatile
Zoom Range	Variable to 10x
Shrink Range	Variable to 10%
Image Mirroring	Horizontal and/or Vertical
Horizontal Filtering	Full Digital
Conversion Technology	Proprietary – CORIO®2
Color Resolution	24-bit (16.8 Million Colors)
Digital Sampling	24-bit, 4:4:4 format
Firmware Memory	Flash, Upgradeable via RS-232
Video Decoder	9-bit Digital
De-Interlacing (NTSC-PAL)	Pixel-level Motion Adaptive
Comb Filter Decoding	Adaptive
Film Mode (NTSC)	3:2 Pulldown
Video Adjustments	Contrast, Brightness, Saturation, Hue (NTSC), R-G-B Levels

Control

Local	Push Buttons and LCD
Remote	IR, RS-232, Ethernet IP

Mechanical

Desktop Case (HWD)	44x420x200mm (1.75"x17"x7.9")
With Rack Ears (HWD)	44x482x200mm (1.75"x19"x7.9")
Weight (Net)	3.2kg (7.0 lbs)

Warranty

Limited Warranty	2 Years Parts and Labor

Environmental

Operating Temp.	0° to +45° C (+32° to +113° 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

Power Requirement

Mains	100-240V AC (47-63 Hz), 20W

Regulatory Approvals

Video Scaler Unit	EN55103-1 & 2, EN60065, FCC, RoSH
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Product Item Numbers

C2-3300	No Audio - No Mix/Key/PIP
C2-3310	With Audio - No Mix/Key/PIP
C2-3350	No Audio - With Mix/Key/PIP
C2-3360	With Audio - With Mix/Key/PIP

Accessories Included

1x Operations Manual	C2-3300 Series
2x ZCH3000-1	HD15M to BNC Male CV Adapter
1x ZSH3000-1	HD15M to 4-Pin Mini-DIN YC
1x Rackmount Kit	Set of attachable ears

Optional Accessories

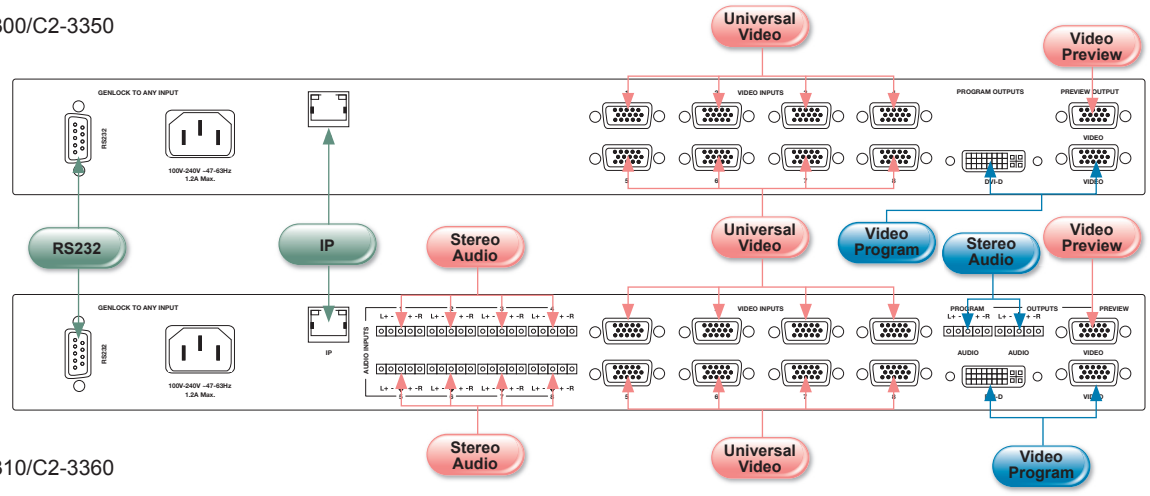
ZCH3000-1	Additional HD15M to BNC Male CV Adapt
ZSH3000-1	Additional HD15M to 4-Pin Mini-DIN YC
CHB1609-2	0.7m (2') HD15M to 5 BNC Female Cable
ZHB1870-6	2m (6') HD-5M to 3 BNC Male Cable
ZHR1720G-6	2m (6') HD15M to 3 RCA Male Cable
ZHB1719G-6	2m (6') HD15M to 5 BNC Male Cable
CC-300	Hardware Control Panel
RM110	Long arm rack ears for 24" to 32" deep racks

Notes

(1) Composite, YC and YUV/YPbPr signal may be fed directly via an HD15 cable or via the breakout cable and adapters listed in the Optional Accessories.

Control Interface | Input | Output | Input/ Output

C2-3300/C2-3350



C2-3310/C2-3360

CC-300

CORIOconsole

CC-300 CORIOconsole provides a Video Production Switcher type interface for the C2 series Universal Video Processors. Two rows of 14 buttons are provided for Preview and Program functionality of mixed format sources. These buttons are programmable (via the C2 unit attached), to accommodate more than 11 inputs. Fades and wipes are either automatic with preset times or manually controlled via the fader bar. The joystick employs full range of motion to allow precise positioning of PIP inserts and other functions. The Integrated LCD, plus fixed purpose function keys combine with "soft" function keys to provide total control over multiple C2 series units. The CC-300 provides access to all controls with a minimum of keystrokes. The unit is in a low profile desk top case that may also be rack mounted. Control of external devices is available via the unit's direct interface to machine control products made by Calypso Control Systems.

Key Features CC-300

- Full Control of C2 Series Functions
- Precision Fader and Joystick
- Integrated LCD Display
- Dedicated Program and Preview Buttons
- IP and RS-232 Interface
- Low Profile Enclosure - Rackmountable

A2-2000

Analog Audio Switcher

Key Features A2-2000

- Ten Stereo Inputs
- Program and Preview Out
- Balanced and Unbalanced In & Out
- Individual Input Trim & Balance Adjustments
- Audio Follow Video or Audio Breakaway
- Preview Headphone Out

A2-2000 Stereo Audio Switcher is a companion product for the C2 Series Large Venue Presentation Switchers (except C2-3000 Series). It is slaved to and controlled directly from the Video Processor. Audio Follow Video (AFV) or Audio Breakaway functionality is fully supported. Additionally, the unit handles both high impedance unbalanced and low impedance balanced audio. It is styled to complement the appearance of the Video Processor and like the Video Processor, it can be operated in desktop or rack mount mode.

The A2-2000 connects to C2 series Video Processors via the OPTION Interconnect Cable which provides power and communications to the unit from the C2 unit.

CC-300 Specifications

Input Selection/Manipulation

Program/Preview Buttons	2x14 inputs; Pgm, Prev, Take
Manual Fade/Wipe	Via Precision Fader
Manual Image Positioning	Via Precision Joystick

Mode/Function Selection

Dedicated Function Keys	21 (Mode & Cross Functional)
“Soft” Function Keys	14 (Variable Functions)
Shift Keys	2 (Function Multiplier)
Integrated Display	LCD 6.5"x3.1"

Environmental

Operating Temperature	0° to +50° C (+32° to +122° F)
Operating Humidity	10% to 85%, Non-condensing
Storage Temperature	-10° to +60° C(+14° to +140° F)
Storage Humidity	10% to 85%, Non-condensing

Mechanical

Desktop Case (HWD)	67x432x176mm (2.6"x17"x6.9")
Weight (Net)	3.06 kg (6.73 lbs)

Warranty

Limited Warranty	2 Years Parts and Labor

Power Requirement

External Power Supply	12VDC@3.3A – Locking DC

Regulatory Approvals

Converter Unit	FCC, CE, RoHS
Power Supply	UL, CUL, CE, PSE, GS, RoHS

Accessories Included

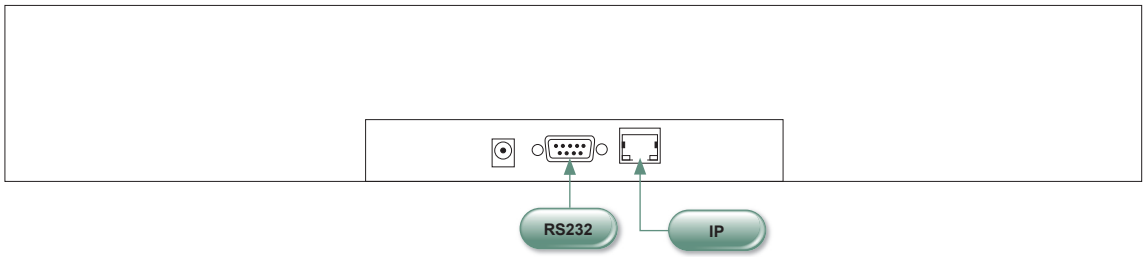
1x Power Adapter	US, UK or Euro
1x Operations Manual	
1x Rackmount Kit	Set of attachable ears

Product Item Number

CC-300	CORIOconsole

Control Interface | Input | Output | Input/ Output

CC-300



A2-2000 Specifications

Audio Inputs/Outputs

Number of Inputs	10 (Stereo)
Number of Outputs	2 (Stereo – 1 Program/1 Preview)

Audio Characteristics (Balanced I/O)

Max Diff Input	~18dBu (6Vrms)
Common Mode Rej.	~80dB
Max Diff Output	~18dBu (6Vrms)
Short Circuit Current	~70mA
Output Drive Ability	As low as 600 Ohms

(Unbalanced I/O)

Maximum Input Level	~12 dBu (3 Vrms)
Maximum Output Level	~12 dBu (3 Vrms)
Short Circuit Current	~70mA
Output Drive Ability	As low as 600 Ohms

Throughput

Total Harmonic Dist.	~0.02% - 20Hz to 20kHz
Crosstalk	~65dB
Frequency Response	20Hz (-1.5dB) to >50kHz
Signal to Noise	~80dB
Input Trim	-15 to +15 dB with Mute
Balance Trim	-15 to +15 dB

Mechanical

Desktop Case (HWD)	44x432x201mm (1.75"x17"x7.9")
With Rack Ears (HWD)	44x483x201mm (1.75"x19"x7.9")
Weight (Net)	2.54 kg (5.59 lbs)

Warranty

Limited Warranty	2 Years Parts and Labor

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 +140° F)
Storage Humidity	10% to 85%, Non-condensing

Power Requirement

Via C2 Video Processor	12VDC@350mA

Regulatory Approvals

Converter Unit	FCC, CE, RoHS

Accessories Included

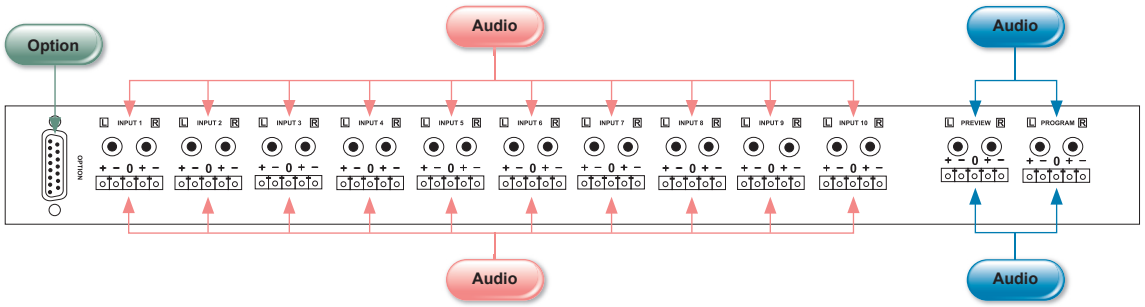
1x OPTION Interconnect	DB15M to DB15M Cable
1x Operations Manual	
RM110	Long arm rack ears for 24” to 32” deep racks

Product Item Number

A2-2000	Stereo Audio Switcher

Control Interface | Input | Output | Input/ Output

A2-2000

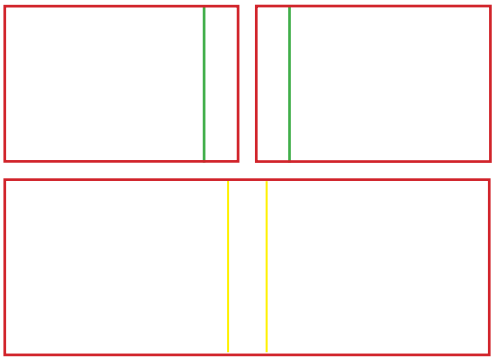


Edge Blending

Edge Blending is a method used to create a wider or taller video display. These displays are often seen in staging and live performance venues, churches, government and endless other unique applications requiring a larger video display. Two or more video/data projectors are used to create a single image. Edge Blending is applied to the edges of the images to insure they are merged seamlessly. This must be carefully handled to prevent image brightness problems in the overlapping areas.

Projector alignment

When edge-blending is activated a series of assignable guidelines are projected to aid image alignment (see below). These lines show overlap areas - red lines indicating the edge of the image, and green lines the edge of the blending. When the right-hand red line overlaps the left-hand green line (and vice versa), and/or the top red overlaps the bottom green (and vice versa), the lines will become yellow indicating perfect alignment.



Aspect ratio adjustment

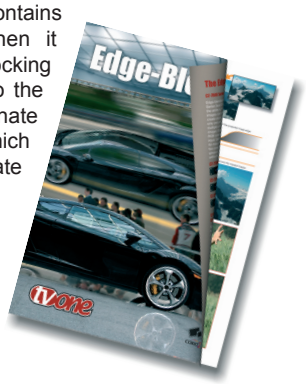
Since the original video source is probably 16:9 (or a similar aspect ratio), it will also be necessary to change the vertical zoom value differently to the horizontal one. This is best done after projector alignment and is easily achieved using the 'Aspect adjust' settings which allows the Horizontal and Vertical zoom values to be set independently. Once the output has been adjusted on one output channel, the same values must then be applied to the other(s).

Gamma Correction

Once the projectors have perfectly aligned there may be an overlap that is slightly brighter than the rest of the image. This is most probably due to the luminance of the projectors not being perfectly linear and it will therefore be necessary to apply 'gamma correction'. Gamma correction can be applied using the Video Processor, the correction value must be the same for each channel output, unless non-matching projectors are used.

Genlocking the outputs

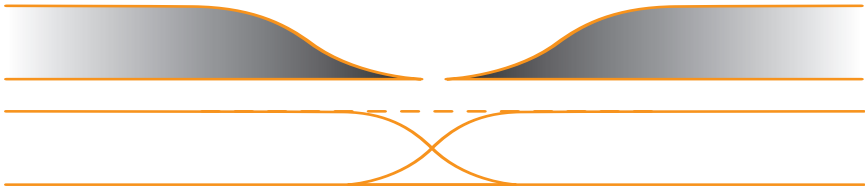
Finally, if the source contains live (moving) video then it is worthwhile genlocking one channel's output to the other's - this will eliminate any line or frame drift, which may cause frame-rate conversion problems.



For more information on Edge Blending visit http://www.tvone.com/info_request.shtml and request a brochure.

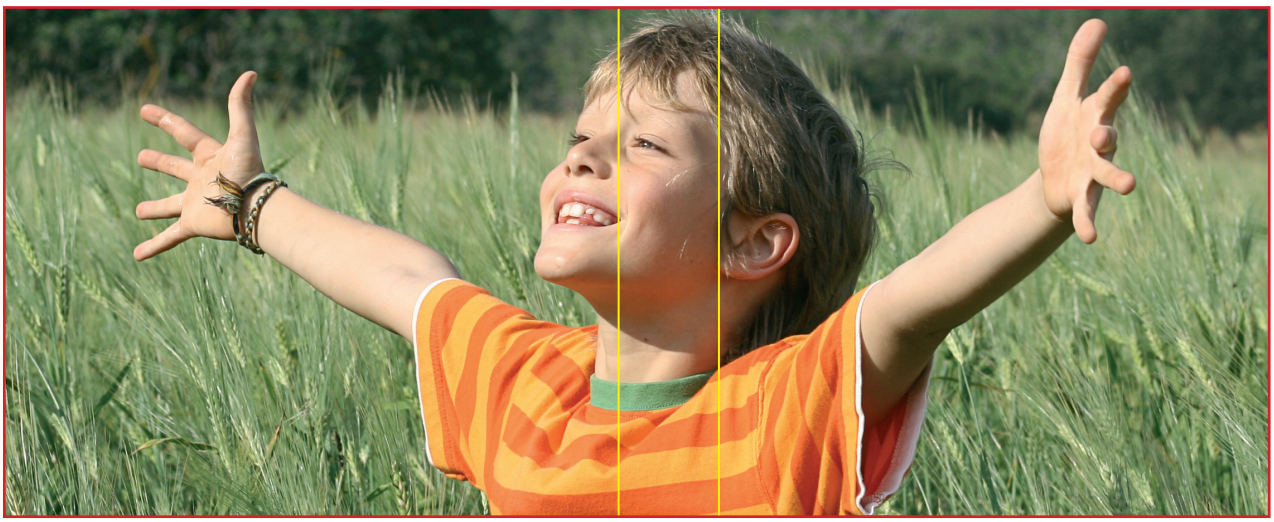
Aligning two images to overlap without edge-blending results in a bright overlapping area.

◀ *Edge blending gradually reduces the briightness of the projected image edge.*



▼ *When correctly aligned, this results in even illumination across the merged images.*

The images are perfectly aligned when the green and red guidelines (right) overlap and turn yellow (below)



CORIOflex Systems

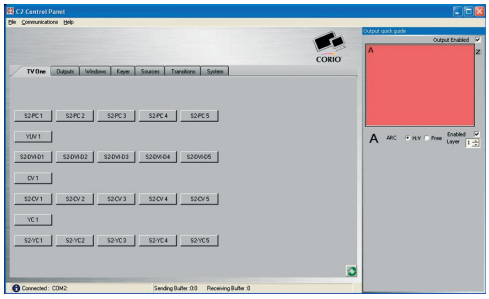
TV One's CORIOflex system revolutionizes the video processing industry. Integrators can now be the true architects of their installation by using CORIOflex modules to construct the system that fits their installation needs exactly. CORIOflex empowers integrators to decide the number and type of inputs, outputs and features an install needs.

CORIOflex is designed so that one C2 video processor acts as a base unit and a variety of S2 Expansion units can be added to make a switcher/scaler known as a CORIOflex system. The beauty of this modular approach to building systems is, as the name implies, its flexibility. There are a multitude of system combinations and by interchanging or adding further units, an installation can be modified or expanded with great ease making it extremely cost effective.

Choosing the building blocks of your system

Although they are capable of operating as stand-alone video and audio switchers, the S2-Series Input Expansion Switchers are primarily designed to work in conjunction with any C2-1000 or C2-2000 Series Video Switcher/Scaler. By connection to the host C2 unit via the Options Connector, the S2 unit becomes fully integrated into the control system of the C2 unit and provides additional inputs of a wide variety of signal types.

S2 units are available in several different video format types. Integrators can choose the model with the desired number of inputs to suit the install. There are also models with or without stereo audio. The S2-106AD provides advanced audio processing (balanced or unbalanced), including variable delay. Only one S2 unit within each format group (PC, CV, YC, SDI or DVI) may be included in any single configuration. For example, if an S2-105PC is selected, that precludes the use of an S2-105PCA, S2-109PC or another S2-105PC. However, the configuration may include one S2 unit from each of the multiple format groups of S2 units, such as one PC unit, one CV unit, one YC unit, one DVI unit and one SDI unit. The C2 scaler supplies enough power via the Options Connector for one 5-Input S2 unit. Additional S2 units may be powered by the provided power adapter or the optional P2-105 Multi-Power Module.



Windows Control Panel

The Windows Control Panel is a software controller that can be used with all the C2 Series Video Switcher/Scalers. When S2 units are connected to a C2 unit the Windows Control Panel recognizes the C2 unit and all the connected Input Expansion Switchers as a single Multi-format Seamless Switcher. In the example above the Windows Control Panel has automatically detected the four S2 units that are connected to the C2 unit.

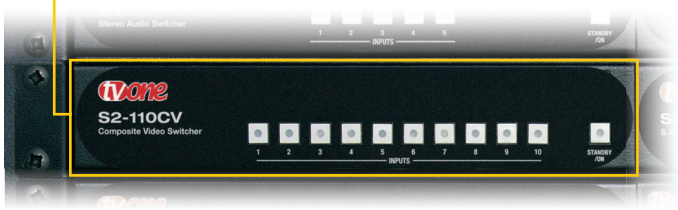
For more information on CORIOflex Systems visit http://www.tvone.com/info_request.shtml and request a brochure.

Configuring the system …

Because all interconnections are external and recognition is automatic, configuring a CORIOflex system is as simple as plugging in the Options Interconnect Cables and Video & Audio Interconnect Cables. Since the outputs of the S2 units are connected to the inputs of the C2 unit, one input of the overall system is lost for each S2 added. For example, the C2-2255 has two Composite Video inputs, when the output of an S2-105CVA is attached to the input of the input of the C2-2255, it occupies one of the C2 Composite Video inputs, so the system total is now six Composite Video inputs. In the example below, the CORIOflex system provides 5 x DVI inputs, 8 HD/SD-SDI inputs, 5 Stereo Audio inputs with delay, 5 x RGB/YPbPr inputs, 6 x CV inputs and 6 x YC inputs.

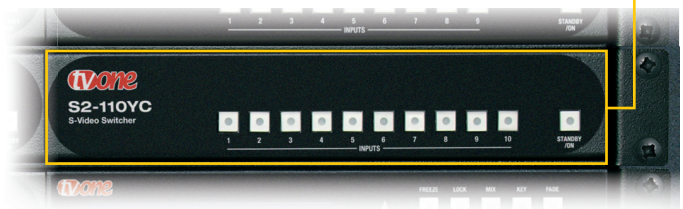
▶ The 'keystone' of any CORIOflex system is a C2 Series Video Switcher/Scaler. The choice of a C2-1000 or C2-2000 is dependent on the system requirements.

◀ The S2-106AD provides 6 stereo audio inputs which can be assigned to any video input within a system along with independent gain and delay control for each input. Five inputs are either balanced or unbalanced. The sixth input is a mini-jack for PC audio. The stereo output is available balanced and unbalanced.



◀ If the CORIOflex system being designed needs more CV inputs but does not require as many audio inputs then the S2-110CV could replace the S2-105CVA.

▶ The S2-110YC can accommodate up to ten VCRs, DVDs or any other S-Video source. Should your setup be more modest, the S2-105YC provides five inputs while the S2-105YCA offers five inputs plus audio.



Video Switcher/ Scalers - C2 Models

These multi-format products provide video signal conversion and glitch-free switching between a variety of computer and video input signal formats. All C2 products are based on our exclusive CORIO®2 conversion technology and are capable of dealing with virtually any type of analog or digital video signal. Some models go well beyond scaling and switching and include Picture-in-Picture, Keying and Mixing. A key step in the process of up-converting NTSC or PAL video signals is de-interlacing the incoming video and converting it into a progressive scan signal. These products include motion compensation, 3:2 pull-down and aspect ratio conversion. They are also compatible with the S2 Series of Input Expansion Modules.

C2 Switcher/Scalers Comparison Chart

Model	C2-2350A	C2-2355A	C2-2250A	C2-2255A	C2-2200A	C2-2205A	C2-1350	C2-1250	C2-1200	C2-260	1T-C2-250	1T-C2-200	1T-C2-400
Video Conversion Direction (Up ▲, Down ▼, Cross ✖)	▲ ▼ ✖		▲ ✖		▲ ✖		▲ ▼ ✖	▲ ✖	▲	▲ ✖	▲		✖
VIDEO INPUTS	5	6	7	8	7	8	4	6	6	5	3		1
Scalable Signal Types/Connector													
Analog RGB/YPbPr via HD15	1		1		1		1	1	1	1	1		1
Analog RGB/YPbPr via 5-BNC													
Analog RGB, YPbPr via DVI-I													
DVI-D RGB/YPbPr via DVI-I	1		1		1								
YUV/YPbPr via 3-BNC	1		1		1		1	1	1				
Composite Video via BNC	1		2		2		1	2	2	2	1		
YC (S-Video) via 4-Pin Mini-DIN	1		2		2		1	2	2	2	1		
Analog Component via 3-RCA													
SD/HD-SDI via BNC		1		1		1							
PC Res. to 2048x2048, HD to 1080p	✓		✓		✓		✓	✓	✓	✓	✓		✓
VIDEO OUTPUTS	4	5	2		2		4	2	2	1	1		1
Signal Type/Connector													
RGB/YPbPr via HD15	1		1		1		1	1	1	1	1		1
RGB/YPbPr/YUV via 5-BNC							1	1	1				
DVI or Analog RGB, YPbPr,YUV via DVI-I	1		1		1								
YUV/YPbPr via 3-BNC													
Composite Video via BNC	1						1						
YC (S-Video) via 4-Pin Mini-DIN	1						1						
SD/HD-SDI via BNC		1											
PC Res. to 2048x2048, HD to 1080p	✓		✓		✓		✓	✓	✓	✓	✓		✓
FEATURES													
Video Processing Channels	1		1		1		1	1	1	1	1		1
RS-232 Interface	✓		✓		✓		✓	✓	✓	✓	✓		✓
Infrared Remote Optional	✓		✓		✓		✓	✓	✓	✓	✓		✓
IP Interface	✓		✓		✓								
Chromakey, Lumakey, Mix	✓		✓				✓	✓		✓	✓		
Picture-in-Picture (PIP) Windows	✓		✓				✓	✓		✓	✓		
Transitions (Special Effects, Cut or Fade)	✓		✓				✓	✓					
Transitions by Cut only					✓				✓	✓			
Genlock	✓		✓				✓	✓		✓	✓		
Edge Blending	✓		✓		✓		✓	✓		✓			
CC-300 CORIOconsole compatible	✓		✓		✓		✓	✓	✓	✓	✓		✓
S2 Input Expansion Units compatible	✓		✓		✓		✓	✓	✓				
Integral Audio Passive Switcher	4x1		4x1		4x1		4x1	4x1	4x1				
Form Factor	½ Rack		½ Rack		½ Rack		½ Rack	½ Rack	½ Rack	PCI/ISA	½ Rack		½ Rack
Rackmount	Optional		Optional		Optional		Optional	Optional	Optional	N/A	Optional		Optional

C2-2350A, C2-2355A

Universal Switcher/Scalers (▲▼✖)

Key Features C2-2350A, C2-2355A

- Up ▲, Down ▼, Cross ✖ Conversion
- Inputs: DVI RGB/YPbPr, Analog RGB via HD-15, YUV/YPbPr via 3-BNC, CV via BNC and YC
- Outputs: DVI, RGB/YPbPr, Analog RGB/YUV/YPbPr via HD-15, CV via BNC & YC
- All Input Signals are Scalable
- Automatic Incoming Resolution Detection
- AutoSet - Automatic picture sizing
- Analog RGBHV to 2048x2048, DVI to 1920x1200 @ 60Hz
- All HDTV resolutions to 1080p/60
- Multiple Worldwide Television Standards
- 3:2 Pulldown for NTSC Film Mode
- Video signal parameter adjustments
- Integral 4x1 Stereo Audio Routing Switcher
- RS-232 and IP Interface
- Windows Control Panel
- Variable Image 10X Zoom & Shrink to 10%
- Genlock With Subcarrier Phase Adjustment
- PIP, Chroma & Lumakey, Edge Blending
- Optional IR Remote Control
- Optional Single/Dual Rackmount Kit
- Optional Input Expansion with S2 Switchers
- HD/SD-SDI Input & Output (C2-2355)

C2-2350A Universal Video Switcher/Scaler is based on TV One's exclusive CORIO®2 technology and provides high quality scaling in any direction between standard video, DVI or Analog computer and HDTV signals. NTSC and PAL standards are supported. Input and Outputs can be Composite Video, YC, YUV Component, YPbPr (Progressive Scan) Component or RGB. 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. 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. The high resolution RGB/YPbPr outputs are selectable as any computer resolution up to 2048x2048 at any vertical refresh rate or any HDTV resolution up to 1080p. A wide variety of computer signal formats are available to support PC, Mac and Workstation formats. The **C2-2355A** provides HD/SD-SDI Input and Output in addition to all of the features of the C2-2350.

All the functions can be controlled via the front panel Push Buttons, an Infrared Control Remote Unit or via an RS-232 or IP connection. A Windows Control Panel is provided and most third party control systems interface directly with the entire C2 range of products. A front panel LCD makes setup easy.

PIP, Chromakey, Lumakey, Mixing and Genlock are among the advanced standard features. The Key Mode allows computer graphics to be keyed over an external Composite or YC signal. The keyed image may be faded in and out. Due to the 4:4:4 sampling format, precise keying at the pixel level can be achieved. The Mix Mode permits glitch-free mixing between the computer image and external video. The PIP Mode allows either of the computer inputs to be inset in a window over either of the video inputs or visa versa. The PIP window may be placed anywhere on the screen. The Genlock feature insures precise synchronization of the incoming signals by providing a wide Subcarrier lock range with Subcarrier phase adjustment. The C2-2000 series units are housed in desktop cases and rackmount kits are available as an option.

Edge Blending is a standard feature of the C2-2350 and C2-2355. Because of the ability to 'feather' any or all of the edges, multiple images can be aligned vertically, horizontally, or both to create unusual displays. Using multiple C2 units, a large number of images can be blended. Edge Blending is not limited to high resolution RGB computer images, but can be applied to any input. Gamma correction is employed to compensate for many of the problems faced when blending between projectors. Special preparation of the video in advance is not necessary, since all processing is done within the C2 unit.

Zooming into any area of the image, while maintaining high quality, is possible because of the unique CORIO®2 video sampling technology. Variable zoom can go up to 10x while Variable Shrink can go down to 10%, both adjustable in one pixel steps. Pixel level position controls allow accurate movement around any desired area. The advanced Digital Flicker Elimination circuitry and high sampling rate insures crisp, clear images, while full bandwidth chroma sampling insures faithfully reproduced, high resolution colors. Motion compensation and a 3:2 Pulldown feature for NTSC greatly improve the image quality.

Temporal Interpolation greatly improves conversion from one frame-rate to another by merging multiple frames of video information to create intermediate frames, which is vital for smoothly scrolling images.

Diagonal Interpolation adds to the motion-compensated de-interlacing system to further improve image quality by intelligently filling-in missing detail.

Stereo Audio switching is provided by an integral 4x1 audio routing switcher. The four impedance-independent unbalanced inputs follow the video input selection. A rear panel terminal block provides access.

C2-2350A/2355A Specifications

Video Inputs

Television Standards	NTSC, PAL, PAL-M, PAL-N, SECAM
Composite Video	1x via BNC
YC (S-Video)	1x via 4-Pin Mini-DIN Connector
YUV /YPbPr	1x via 3-BNC
SDI (SMPTE 259M/292M)	1x via BNC (C2-2355A)

Computer Inputs (2x)

Signal Type	1x Analog via HD15 Connector 1x DVI-D via DVI-I Connector
Format	RGBHV, RGBS, RGsB, YPbPr
Sync	TTL Level, 10KΩ, Pos or Neg
Termination	Auto-terminating into 75Ω
R-G-B Level Range	0.5-2.0 Vp-p
Scan Rate Detection	Automatic
Analog Signals	PC to 2048x2048,HD to 1080p/60
DVI Signals	PC to 1920x1200 @ 60Hz, HD to 1080p/60
Max Horiz Scan Rate	150KHz
Computer Compatibility	PC, Macintosh, Workstations

Video Outputs

Television Standards	NTSC, PAL, PAL-M, PAL-N, SECAM
Impedance	75Ω
Composite Video	1x via BNC
YC (S-Video)	1x via 4-PIN Mini-DIN
YUV, YPbPr	1x via 3-BNC (shared w RGB Out)
SDI (SMPTE 259M/292M)	1x via BNC (C2-2355A)

Computer Outputs (2x)

Signal Type	1x Analog via HD15 Connector (C2-2350A) 1x DVI-I via DVI-I Connector

General

Format	RGBHV, RGBS, RGsB, YPbPr
R-G-B Level	0.7 Vp-p
Analog Signals	PC to 2048x2048,HD to 1080p/60
DVI Signals	PC to 1920x1200,HD to 1080p/60
Vertical Refresh Rate	Any to 250Hz
Size and Position	Automatic via AutoSet or Manual
Image Size	User-Definable Presets
Image Freeze	One Video Frame
Settings Memory	Non-Volatile
Zoom Range	Variable to 10X Zoom
Shrink Range	Variable to 10%
Image Mirroring	Horizontal and/or Vertical
Horizontal Filtering	Full Digital
Conversion Technology	Proprietary – CORIO®2
Frame Rate Conversion	Temporal
Color Resolution	24-bit (16.8 Million Colors)
Sampling Rate	162MHz
Digital Sampling	24-bit, 4:4:4 format
Firmware Memory	Flash, Upgradeable via RS-232
Video Encoder	8-bit Digital
Video Decoder	9-bit Digital
De-Interlacing (NTSC-PAL)	Pixel-level Motion Adaptive
Comb Filter Decoding	Adaptive
DVI I/O	HDCP Compliant

General (Continued)

Film Mode (NTSC)	3:2 Pulldown
Video Adjustments	Contrast, Brightness, Saturation, Hue (NTSC), R-G-B Levels

SDI Jitter

SMPTE259M-C	(270Mbps: 525/625 Line) Jitter 0.070 +/-0.01 UI
SMPTE292M	(1.485/1.4835Gpbs: 720p, 1035i, 1080i, 1080p) Jitter 0.176 +/-0.02 UI

Audio Input/Output

Inputs	4x Unbalanced via Terminals
Output	Unbalanced via Terminals

Operational Modes

Key	Chromakey or Lumakey
Mix	PC to/from Video
PIP	Variable Window Size & Position

Genlock Adjustments

Subcarrier Lock Range	+/- 200Hz for NTSC Operation (+/- 250Hz for PAL Operation)
Subcarrier Phase	+/- 180° Adjustment

Control Methods

Local	via Front Panel Buttons & OSD
RS-232 Interface	via D9 Female Connector
IP Interface	RJ45 Connector
Infrared Remote	via IRC-4 Remote Unit
Input Expansion Control	via D-15 Options Connector

Warranty

Limited Warranty	2 Years Parts and Labor

Regulatory Compliance

Main Units	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Mechanical

Size (H-W-D)	41.5x218x150mm(1.63"x8.6"x5.9")
C2-2350A Weight (Net)	1.28kg (2.82 lbs)
C2-2355A Weight (Net	1.30kg (2.86 lbs)

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

Power Requirement

External Power Supply	12VDC@1A

Accessories Included

1x Operations Manual	C2-2000 Series
1x Power Adapter	US, UK or Euro

Product Item Numbers

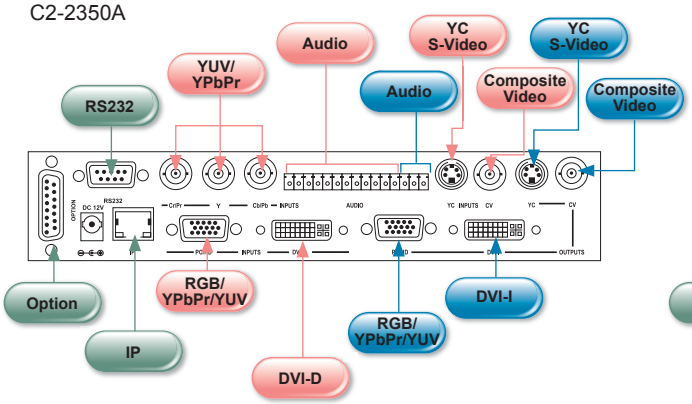
C2-2350A	Universal Video Switcher/Scaler
C2-2355A	w/HD/SD-SDI Input & Output

Optional Accessories

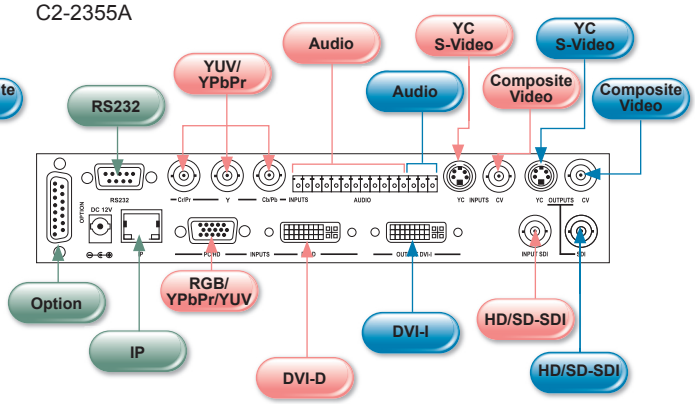
IRC-5	Infrared Remote Control
RM-220	Single/Dual Rackmount Kit
S2 Series	Input Expansion Switchers
1x Control Software	Downloadable from website

Control Interface | Input | Output | Input/ Output

C2-2350A



C2-2355A



C2-1350

Universal Switcher/Scaler (▲▼✖)

Key Features C2-1350

- Up ▲, Down ▼, Cross ✖ Conversion
- Inputs: RGB/YPbPr via HD-15, YUV/YPbPr via 3-BNC, CV via BNC, YC via 4-Pin
- Outputs include: two RGB/YUV/YPbPr via HD15 & 5-BNC, one CV via BNC & one YC
- All Input Signals are Scalable
- Automatic Incoming Resolution Detection
- AutoSet - Automatic picture sizing
- Analog RGBHV to 2048x2048
- All HDTV resolutions to 1080p/60
- Multiple Worldwide Television Standards
- 3:2 Pulldown for NTSC Film Mode
- Video signal parameter adjustments
- Integral 4x1 Stereo Audio Routing Switcher
- RS-232 Interface
- Windows Control Panel
- Variable Image 10X Zoom & Shrink to 10%
- Genlock With Subcarrier Phase Adjustment
- PIP, Chroma & Lumakey, Edge Blending
- Optional IR Remote Control
- Optional Single/Dual Rackmount Kit
- Optional Input Expansion with S2 Switchers

C2-1350 Universal Video Scaler is based on TV One's exclusive CORIO®2 technology and provides high quality up, down and cross conversion between standard video, computer and HDTV signals. NTSC and PAL standards are supported. Inputs can be Composite Video, YC, YUV Component, YPbPr (Progressive Scan) Component or RGB. 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. 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. The high resolution RGB/YPbPr outputs are selectable as any computer resolution up to 2048x2048 at any vertical refresh rate or any HDTV resolution up to 1080p. A wide variety of computer signal formats are available to support PC, Mac and Workstation formats. In the standard resolution mode, simultaneous outputs are available for Composite, YC and YUV Component.

PIP, Chromakey, Lumakey, Mixing and Genlock are among the advanced standard features. The Key Mode allows computer graphics to be keyed over an external Composite or YC signal or visa versa. The keyed image may be faded in and out. Due to the 4:4:4 sampling format, precise keying at the pixel level can be achieved. The Mix Mode permits glitch-free mixing between the computer image and external video. The PIP Mode allows either of the computer inputs to be inset in a window over either of the video inputs or visa versa. The PIP window may be placed anywhere on the screen. The Genlock feature insures precise synchronization of the incoming signals by providing a wide Subcarrier lock range with Subcarrier phase adjustment. The C2-1350 is housed in a desktop case with an optional rackmount kit.

Edge Blending is a standard feature of the C2-1350. Because of the ability to 'feather' any or all of the edges, multiple images can be aligned vertically, horizontally or both to create unusual displays. Using multiple units, a large number of images may be blended. Edge Blending is not limited to high resolution RGB computer images, but can be applied to any input. Gamma correction is employed to compensate for many of the problems faced when blending between projectors. Special preparation of the video in advance is not necessary, since all processing is done within the unit.

All the functions can be controlled via the front panel Push Buttons, an Infrared Control Remote Unit or via an RS-232 connection. A Windows Control Panel is provided and most third party control systems interface directly with the entire C2 range of products. An On-Screen Display is available to assist in setup. Variable Zoom to 10X allows you to enlarge any part of the computer screen to fill the entire video screen and position controls allow you to move around to any area desired. Variable Shrink to as little as 10% allows the image to fit onto most displays. The advanced Digital Flicker Elimination circuitry and high sampling rate insures crisp, clear images, while full bandwidth chroma sampling insures faithfully reproduced, high resolution colors. Motion compensation and a 3:2 Pulldown feature for NTSC greatly improve image quality.

Temporal Interpolation greatly improves conversion from one frame-rate to another by merging multiple frames of video information to create intermediate frames, which is vital for smoothly scrolling images.

Stereo Audio switching is provided by an integral 4x1 audio routing switcher. The four impedance-independent unbalanced inputs follow the video input selection. A rear panel terminal block provides access.

C2-1350 Specifications

Video Inputs

Television Standards	NTSC, PAL, PAL-M, PAL-N, SECAM
Composite Video	1x via BNC
YC (S-Video)	1x via 4-Pin Mini-DIN Connector
YUV /YPbPr	1x via 3-BNC

Computer Input

RGB/YPbPr	1x via HD15
Format - Analog	RGBHV, RGBS, RGsB, YPbPr
Sync	TTL Level, 10KΩ, Pos or Neg
Termination	Auto-terminating into 75Ω
R-G-B Level Range	0.5-2.0 Vp-p
Scan Rate Detection	Automatic
PC Resolutions	Any up to 2048x2048
HDTV Resolutions	Any up to 1080p/60
Max Horiz Scan Rate	150KHz
Computer Compatibility	PC, Macintosh, Workstations

Video Outputs

Television Standards	NTSC, PAL, PAL-M, PAL-N, SECAM
Impedance	75Ω
Composite Video	1x via BNC
YC (S-Video)	1x via 4-PIN Mini-DIN
YUV, YPbPr	1x via 3-BNC (shared w RGB Out)

Computer Outputs (2x)

Format - Analog	RGBHV, RGBS, RGsB, YPbPr
Connectors	1x HD-15 Female and 1x 5-BNC
R-G-B Level	0.7 Vp-p
PC Resolutions	Any up to 2048x2048
HDTV Resolutions	Any up to 1080p
Vertical Refresh Rate	Any to 250Hz

General

Size and Position	Automatic via AutoSet or Manual
Image Size	User-Definable Presets
Image Freeze	One Video Frame
Settings Memory	Non-Volatile
Zoom Range	Variable to 10X Zoom
Shrink Range	Variable to 10%
Image Mirroring	Horizontal and/or Vertical
Horizontal Filtering	Full Digital
Conversion Technology	Proprietary – CORIO®2
Color Resolution	24-bit (16.8 Million Colors)
Frame Rate Conversion	Temporal
Sampling Rate	108MHz
Digital Sampling	24-bit, 4:4:4 format
Firmware Memory	Flash, Upgradeable via RS-232
Video Encoder	8-bit Digital
Video Decoder	9-bit Digital
De-Interlacing (NTSC-PAL)	Pixel-level Motion Adaptive
Comb Filter Decoding	Adaptive
Film Mode (NTSC)	3:2 Pulldown
Video Adjustments	Contrast, Brightness, Saturation, Hue (NTSC), R-G-B Levels

Audio Input/Output

Inputs	4x Unbalanced via Terminals
Output	Unbalanced via Terminals

Operational Modes

Key	Chromakey or Lumakey
Mix	PC to/from Video
PIP	Variable Window Size & Position

Genlock Adjustments

Subcarrier Lock Range	+/- 200Hz for NTSC Operation (+/- 250Hz for PAL Operation)
Subcarrier Phase	+/- 180° Adjustment

Control Methods

Local	via Front Panel Buttons & OSD
RS-232 Interface	via D9 Female Connector
Infrared Remote	via IRC-5 Remote Unit
Input Expansion Control	via D-15 Options Connector

Warranty

Limited Warranty	2 Years Parts and Labor

Regulatory Compliance

Main Units	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Mechanical

Size (H-W-D)	41.5x218x150mm(1.63"x8.6"x5.9")
Weight (Net)	1.26kg (2.77 lbs)

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

Power Requirement

External Power Supply	12VDC@1A

Accessories Included

1x Operations Manual	C2-1000 Series
1x Power Adapter	US, UK or Euro

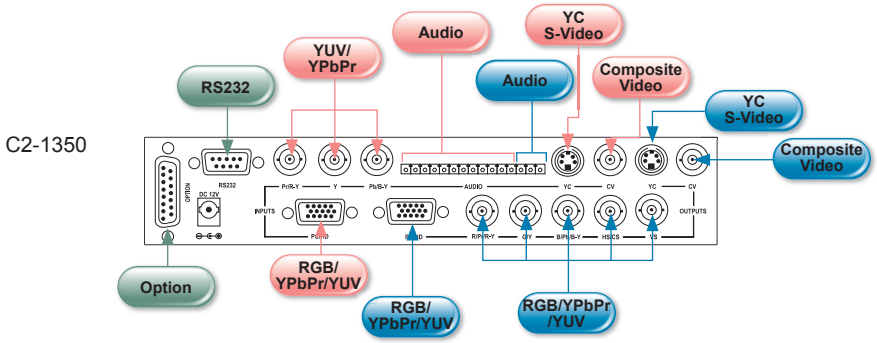
Product Item Numbers

C2-1350	Universal Video Switcher/Scaler

Optional Accessories

IRC-5	Infrared Remote Control
RM-220	Single/Dual Rackmount Kit
S2 Series	Input Expansion Switchers
1x Control Software	Downloadable from website

Control Interface | Input | Output | Input/ Output



C2-2200A, C2-2205A
C2-2250A, C2-2255A

Video Switcher/Scalers (▲×)

Key Features

- Up ▲, Cross ✖ Conversion
- Automatic Incoming Resolution Detection
- Analog Computer In via HD-15 Connector
- DVI-D Computer Input via DVI-I Connector
- Inputs: 2xCV, 2xYC (S-Video), 1xYUV/ YPbPr Component
- 2x Outputs: DVI-I and Analog RGBYPbPr
- Scaling of the RGB or YPbPr input signal
- Analog RGBHV to 2048x2048, DVI to 1920x1200 @ 60Hz
- All HDTV resolutions to 1080p/60
- AutoSet - Automatic picture sizing
- Multiple Worldwide Television Standards
- Integral 4x1 Stereo Audio Routing Switcher
- RS-232 and IP Interface
- Windows Control Panel
- Variable Image 10X Zoom & Shrink to 10%
- Optional IR Remote Control
- Optional Single/Dual Rackmount Kit
- Optional Expansion for Additional Inputs
- PIP, Chromakey and Lumakey, Edge Blending (C2-2250A, C2-2255A)
- HD/SD-SDI Input (C2-2205A, C2-2255A)

C2-2200A Video Switcher/Scaler is based on TV One's exclusive CORIO®2 technology and provides high quality scaling to Analog or DVI Computer or HDTV signals. NTSC and PAL video standards are supported. Video Inputs are two Composite, two YC and one YUV Component or YPbPr. A computer bypass is also provided. RGB/YPbPr Scaling permits the computer input signals to be scaled with the same flexibility as the video inputs. The output is selectable as any computer resolution up to 2048x2048 at any vertical refresh rate and all HDTV resolutions up to 1080p. A wide variety of computer signal formats are available to support PC, Mac and Workstation formats. Additional to the **C2-2205A** version is a HD/SD-SDI Input.

Temporal Interpolation greatly improves conversion from one frame-rate to another by merging multiple frames of video information to create intermediate frames, which is vital for smoothly scrolling images.

Diagonal Interpolation adds to the motion-compensated de-interlacing system to further improve image quality by intelligently filling-in missing detail.

All the functions can be controlled via the front panel Push Buttons, an Infrared Remote Control Unit or via an RS-232 or IP connection. A Windows Control Panel is provided and most third party control systems interface directly with the entire C2 range of products. A front panel LCD makes setup easy.

Variable Zoom to 10X allows you to enlarge any part of the video image to fill the entire computer screen and position controls allow you to move around to any area desired. Variable Shrink to as little as 10% allows fitting the image onto most displays. The high sampling rate insures crisp, clear images, while full bandwidth chroma sampling insures faithfully reproduced, high res colors.

Stereo Audio switching is provided by an integral 4x1 audio routing switcher. The four impedance-independent unbalanced inputs follow the video input selection. A rear panel terminal block provides access.

C2-2250A Video Scaler PLUS has all the functions and features of the C2-2200A and adds a wide variety of additional capabilities, including PIP, Chromakey, Lumakey and Mixing. The Key Mode allows computer graphics to be keyed over an external Composite or YC signal or vice versa. The keyed image may be faded in and out. Due to the 4:4:4 sampling format, precise keying at the pixel level can be achieved. The Mix Mode permits glitch-free mixing between the computer image and external video. The PIP Mode allows either of the video inputs to be inset in a window over either of the computer inputs. Additional to the **C2-2255A** version is a HD/SD-SDI Input.

Temporal Interpolation greatly improves conversion from one frame-rate to another by merging multiple frames of video information to create intermediate frames, which is vital for smoothly scrolling images.

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. All settings are stored in non-volatile memory and are retained even when power is switched off. Optional rackmount kits are available for all C2-2000A models.

C2-2200/05A, C2-2250/55A Specifications

Video Inputs

Television Standards	NTSC, PAL, PAL-M, PAL-N, SECAM
Composite Video	2x via BNC
YC (S-Video)	2x via 4-Pin Mini-DIN
YUV /YPbPr	1x via 3-BNC
SDI (SMPTE 259M/292M)	1x via BNC (C2-2205A, C2-2255A)

Computer Inputs

Signal Type	1x Analog via HD-15 Female 1x DVI-D via DVI-I Connector
Format	RGBHV, RGBS, RGsB, YPbPr
Sync	TTL Level, 10KΩ, Pos or Neg
Termination	Auto-terminating into 75Ω
R-G-B Level Range	0.5-2.0 Vp-p
Scan Rate Detection	Automatic
Analog Signals	PC to 2048x2048,HD to 1080p/60
DVI Signals	PC to 1920x1200 @ 60Hz, HD to 1080p/60
Max Horiz Scan Rate	150KHz
Computer Compatibility	PC, Macintosh, Workstations

Computer Outputs

Signal Type	1x Analog via HD-15 Connector 1x DVI-I via DVI-I Connector
Format	RGBHV, RGBS, RGsB, YPbPr
R-G-B Level	0.7 Vp-p
Analog Signals	PC to 2048x2048,HD to 1080p/60
DVI Signals	PC to 1920x1200 @ 60Hz, HD to 1080p/60
Vertical Refresh Rate	Any to 250Hz

General

Size and Position	Automatic via AutoSet or Manual
Image Size	User-Definable Presets
Image Freeze	One Video Frame
Settings Memory	Non-Volatile
Zoom Range	Variable to 10X Zoom
Shrink Range	Variable to 10%
Image Mirroring	Horizontal and/or Vertical
Horizontal Filtering	Full Digital
Conversion Technology	Proprietary – CORIO®2
Frame Rate Conversion	Temporal
Color Resolution	24-bit (16.8 Million Colors)
Sampling Rate	162MHz
Digital Sampling	24-bit, 4:4:4 format
Firmware Memory	Flash, Upgradeable via RS-232
Video Decoder	9-bit Digital
De-Interlacing (NTSC-PAL)	Pixel-level Motion Adaptive
Comb Filter Decoding	Adaptive
Film Mode (NTSC)	3:2 Pulldown
Video Adjustments	Contrast, Brightness, Saturation, Hue (NTSC), R-G-B Levels
DVI I/O	HDCP Compliant

Audio Input/Output

Inputs	4x Unbalanced via Terminals
Output	Unbalanced via Terminals

Operational Modes (C2-2250A, C2-2255A)

Key	Chromakey or Lumakey
Mix	PC to/from Video
PIP	Variable Window Size & Position

Control Methods

Local	via Front Panel Buttons & OSD
RS-232 Interface	via D9 Female Connector
IP Interface	RJ45 Connector
Infrared Remote	via IRC-4 Remote Unit
Input Expansion Control	via D-15 Options Connector

Warranty

Limited Warranty	2 Years Parts and Labor

Regulatory Compliance

Main Units	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Mechanical

Size (H-W-D)	41.5x218x150mm(1.63"x8.6"x5.9")
C2-2200 Weight (Net)	1.28kg (2.82 lbs)
C2-2205 Weight (Net)	1.32kg (2.90 lbs)
C2-2250 Weight (Net)	1.28kg (2.82 lbs)
C2-2255 Weight (Net)	1.30kg (2.86 lbs)

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

Power Requirement

External Power Supply	12VDC@1A

Accessories Included

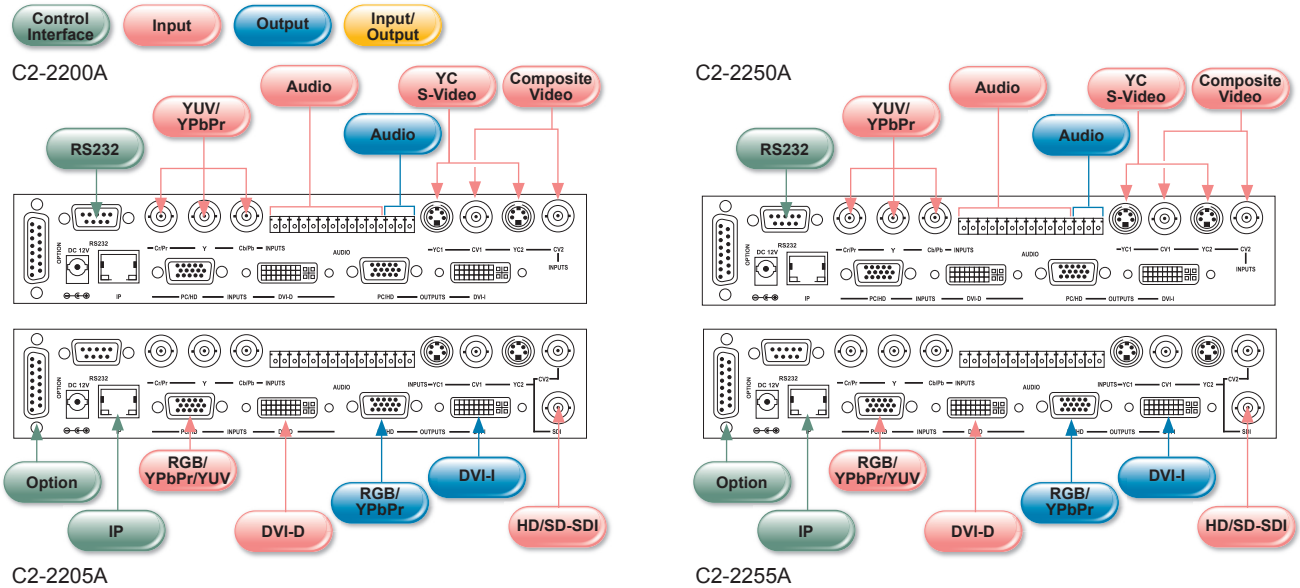
1x Operations Manual	C2-2000A Series
1x Power Adapter	US, UK or Euro

Product Item Numbers

C2-2200A	Video Switcher/Scaler
C2-2205A	Video Switcher/Scaler w/HD/SD-SDI In
C2-2250A	Video Switcher/Scaler PLUS
C2-2255A	Video Sw Scaler PLUS w/HD/SD-SDI In

Optional Accessories

IRC-5	Infrared Remote Control
RM-220	Single/Dual Rackmount Kit
S2 Series	Input Expansion Switchers
1x Control Software	Downloadable from website



C2-1200, C2-1250

Video Switcher/Scalers (▲, ✖- C2-1250)

Key Features C2-1200, C2-1250

- Up ▲ (Cross ✖ - C2-1250 only) Conversion
- Automatic Incoming Resolution Detection
- Inputs: 2x CV, 2x YC (S-Video), 1x RGB, 1x YUV/YPbPr Component
- Outputs: 2x RGB or YPbPr, 1x UTP
- Analog RGBHV to 2048x2048
- All HDTV resolutions to 1080p/60
- Multiple Worldwide Television Standards
- Integral 4x1 Stereo Audio Routing Switcher
- RS-232 Interface
- Windows Control Panel
- Variable Image 10X Zoom & Shrink to 10%
- Optional IR Remote Control
- Optional Single/Dual Rackmount Kit
- Optional Expansion for Additional Inputs
- Scaling of the RGB or YPbPr Input Signal
- PIP, Chromakey and Lumakey, Edge Blending (C2-1250)
- AutoSet - Automatic picture sizing (C2-1250)

C2-1200 Video Switcher/Scaler is based on TV One's exclusive CORIO®2 technology and provides high quality up conversion from standard video formats to Computer or HDTV signals. NTSC and PAL video standards are supported. Video Inputs are two Composite, two YC or one YUV Component or YPbPr. A computer bypass is also provided. The output is selectable as any computer resolution up to 2048x2048 at any vertical refresh rate and all HDTV resolutions up to 1080p. A wide variety of computer signal formats are available to support PC, Mac and Workstation formats.

A unique feature of this unit is the UTP output that supports RGB, RGBs, RGsB, YPbPr output at a range of up to 300 meters (1000'), to allow simple integration into existing wiring structures.

All the functions can be controlled via the front panel Push Buttons, an Infrared Remote Control Unit or via an RS-232 connection. A Windows Control Panel is provided and most third party control systems interface directly with the entire C2 range of products. An On-Screen Display is available to assist in setup.

Variable Zoom to 10X allows you to enlarge any part of the video image to fill the entire computer screen and position controls allow you to move around to any area desired. Variable Shrink to as little as 10% allows fitting the image onto most displays. The full bandwidth chroma sampling insures faithfully reproduced, high resolution colors.

Stereo Audio switching is provided by an integral 4x1 audio routing switcher. The four impedance-independent unbalanced inputs follow the video input selection. A rear panel terminal block provides access.

C2-1250 Video Switcher/Scaler PLUS has all the functions and features of the C2-1200 and adds a wide variety of additional capabilities, including scaling of the RGB or YPbPr input, Genlock, PIP, Chromakey, Lumakey and Mixing. The Key Mode allows computer graphics to be keyed over an external Composite or YC signal or vice versa. The keyed image may be faded in and out. Due to the 4:4:4 sampling format, precise keying at the pixel level can be achieved. The Mix Mode permits glitch-free mixing between the computer image and external video. The PIP Mode allows either of the video inputs to be inset in a window over the full computer input.

Temporal Interpolation greatly improves conversion from one frame-rate to another by merging multiple frames of video information to create intermediate frames, which is vital for smoothly scrolling images.

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. All settings are stored in non-volatile memory and are retained even when power is switched off. Optional rackmount kits are available for all C2-1000 models.

C2-1200/1250 Specifications

Video Inputs

Television Standards	NTSC, PAL, PAL-M, PAL-N, SECAM
Composite Video	2x via BNC
YC (S-Video)	2x via 4-Pin Mini-DIN Connector
YUV/YPbPr	1x via 3-BNC

Computer Input

(C2-1250 Only)

RGB/YPbPr	1x via HD15
Format - Analog	RGBHV, RGBS, RGsB, YPbPr
Sync	TTL Level, 10KΩ, Pos or Neg
Termination	Auto-terminating into 75Ω
R-G-B Level Range	0.5-2.0 Vp-p
Scan Rate Detection	Automatic
PC Resolutions	Any up to 2048x2048
HDTV Resolutions	Any up to 1080p/60
Max Horiz Scan Rate	150KHz
Computer Compatibility	PC, Macintosh, Workstations

Computer Output

Format - Analog	RGBHV, RGBS, RGsB, YPbPr, UTP
Connectors	1x HD-15 Female, 1x 5-BNC and 1x RJ45 (UTP)
R-G-B Level	0.7 Vp-p
PC Resolutions	Any up to 2048x2048
HDTV Resolutions	Any up to 1080p
Vertical Refresh Rate	Any to 250Hz

General

Size and Position	Automatic via AutoSet or Manual
Image Size	User-Definable Presets
Image Freeze	One Video Frame
Settings Memory	Non-Volatile
Zoom Range	Variable to 10X Zoom
Shrink Range	Variable to 10%
Image Mirroring	Horizontal and/or Vertical
Horizontal Filtering	Full Digital
Frame Rate Conversion	Temporal (1250 only)
Conversion Technology	Proprietary – CORIO®2
Color Resolution	24-bit (16.8 Million Colors)
Digital Sampling	24-bit, 4:4:4 format
Firmware Memory	Flash, Upgradeable via RS-232
Video Decoder	9-bit Digital
De-Interlacing (NTSC-PAL)	Pixel-level Motion Adaptive
Comb Filter Decoding	Adaptive
Film Mode (NTSC)	3:2 Pulldown
Video Adjustments	Contrast, Brightness, Saturation, Hue (NTSC), R-G-B Levels

Audio Input/Output

Inputs	4x Unbalanced via Terminals
Output	Unbalanced via Terminals

Operational Modes

(C2-1250)

Key	Chromakey or Lumakey
Mix	PC to/from Video
PIP	Variable Window Size & Position

Control Methods

Local	via Front Panel Buttons & OSD
RS-232 Interface	via D9 Female Connector
Infrared Remote	via IRC-5 Remote Unit

Warranty

Limited Warranty	2 Years Parts and Labor

Regulatory Compliance

Main Units	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Mechanical

Size (H-W-D)	41.5x218x150mm(1.63"x8.6"x5.9")
Weight (Net)	1.26 kg (2.77 lbs)

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

Power Requirement

External Power Supply	12VDC@1A

Accessories Included

1x Operations Manual	C2-1000 Series
1x Power Adapter	US, UK or Euro

Product Item Numbers

C2-1200	Video Switcher/Scaler
C2-1250	Video Switcher/Scaler PLUS

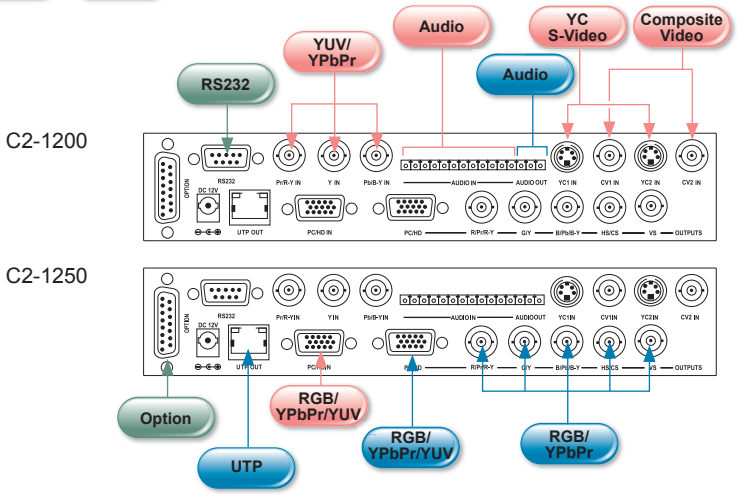
Optional Accessories

IRC-5	Infrared Remote Control
RM-220	Single/Dual Rackmount Kit
S2 Series	Input Expansion Switchers
1x Control Software	Downloadable from website

Compatible UTP Receivers

1T-CT-442	RGBHV - 150 meters (500' max)
1T-CT-444	RGBHV - 300 meters (1000' max)
1T-CT-464	YPbPr - 150 meters (500' max)

Control Interface | Input | Output | Input/ Output

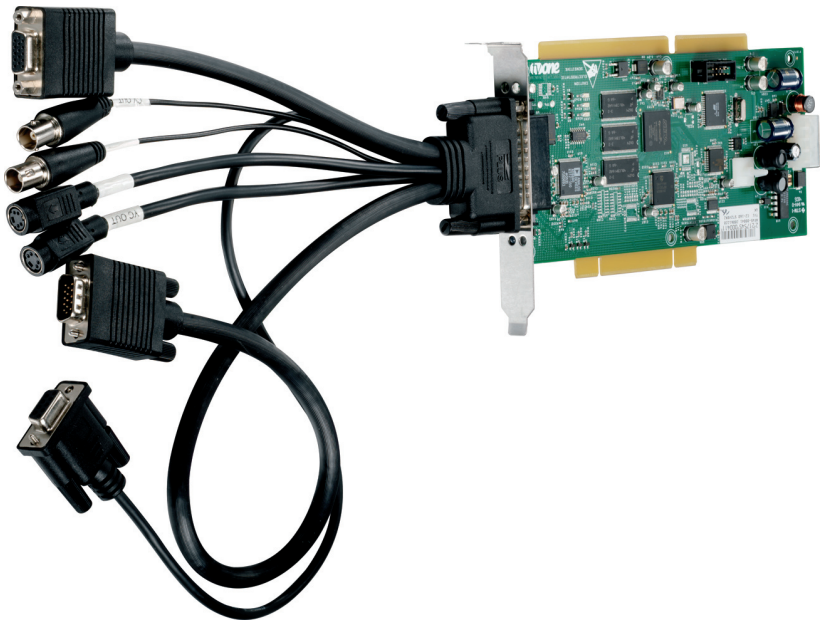


C2-260

Video Switcher/Scaler (▲✖)

Key Features C2-260

- Up ▲, Cross ✖ Conversion
- Automatic Incoming Resolution Detection
- 2x CV, 2x YC, 1x RGB/YUV/YPbPr Inputs
- 1x RGB or YPbPr Output
- Multiple Worldwide Television Standards
- Computer Resolutions to 2048x2048
- All HDTV resolutions to 1080p/60
- Conrol by RS-232 or IR Interface
- Windows Control Panel included
- Optional IR Remote Control
- Variable Image 10X Zoom & Shrink to 10%
- Scaling of the RGB or YPbPr Input Signal
- Mix, PIP, Chromakey and Lumakey
- Edge Blending
- AutoSet - Automatic picture sizing



C2-260 PCI/ISA Card Video Switcher/Scaler is based on TV One's exclusive CORIO®2 technology and provides high quality Up-Conversion from standard video formats (NTSC, PAL or SECAM) to Computer or HDTV signals. It also handles Cross Conversion from any PC/HD signal to any other. Video Inputs are two Composite, two YC or one RGBHV, YUV or YPbPr Component. The output is selectable as any computer resolution up to 2048x2048 at any vertical refresh rate and all HDTV resolutions up to 1080p. A wide variety of computer signal formats are available to support PC, Mac and Workstation formats.

All the functions can be controlled via a Windows Control Panel from the host PC via an RS-232 connection. An Infrared Port is located on the card's mounting plate and an optional Remote Control Unit can be used for initial setup of the unit. An OSD (On-Screen Display) is provided to assist in setup. Most third party control systems interface directly with the C2-260 as with the entire C2 range of products.

Variable Zoom to 10X allows you to enlarge any part of the video image to fill the entire computer screen and position controls allow you to move around to any area desired. Variable Shrink to as little as 10% allows the image to fit onto most displays. The full bandwidth chroma sampling insures faithfully reproduced, high resolution colors.

The C2-260 also features a wide variety of additional capabilities such as scaling of the RGB or YPbPr input, Genlock, PIP, Chromakey, Lumakey and Mixing. The Key Mode allows computer graphics to be keyed over an external Composite or YC signal or vice versa. The keyed image may be faded in and out. Due to the 4:4:4 sampling format, precise keying at the pixel level can be achieved. The Mix Mode permits glitch-free mixing between the computer image and external video. The PIP Mode allows either of the video inputs to be inset in a window over the full computer input.

Temporal Interpolation greatly improves conversion from one frame-rate to another by merging multiple frames of video information to create intermediate frames, which is vital for smoothly scrolling images.

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. All settings are stored in non-volatile memory and are retained even when power is switched off.

C2-260 Specifications

Video Inputs	(Note 1)
Television Standards	NTSC, PAL and SECAM
Composite Video	2x via BNC on Breakout Cable
YC (S-Video)	2x via 4-Pin Mini-DIN on Breakout
Computer Input	(Note 1)
RGB, YPbPr, YUV	1x via HD15
Format - Analog	RGBHV, RGBS, RGsB, YPbPr
Sync	TTL Level, 10KΩ, Pos or Neg
Termination	Into 75Ω
R-G-B Level Range	0.5-2.0 Vp-p
Scan Rate Detection	Automatic
PC Resolutions	Any up to 2048x2048
HDTV Resolutions	Any up to 1080p/60
Max Horiz Scan Rate	150KHz
Computer Compatibility	PC, Macintosh, Workstations
Computer Output	(Note 1)
Format - Analog	RGBHV, RGBS, RGsB, YPbPr
Connectors	1x HD-15 Female
R-G-B Level	0.7 Vp-p
PC Resolutions	Any up to 2048x2048
HDTV Resolutions	Any up to 1080p
Vertical Refresh Rate	Any to 250Hz
General	
Size and Position	Automatic via AutoSet or Manual
Image Size	User-Definable Presets
Image Freeze	One Video Frame
Settings Memory	Non-Volatile
Zoom Range	Variable to 10X Zoom
Shrink Range	Variable to 10%
Image Mirroring	Horizontal and/or Vertical
Horizontal Filtering	Full Digital
Frame Rate Conversion	Temporal
Conversion Technology	Proprietary – CORIO®2
Color Resolution	24-bit (16.8 Million Colors)
Digital Sampling	24-bit, 4:4:4 format
Firmware Memory	Flash, Upgradeable via RS-232
Video Decoder	9-bit Digital
De-Interlacing (NTSC-PAL)	Pixel-level Motion Adaptive
Comb Filter Decoding	Adaptive
Film Mode (NTSC)	3:2 Pulldown
Video Adjustments	Contrast, Brightness, Saturation, Hue (NTSC), R-G-B Levels
Operational Modes	
Key	Chromakey or Lumakey
Mix	PC to/from Video
PIP	Variable Window Size & Position
Control Methods	
Local	Via Included software
Infra-Red	Via Optional Remote Control
RS-232 Interface	Via D9 Female Conn. (Note 1)
Warranty	
Limited Warranty	2 Years Parts and Labor
Regulatory Compliance	
PCI/ISA Card	FCC, CE, CSA, RoHS
Mechanical	
Size (W-D)	100mmx204mm (4"x8")
Weight (Net)	0.14kg (0.31lbs)
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
Power Requirement	
12 VDC @ 800ma	Via PC Hard Drive Connector
Accessories Included	
1x Breakout Cable	HD-44 to Various Connectors
1x Operations Manual	Provided on CD
1x Control Software	Microsoft Windows Based
Optional Accessories	
IRC5	Infrared Remote Control

Note

(1) All Video and PC connections are via a breakout cable.

Control Interface | Input | Output | Input/ Output

C2-260 Breakout Cable

1T-C2-200, 1T-C2-250

Video Switcher/Scalers (▲)

Key Features 1T-C2-200, 1T-C2-250

- Up ▲ Conversion
- Automatic Incoming Resolution Detection
- 1x CV and 1x YC (S-Video) Input
- 1xRGB/YPbPr Input for Loop-thru
- Multiple Worldwide Television Standards In
- 1x RGB/YPbPr Output
- Computer Resolutions to 2048x2048
- All HDTV resolutions to 1080p/60
- Control via RS-232, IR and Front Panel
- Windows Control Panel included
- Variable Image 10X Zoom & Shrink to 10%
- Optional IR Remote Control
- Optional Single/Dual Rackmount Kit
- Mix, PIP, Chromakey and Lumakey (1T-C2-250)
- AutoSet - Automatic picture sizing (1T-C2-250)

1T-C2-200 Video Scaler features Up Conversion and is based on TV One's exclusive CORIO®2 technology and provides high quality up conversion from standard video formats to Computer or HDTV signals in a compact package. NTSC and PAL video standards are supported. Inputs can be Composite or YC. A computer bypass is also provided. The output is selectable as any computer resolution up to 2048x2048 at any vertical refresh rate and all HDTV resolutions up to 1080p. A wide variety of computer signal formats are available to support PC, Mac and Workstation formats.

All the functions can be controlled via the front panel Push Buttons, an Infrared Remote Control Unit or an RS-232 connection. A Windows Control Panel is provided and most third party control systems interface directly with the entire C2 range of products. An On-Screen Display is available to assist in setup.

Variable Zoom to 10X allows you to enlarge any part of the video image to fill the entire computer screen and position controls allow you to move around to any area desired. Variable Shrink to as little as 10% allows fitting the image onto most displays. The full bandwidth chroma sampling insures faithfully reproduced, high resolution colors.

1T-C2-250 Video Scaler PLUS has all the functions and features of the 1T-C2-200 and adds a wide variety of additional capabilities, including Genlock, Chromakey, Lumakey and Mixing. The Key Mode allows computer graphics to be keyed over an external Composite or YC signal or vice versa. The keyed image may be faded in and out. Due to the 4:4:4 sampling format, precise keying at the pixel level can be achieved. The Mix Mode permits glitch-free mixing between the computer image and external video. The PIP Mode allows either of the video inputs to be inset in a window over the full computer input.

1T-C2-400

Video Switcher/Scaler (✖)

Key Features 1T-C2-400

- Cross ✖ Conversion
- Automatic incoming resolution detection
- 1x RGB/YPbPr Input and Output
- Computer Resolutions to 2048x2048
- All HDTV resolutions to 1080p/60
- Control via RS-232, IR and Front Panel
- Variable Image 10X Zoom & Shrink to 10%

1T-C2-400 PC/HD Scaler is a Cross Converter that converts between virtually any PC or HD resolution to any other PC or HD resolution. Virtually any PC resolution up to 2048x2048 and any HDTV resolution up to 1080p can be accommodated on the input or output. This unit has no Composite or YC inputs and is strictly an RGB/YPbPr Scaler.

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. All settings are stored in non-volatile memory and are retained even when power is switched off.

1T-C2-200/250/400 Specifications

Video Inputs (1T-C2-200, 1T-C2-250 only)

Television Standards	NTSC, PAL, PAL-M, PAL-N, SECAM
Composite Video	1x via BNC
YC (S-Video)	1x via 4-Pin Mini-DIN Connector

Computer Input

RGB/YPbPr (Note 1)	1x via HD15 (Loop-thru only)
Format - Analog	RGBHV, RGBS, RGsB, YPbPr

Computer Output

Format - Analog	RGBHV, RGBS, RGsB, YPbPr
Connectors	1x HD-15 Female
R-G-B Level	0.7 Vp-p
PC Resolutions	Any up to 2048x2048
HDTV Resolutions	Any up to 1080p/60
Vertical Refresh Rate	Any to 250Hz

General

Size and Position	Automatic via AutoSet or Manual
Image Size	User-Definable Presets
Image Freeze	One Video Frame
Settings Memory	Non-Volatile
Zoom Range	Variable to 10X Zoom
Shrink Range	Variable to 10%
Image Mirroring	Horizontal and/or Vertical
Horizontal Filtering	Full Digital
Conversion Technology	Proprietary – CORIO®2
Color Resolution	24-bit (16.8 Million Colors)
Digital Sampling	24-bit, 4:4:4 format
Firmware Memory	Flash, Upgradeable via RS-232

General (1T-C2-200, 1T-C2-250 only)

De-Interlacing (NTSC-PAL)	Pixel-level Motion Adaptive
Comb Filter Decoding	Adaptive
Film Mode (NTSC)	3:2 Pulldown

Video Adjustments

1T-C2-200, 1T-C2-250	Contrast, Brightness, Saturation, Hue (NTSC), R-G-B Levels
1T-C2-400	R-G-B Levels

Operational Modes (1T-C2-250 only)

Key	Chromakey or Lumakey
Mix	PC to/from Video
PIP	Variable Window Size & Position

Control Methods

Local	via Front Panel Buttons & OSD
RS-232 Interface	via D9 Female Connector
Infrared Remote	via IRC-5 Remote Unit

Warranty

Limited Warranty	2 Years Parts and Labor

Regulatory Compliance

Main Units	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Mechanical

Size (H-W-D)	30x200x90mm(1.18"x7.87"x3.54")
1T-C2-200 Weight (Net)	0.52 kg (1.14 lbs)
1T-C2-250 Weight (Net)	0.52 kg (1.14 lbs)
1T-C2-400 Weight (Net)	0.50 kg (1.10 lbs)

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

Power Requirement

External Power Supply	12VDC@1A

Accessories Included

1x Operations Manual	
1x Power Adapter	US, UK or Euro

Product Item Numbers

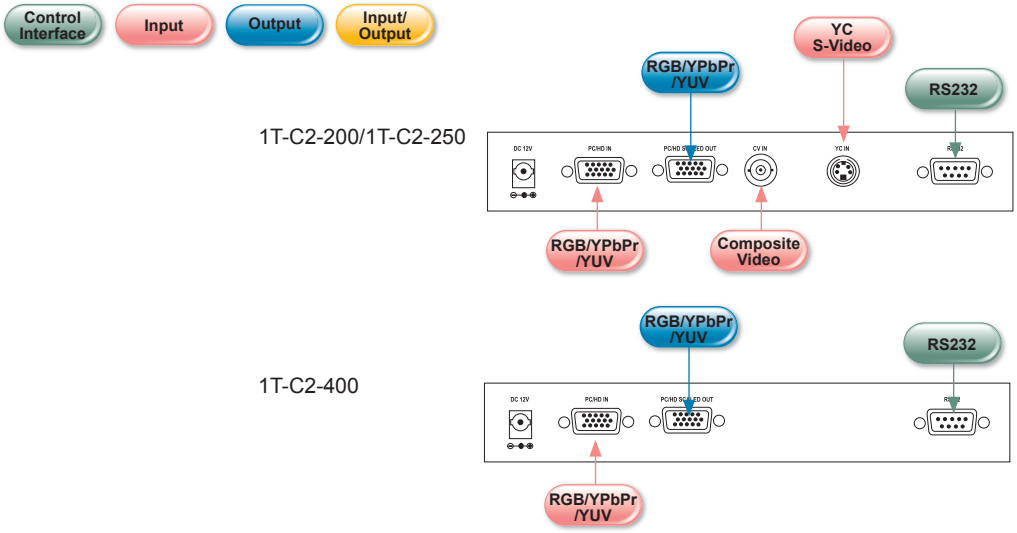
1T-C2-200	Video Scaler
1T-C2-250	Video Scaler PLUS
1T-C2-400	PC/HD Scaler

Optional Accessories

IRC-5	Infrared Remote Control
RM-230	Single/Dual Rackmount Kit
1x Control Software	Downloadable from website

Note

(1) RGB/YPbPr input may also be used as the Lock/Mix source on the 1T-C2-250.



Video Scalers

tvoneTASK The TV One-task range of Video Scalers are intended to solve less complex requirements than those addressed by the C2 range of Switcher/ Scalers. These products deal with the basic need to convert between signal formats and resolutions and between digital and analog signals.

Video Scalers Comparison Chart

Model	1T-VS-558	1T-VS-658	1T-AVPC-HDMI	1T-PCDVI-PCDVI	1T-VS-626	1T-V1280HD	1T-V1280DVI	1T-PC1280HD	1T-VGA-DVI	1T-DVI-VGA
Video Conversion Direction (Up ▲, Down ▼, Cross ✖)	✖	▲ ✖	▲ ✖	✖	✖	▲	▲	✖	✖	✖
VIDEO INPUTS										
PC Resolutions										
Up to 1280x1024									✓	✓
Up to 1920x1200	✓	✓	✓	✓	✓			✓		
HDTV Resolutions										
Up to 1080i								✓	✓	✓
Up to 1080p	✓	✓	✓	✓	✓					
Signal Type										
HDMI		✓	✓		✓					
DVI-D	✓			✓						✓
Analog on HD15	✓	✓	✓	✓				✓	✓	
YPbPr on HD15								✓	✓	
YPbPr/YUV on 3-RCA	✓	✓	✓	✓						
Composite Video via RCA		✓				✓	✓			
YC (S-Video) via 4-pin Mini Din		✓				✓	✓			
Signal Format										
RGBHV	✓		✓	✓	✓			✓	✓	✓
YPbPr	✓	✓	✓	✓	✓			✓	✓	✓
YUV Component	✓	✓	✓	✓		✓	✓	✓	✓	
Composite Video/YC (S-Video)		✓				✓	✓			
VIDEO OUTPUTS										
PC Resolutions										
Up to 1280x1024							✓		✓	✓
Up to 1600x1200						✓				
Up to 1920x1200	✓	✓	✓	✓	✓			✓		
HDTV Resolutions										
Up to 1080i						✓*	✓*	✓*	✓	✓
Up to 1080p	✓	✓	✓	✓	✓	✓		✓		
Signal Type										
HDMI		✓	✓		✓					
DVI-D	✓			✓			✓		✓	
Analog on HD15	✓			✓		✓		✓		✓
Signal Format										
RGBHV	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
YPbPr	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
AUDIO INPUTS										
Analog		✓	✓		✓					
Digital		✓			✓					
AUDIO OUTPUTS										
Analog					✓					
Digital		✓	HDMI		✓					

* This 1080i signal on these models is actually a doubled 540p signal and is recognized as 1080i by most HDTV displays.

1T-VS-558

PC/DVI Video Scaler (✖)

Key Features 1T-VS-558

- Cross ✖ Conversion
- I/O Resolutions to WUXGA and 1080p
- I/O Formats RGBHV (YPbPr and YUV In Only)
- Bi-directional Digital-Analog Conversion
- DVI Inputs and Outputs are fully HDCP Compliant
- 3-D Motion Adaptive De-Interlacing
- 3-D Noise Reduction
- 3:2 Pull-Down w/2:2 Pull-Down Recovery
- Auto Adjust Button for automatic Size/ Position
- Infrared Remote Control
- Locking DC Power Supply
- Optional Single/Dual Rackmount Kit

1T-VS-558 Video Scaler is a high bandwidth, professional Cross Converter for Analog and DVI formats. The unit has separate Analog inputs and outputs via HD-15 and DVI-I connectors respectively. It accommodates resolutions up to WUXGA and 1080p and allows conversion between them as well as between digital and analog. The unit also accepts 480i or 576i YUV interlaced analog component video, such as from a DVD Player for up-conversion.

Advanced features, such as 3-D Motion Adaptive De-Interlacing and 3-D Noise Reduction, provide extremely high quality signal conversion. An OSD (On Screen Display) menu system makes the 1T-VS-558 easy to set up and control via front panel joystick or by the Infrared Remote Control. An Auto Adjust button allows for the automatic size and position of the image. DVI Inputs and Outputs are fully HDCP Compliant.

The unit requires external 5VDC and an AC Adapter is provided. It has a locking DC connector for added security. An optional RM-220 Rackmount kit is available that can house either one or two units.

1T-VS-658

HDMI Video Scaler (▲✖)

Key Features 1T-VS-658

- Up ▲, Cross ✖ Conversion
- HDMI Output Resolutions to WUXGA and 1080p
- Inputs: HDMI, RGB, YPbPr, YUV, YC (S-Video), CV
- Both Analog and Digital Audio Capable
- Audio Delay for Lip Sync Corrections
- 3D Motion Adaptive De-Interlace & Noise Reduction
- 3:2 Pull-Down w/2:2 Pull-Down Recovery
- Infrared Remote Control
- Locking DC Power Supply
- Optional Single/Dual Rackmount Kit

1T-VS-658 Video Scaler is a professional Up and Cross Converter with an HDMI output. Fully scalable video inputs include HDMI, DVI (via the HDMI connector), Analog RGB/YPbPr via an HD-15, Analog YPbPr or 480i/576i YUV Component via three RCA, YC and Composite Video. It handles I/O Resolutions up to 1080p and WUXGA. Both digital and analog audio processing is supported and audio delays of up to 150ms can be introduced to insure lip sync. Five Analog Stereo and a SPDIF Coaxial Digital Audio input can be selected for embedding into the HDMI output. A separate Coaxial Digital Audio output is also provided.

Advanced features, such as 3D Motion Adaptive De-Interlacing, 3D Noise Reduction and 8-bit triple ADC/PLL technology, combine to provide extremely high quality signal conversion. The HDMI I/O is HDCP Compliant. An OSD (On Screen Display) menu makes the 1T-VS-658 easy to set up. Control is via front panel joystick and buttons, Infrared Remote or RS-232 interface.

1T-VS-558 Specifications

Video Inputs

DVI-D	1x via DVI-I Connector
Analog RGBHV/YPbPr	1x via HD-15 Connector (1)
Analog YUV/YPbPr	1x via 3x RCA Connectors

Video Outputs

DVI-D	1x via DVI-I Connector
Analog RGBHV	1x via HD-15 Connector

Input Formats Supported

RGBHV	Up to WUXGA@60Hz
YPbPr	Up to 1080p
Interlaced Component	YUV at 480i or 576i

Output Format Supported

RGBHV	Up to WUXGA, 1080p

Control Methods

Front Panel	Via Buttons and Joystick
Infrared	Via IR Remote Control
RS-232 Interface	Via DB-9 Connector

Scaling Engine

De-Interlace	3D Motion Adaptive
Noise Reduction	3D
Pull-Down	3:2 + 2:2 Recovery
HDCP Compliance	Yes
Bandwidth	1.65 Gbs

Mechanical

Size (H-W-D)	42x218x164mm (1.7x8.5x6.45")
Weight (Net)	1.13 kg (2.5 lbs)

Warranty

Limited Warranty	2 Years Parts and Labor

Environmental

Operating Temperature	0° to +50°C (+32° to +122°F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-10° to +60° C (+14° to +140° F)
Storage Humidity	10% to 90%, Non-condensing

Power Requirement

External Power Supply	5VDC@2A

Regulatory Approvals

Converter Unit	FCC, CE, RoHS
Power Supply	UL, CUL, CE, PSE, GS, RoHS

Accessories Included

1x AC Power Adapter	US, UK or Euro
1x Operations Manual	
1x IR Remote Control	

Optional Accessories

Rackmount Kit	RM-220 Single/Dual

1T-VS-658 Specifications

Video Inputs

HDMI (DVI Compatible)	1x via HDMI Connector
Analog RGBHV/YPbPr	1x via HD-15 Connector
Analog YUV Component	1x via 3x RCA Connectors
YC (S-Video)	1x via 4-pin Mini Din
Composite Video	1x via RCA Connector

Audio Inputs

Digital (S/PDIF)	1x via RCA Connector
Analog Stereo	3x via RCA (R/L)
	2x via 3.5mm Mini-Stereo

Video Output

HDMI v1.2 (RGBHV)	1x via HDMI Connector

Audio Outputs

Embedded into HDMI	Digital per HDMI Spec
Digital (S/PDIF)	1x via RCA Coax Connector
Audio Delay Adjustment	Off, 40ms, 110ms, 150ms

Input Video Formats Supported

HDMI v1.2 (RGBHV/YPbPr)	Up to WUXGA, 1080p
Analog RGBHV	Up to WUXGA@60Hz
Analog YPbPr	Up to 1080p
Analog Interlace Component	480i, 576i YUV (Y,R-Y,B-Y)
DVI (via HDMI Connector)	Up to WUXGA, 1080p
Composite and YC (S-Video)	NTSC or PAL

Remote Control Methods

Front Panel	Via Buttons and Joystick
Infrared	Via IR Remote Control
RS-232 Interface	Via DB-9 Connector

Scaling Engine

De-Interlace	3D Motion Adaptive
Noise Reduction	3D
Pull-Down	3:2 + 2:2 Recovery
HDMI Compliance	V 1.2 with HDCP

Warranty

Limited Warranty	2 Years Parts and Labor

Mechanical

Size (H-W-D)	42x218x164mm (1.7x8.5x6.45")
Weight (Net)	1.21 kg (2.68 lbs)

Environmental

Operating Temperature	0° to +48°C (+32° to +120°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

Power Requirement

External Power Supply	5VDC@2A

Regulatory Approvals

Converter Unit	FCC, CE, RoHS
Power Supply	UL, CUL, CE, PSE, GS, RoHS

Accessories Included

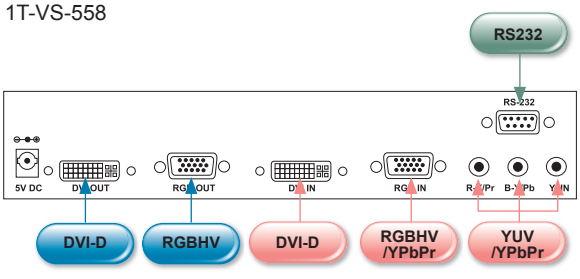
1x AC Power Adapter	US, UK or Euro
1x Operations Manual	
1x IR Remote Control	

Optional Accessories

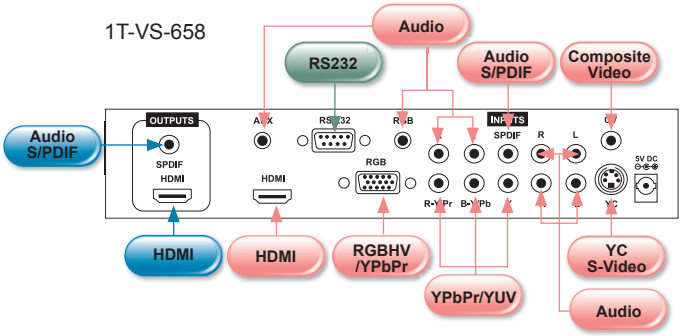
Rackmount Kit	RM-220 Single/Dual

Control Interface | Input | Output | Input/ Output

1T-VS-558



1T-VS-658



1T-AVPC-HDMI

HDMI Video Scaler (▲✖)

1T-AVPC-HDMI Video Scaler converts DVI and Analog inputs to the HDMI format, providing output resolutions up to 1080p and WUXGA. Analog RGB inputs up to WUXGA are accepted along with YPbPr up to 1080p. It also accepts a 480i or 576i YUV input. The digital inputs can be HDMI or DVI-D signals up to 165 MHz with RGB up to UXGA. An integrated DVI/HDMI HDCP compliant receiver is central to the processor along with 3-D motion adaptive de-interlacers. The 3:2 pull-down, 2:2 pull-down detection/recovery and 3-D noise reduction complete the superior video signal processing capability. Audio processing is accomplished by embedding either Analog Stereo Audio (R&L), PC Stereo Audio (R&L) or an auxiliary Analog Stereo Audio (R&L) input into the HDMI output.

Key Features 1T-AVPC-HDMI

- Up ▲, Cross ✖ Conversion
- Digital HDMI Out to 1080p & WUXGA
- Digital and Analog In to 1080p & WUXGA
- RGBHV, YPbPr and YUV Inputs Supported
- Integration of Analog Audio to HDMI Output
- 3-D Motion Adaptive De-Interlace, Noise Reduction
- 3:2 Pull-Down with 2:2 Pull-Down Recovery
- Auto Adjust for auto image size & position
- Front Panel or Infrared Remote Control

1T-PCDVI-PCDVI

PC/DVI Video Scaler (✖)

1T-PCDVI-PCDVI Video Scaler is a high bandwidth, professional Cross Converter that freely converts between resolutions up to 1080p and WUXGA, analog or digital. It also upconverts 480i or 576i analog component video. Input connectors are DVI, HD15 and 3xRCA. Output connectors are DVI and HD15.

An integrated DVI/HDCP compliant receiver is central to the processor along with 3-D motion adaptive de-interlacers. The 3:2 pull-down, 2:2 pull-down detection recovery and 3-D noise reduction complete the superior video signal processing capability.

Both units may be operated from the front panel buttons or via the supplied Infrared Remote Control. An On Screen Display for the 1T-PCDVI-PCDVI makes operation of the scaler fast and simple. An Auto Adjust button allows for the automatic size and position of the image. A 5VDC Power Adapter with locking DC connector in provided.

Key Features 1T-PCDVI-PCDVI

- Cross ✖ Conversion
- Digital-Analog & Analog-Digital Conversion
- DVI & Analog In/Out to 1080p & WUXGA
- DVI In/Out is HDCP Compliant
- RGB, YPbPr and YUV Inputs Supported
- 3-D Motion Adaptive De-Interlace, Noise Reduction
- 3:2 Pull-Down with 2:2 Pull-Down Recovery
- Front Panel or Infrared Remote Control

1T-VS-626

HDMI Video Scaler (✖)

1T-VS-626 HDMI Scaler can accept audio embedded in the incoming HDMI signal or from the separate Toslink or analog Stereo inputs. The HDMI output can be the same resolution or scaled to a different resolution. Output audio is simultaneously present embedded in the HMDI signal and separately as Toslink and analog Stereo. This provides maximum flexibility for systems integration. The unit is ideal for situations where the HDMI source resolution and/or frame rate is incompatible with the display device's resolution/frame rate. A comprehensive OSD menu and buttons allows selection of output resolution, adjustments of picture quality and audio source selection. It's also possible to add up to 150ms of audio delay to compensate for lip sync errors.

Advanced features, such as 3D Motion Adaptive De-Interlacing and 50/60 Frame Rate Conversion combine to provide extremely high quality signal conversion. The unit is HDMI Compliant. A small inline power adapter is provided with locking DC connector for security.

Key Features 1T-VS-626

- Cross ✖ Conversion
- HDMI v1.1, HDCP 1.1 Compliant
- Max I/O Resolutions WUXGA & 1080p
- Accepts 480i or 576i SDTV input
- Automatically Detects Input Resolution
- 50/60Hz Frame Rate Conversion
- 3-D Motion Adaptive De-interlace
- 3:2 and 2:2 Pull-Down
- Video Level Adjustments
- Supports embedded & external audio in/out
- Up to 150ms Audio Delay
- Locking DC Power Adapter

Specifications

1T-AVPC-HDMI

Video Inputs

HDMI (DVI Compliant)	1x via HDMI Connector
Analog RGBHV	1x via HD-15 Connector
Analog Component	1x via 3x RCA Connectors

Audio Inputs

Analog Stereo (R/L))	1x via 2x RCA Connectors
Analog Stereo (R/L)	1x via 3.5mm Connector
Analog Stereo (R/L) Aux	1x via 3.5mm Connector

Video/Audio Output

HDMI (DVI Compliant)	1x via HDMI Connector

Input Formats Supported

Analog or Digital RGB	Up to WUXGA@60Hz
Analog or Digital Component	YPbPr to 1080p
Analog Interlaced Component	YUV at 480i, 576i

Output Formats Supported

HDMI (RGBHV) Version 1.1	Up to WUXGA, 1080p

1T-PCDVI-PCDVI

Video Inputs

DVI-D	1x via DVI-I Connector
Analog RGBHV/YPbPr	1x via HD-15 Connector
Analog YUV/YPbPr	1x via 3x RCA Connectors

Video Outputs

DVI-D	1x via DVI-I Connector
Analog RGB HV	1x via HD-15 Connector

Input Formats Supported

RGBHV	Up to WUXGA@60Hz
YPbPr	Up to 1080p
Interlaced Component	YUV at 480i or 576i

Output Format Supported

RGBHV	Up to WUXGA, 1080p

HDCP Support

HDMI I/O	Fully Compliant

Scaling Engine

De-Interlacers	3D Motion Adaptive
Noise Reduction	3D
Pull-Down	3:2 + 2:2 Recovery

1T-VS-626

Video Input/Output

HDMI 1.2	1x via HDMI Connector

Resolutions Supported

PC Input/Output	VGA through WUXGA
HDTV Input/Output	480p, 576p, 720p, 1080i, 1080p
SDTV Input	480i, 576i
Video Adjustments	Contrast, Brightness, RGB Levels, Sharpness, Saturation, Hue

Scaling Engine

De-Interlace	3D Motion Adaptive
Pull-Down	3:2 + 2:2 Recovery
HDCP Compliance	v1.1
Image Processing	Full Time/Full Range
Frame Rate Conversion	50/60Hz
Scan Conversion	Converts all Standard Formats

Audio Inputs/Outputs

Analog Stereo	1x via 3.5mm Connectors
Digital	1x SPDIF via Toslink Connectors

Audio Performance

Output Delay	Off/40ms/110ms/150ms
Analog Stereo Level In	2Vrms max @ 47KΩ
Analog Stereo Level Out	Unity @ 47KΩ
Toslink Level In/Out	Standard Toslink level
Analog Bandwidth	20Hz to 20 KHz

All Units

Mechanical

(1T-AVPC-HDMI & 1T-PCDVI-PCDVI)	
Size (H-W-D)	25.5x180x125mm (1"x7.0"x4.9")
Weight (Net)	450 g (1 lb)
(1T-VS-626)	
Size (H-W-D)	25x102x145mm (1x4x5.7")
Weight (Net)	324g (0.71 lbs)

Warranty

Limited Warranty	2 Years Parts and Labor

Environmental

Operating Temperature	0° to +50° C (+32° to +122° F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-10° to +60° C (+14° to +140° F)
Storage Humidity	10% to 90%, Non-condensing

Power Requirement

External Power Supply	5VDC@2A – (Locking DC - 1T-VS-626)

Regulatory Approvals

Converter Unit	FCC, CE, RoHS
Power Supply	UL, CUL, CE, PSE, GS, RoHS

Accessories Included

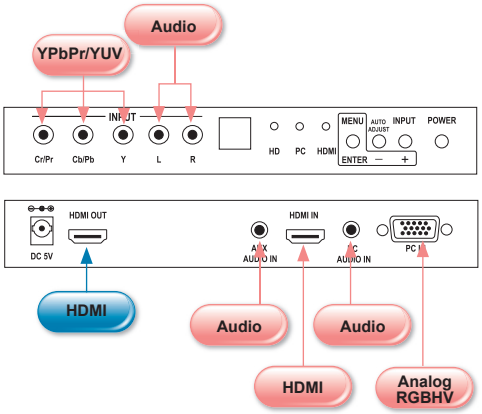
1x Power Adapter	US, UK or Euro
1x Operations Manual	
1x IR Remote Control	(1T-AVPC-HDMI & 1T-PCDVI-PCDVI)

Product Item Number

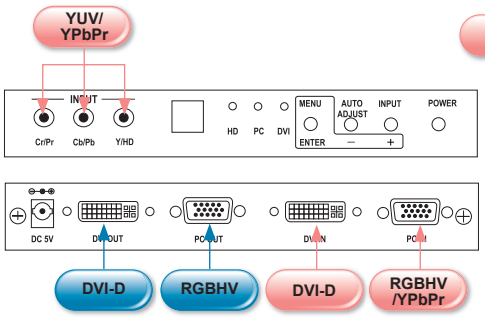
1T-AVPC-HDMI
1T-PCDVI-PCDVI
1T-VS-626

Control Interface | Input | Output | Input/ Output

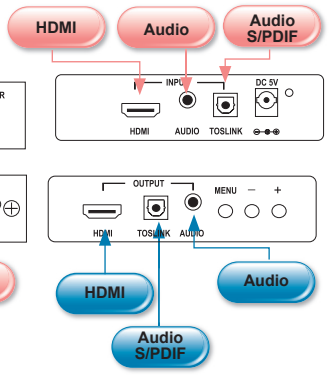
1T-AVPC-HDMI



1T-PCDVI-PCDVI



1T-VS-626



1T-PC1280HD

PC/HD Video Scaler (✖)

Key Features 1T-PC1280HD

- Cross ✖ Conversion
- Ultra Compact, High Performance Unit
- PC Resolutions up to 1920x1200
- HD Resolutions up to 1080p
- Locking DC Power Connector for Security

1T-PC1280HD Video Scaler is a Cross Converter for PC and HD formats and resolutions. The input resolution is automatically detected and can either be RGBHV, YPbPr or YUV format. I/O Resolutions up to 1920x1200 and 1080p are accommodated. In addition to converting between PC and HD, the unit can take a 480i Component Video signal (from a DVD Player for example) and convert it to PC or HD resolutions. The output resolution and refresh rate is selected via push buttons or an On Screen Display. The integral processor provides control over many signal parameters, such as: Contrast, Brightness, Color Saturation, R-G-B Levels and H-V Positioning.

The unit is 12VDC powered and the Power Adapter is included featuring locking DC Connectors for security.

1T-V1280HD

PC/HD Video Scaler (▲)

Key Features 1T-V1280HD

- Up ▲ Conversion
- Inputs: CV, YC (S-Video), YUV
- Outputs: PC to 1600x1200 & HD to 1080p
- Locking DC Power Connector for security

1T-V1280HD Video Scaler is an ultra compact video to analog PC/HD up-converter that features inputs for Composite Video, YC (S-Video) and Component 480i or 576i YUV Video. The output resolution and refresh rate can be selected from a wide variety of presets up to 1600x1200 and 1080p. PC and HD resolutions are available in analog RGBHV and HD resolutions are also available in analog YPbPr format. The integral processor provides control over many signal parameters, such as Contrast, Brightness, Color and Hue (NTSC).

The unit is 5VDC powered and the Power Adapters are included. Locking DC Connectors are provided for security.

1T-PC1280HD Specifications

I/O Resolutions

VESA	Resolution	Refresh Rate
VGA	640x480	RGBHV 60, 72, 75, 85Hz
VGA70	720x400	RGBHV 70Hz
VESA85	640x400	RGBHV 85Hz
SVGA	800x600	RGBHV 60, 72, 75, 85Hz
XGA	1024x768	RGBHV 60, 70, 75, 85Hz
Mac	1152x864	RGBHV 70, 75Hz
WXGA	1280x768	RGBHV 60Hz
1280A	1280x960	RGBHV 60Hz
SXGA	1280x1024	RGBHV 60, 75Hz
UXGA	1600x1200	RGBHV 60Hz
WUXGA	1920x1200	RGBHV 50, 60Hz
480i	720x480 NTSC	(i) RGBHV, YUV 60Hz (In Only)
576i	720x576 PAL	(i) RGBHV, YUV 50Hz (In Only)
1080i	1920x1080	(i) RGBHV, YPbPr 50, 60Hz (i) (Note 1)
480p	720x480	RGBHV, YPbPr 60Hz
576p	720x576	RGBHV, YPbPr 50Hz
720p	1280x720	RGBHV, YPbPr 50, 60Hz (Note 2)
1080p	1920x1080	RGBHV, YPbPr 50, 60Hz (Note 2)

Input

RGBHV, YPbPr, YUV	1x via HD-15 Connector

Output

RGBHV, YPbPr	1x via HD-15 Connector

Picture Controls

Input Signal	Clock Frequency, Phase
Output Signal	Brightness, Contrast, Color, R-G-B Levels, H&V Position

Mechanical

Size (H-W-D)	30x133x76mm (1.2"x5.25"x3")
Weight (Net)	280 g (0.62lbs)

Warranty

Limited Warranty	2 Years Parts and Labor

Environmental

Operating Temperature	0° to +50° C (+32° to +122° F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-10° to +60° C (+14° to +140° F)
Storage Humidity	10% to 90%, Non-condensing

Power Requirement

External Power Supply	12VDC@1A – Locking DC

Regulatory Approvals

Amplifier Units	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Accessories Included

1x Power Adapter	US, UK or Euro
1x Operations Manual	

Notes

(1) The 1080i signal is actually a doubled 540p signal which is recognized as a 1080i signal by most HDTV displays.
(2) YPbPr is available on Output Only; Input is RGBHV Only

1T-V1280HD Specifications

Output Resolutions

VESA	Resolution	Format / Refresh Rates
VGA	640x480	RGBHV 50, 60, 72, 75, 85Hz
SVGA	800x600	RGBHV 50, 60, 72, 75, 85Hz
XGA	1024x768	RGBHV 50, 60, 70, 75, 85Hz
WXGA	1280x768	RGBHV 50, 60Hz
SXGA	1280x1024	RGBHV 50, 60Hz
UXGA	1600x1200	RGBHV 60Hz
480p	852x480	YPbPr, RGBHV 50, 60Hz
576p	852x576	YPvPr, RGBHV 50, 60Hz
720p	1280x720	YPbPr, RGBHV 50, 60Hz
1080i	1920x1080(i)	YPbPr, RGBHV 50, 60Hz (Note 1)
1080p	1920x1080(p)	YPbPr, RGBHV 50, 60Hz

Inputs

Composite Video	1x via RCA Connector
YC (S-Video)	1x via 4-Pin Mini-DIN Connector
480i/576i Component	1x via 8-Pin Mini-DIN to 3x RCA
RGBs SCART	1x via 8-Pin Mini-DIN to SCART (Note 2)
Television Standards	PAL, NTSC

Output

RGBHV, YPbPr	1x via HD-15 Connector

Picture Controls

Input Signal	Brightness, Contrast, Hue, Color

Mechanical

Size (H-W-D)	30x133x76mm (1.2"x5.25"x3")
Weight (Net)	280 g (0.62 lbs)

Warranty

Limited Warranty	2 Years Parts and Labor

Environmental

Operating Temperature	0° to +50° C (+32° to +122° F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-10° to +60° C (+14° to +140° F)
Storage Humidity	10% to 90%, Non-condensing

Power Requirement

External Power Supply	5VDC@2A - Locking DC

Regulatory Approvals

Amplifier Units	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Accessories Included

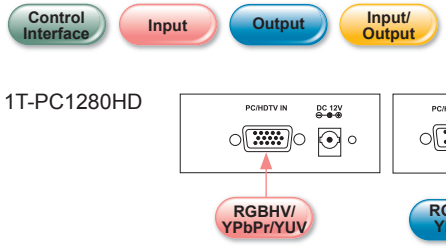
1x Operations Manual	
1x Component In Cable	8-Pin Mini-DIN to 3 RCA F
1x SCART In Cable	8-Pin Mini-DIN to SCART (Note 2)
1x Power Adapter	US, UK or Euro

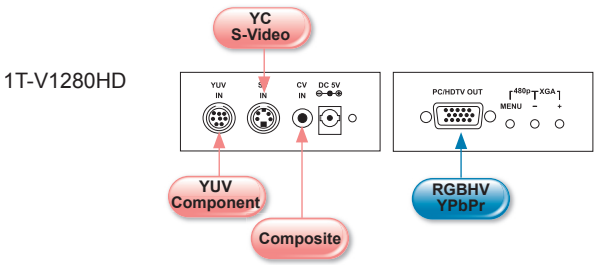
Product Item Number

1T-V1280HD

Notes

(1) The 1080i output is actually a doubled 540p signal, which is recognized as a 1080i by most HDTV Displays.
(2) European version only





1T-V1280DVI

DVI Video Scaler (▲)

Key Features 1T-V1280DVI

- Up ▲ Conversion
- Inputs: CV, YC (S-Video), YUV
- PC up to 1280x1024 and HD up to 1080i
- Locking DC Power Connector for security

1T-V1280DVI Video Scaler is an ultra compact video to DVI-D PC/HD up-converter that features inputs for Composite Video, YC and Component 480i/576i YUV Video. The output resolution and refresh rate can be selected from a wide variety of presets. The output format is RGBHV. The integral processor provides control over many signal parameters, such as Contrast, Brightness, Color and Hue (NTSC).

The unit is 5VDC powered and the Power Adapters are included. Locking DC Connectors are provided for security.

1T-DVI-VGA, 1T-VGA-DVI

PC/DVIVideo Scalers (✖)

Key Features 1T-DVI-VGA/VGA-DVI

- Cross ✖ Conversion
- Convert DVI to VGA or VGA to DVI
- Simultaneous Scaling to Different Resolutions
- Resolutions up to 1280x1024 and 1080i

1T-DVI-VGA and **1T-VGA-DVI Video Scalers** convert between Analog and DVI formats. Model 1T-VGA-DVI converts Analog to DVI, while the 1T-DVI-VGA converts DVI to Analog. A wide variety of PC and HD input and output resolutions are supported. The input resolution is automatically detected and can either be RGBHV or YPbPr format. Both models also accept a 480i YUV signal (from a DVD Player for example) and convert it to PC or HD. The output resolution and refresh rate are selectable. An integral processor adjusts signal levels. A Power Adapter with locking DC is included.

1T-V1280DVI Specifications

Output Resolutions

VESA	Resolution	Format / Refresh Rates
VGA	640x480	RGBHV 50, 60, 72, 75, 85Hz
SVGA	800x600	RGBHV 50, 60, 72, 75, 85Hz
XGA	1024x768	RGBHV 50, 60, 70, 75, 85Hz
WXGA	1280x768	RGBHV 50, 60Hz
SXGA	1280x1024	RGBHV 50, 60Hz
480p	852x480	RGBHV 50, 60Hz
576p	852x576	RGBHV 50, 60Hz
720p	1280x720	RGBHV 50, 60Hz
1080i	1920x1080 (i)	RGBHV 50, 60Hz (Note 1)

Inputs

Composite Video	1x via RC Connector
YC (S-Video)	1x via 4-Pin Mini-DIN Connector
480i/576i Component	1x via 8-Pin Mini-DIN to 3x RCA
Television Standards	PAL, NTSC

Output

DVI-D	1x via DVI-I Connector

Picture Controls

Input Signal	Brightness, Contrast, Hue, Color

Warranty

Limited Warranty	2 Years Parts and Labor

Mechanical

Size (H-W-D)	30x146x76mm (1.2"x5.75"x3")
Weight (Net)	280 g (0.62 lbs)

Environmental

Operating Temperature	0° to +50° C (+32° to +122° F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-10° to +60° C (+14° to +140° F)
Storage Humidity	10% to 90%, Non-condensing

Power Requirement

External Power Supply	5VDC@2A - Locking DC

Regulatory Approvals

Amplifier Units	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Accessories Included

1x Operations Manual	
1x Component In Cable	1m (3') 8-Pin Mini-DIN to 3 RCA F
1x Power Adapter	US, UK or Euro

Product Item Number 1T-V1280DVI

Notes

(1) The 1080i output is actually a doubled 540p signal, which is recognized as a 1080i by most HDTV Displays.

1T-DVI-VGA, 1T-VGA-DVI Specifications

Input Resolutions (Note 1)

VESA	Resolution	Refresh Rate	Format
VGA	640x480	60, 72, 75, 85Hz	RGBHV
SVGA	800x600	60, 72, 75, 85Hz	RGBHV
XGA	1024x768	60, 70, 75, 85Hz	RGBHV
Mac	1152x864	70, 75Hz	RGBHV
WXGA	1280x768	60Hz	RGBHV
SXGA	1280x1024	60Hz	RGBHV
480i	852x480i	60Hz	YCbCr
480p	852x480	60Hz	YPbPr
576p	852x576	50Hz	YPbPr
720p	1280x720	50, 60Hz	YPbPr
1080i	1920x1080i	50, 60Hz	YPbPr

Output Resolutions

VESA	Resolution	Refresh Rate	Format
VGA	640x480	60, 72, 75, 85Hz	RGBHV
VGA70	720x400	70Hz	RGBHV
VESA85	640x400	85Hz	RGBHV
SVGA	800x600	60, 72, 75, 85Hz	RGBHV
XGA	1024x768	60, 70, 75, 85Hz	RGBHV
Mac	1152x864	70, 75Hz	RGBHV
1280A	1280x960	60Hz	RGBHV
WXGA	1280x768	60Hz	RGBHV
SXGA	1280x1024	60, 75Hz	RGBHV
480p	852x480	60Hz	RGBHV (Note 2)
576p	852x576	50Hz	RGBHV (Note 2)
720p	1280x720	50, 60Hz	RGBHV (Note 2)
1080i	1920x1080i	50, 60Hz	RGBHV (Note 2)

Connectors

1T-VGA-DVI	In: HD-15F	Out: DVI-I
1T-DVI-VGA	In: DVI-I	Out: HD-15F

Picture Controls

Input Signal	Clock Frequency, Phase
Output Signal	Brightness, Contrast, RGB Levels, Color, Horiz & Vert Position

Mechanical

1T-DVI-VGA (H-W-D)	30x133x76mm (1.2"x5.25"x3")
1T-VGA-DVI (H-W-D)	30x146x76mm (1.2"x5.75"x3")
1T-DVI-VGA Wt (Net)	280 g (0.62 lbs)
1T-VGA-DVI Wt (Net)	310 g (0.68 lbs)

Warranty

Limited Warranty	2 Years Parts and Labor

Environmental

Operating Temperature	0° to +50° C (+32° to +122° F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-10° to +60° C (+14° to 122°F)
Storage Humidity	10% to 90%, Non-condensing

Power Requirement

External Power Supply	5VDC@2A – Locking DC

Regulatory Approvals

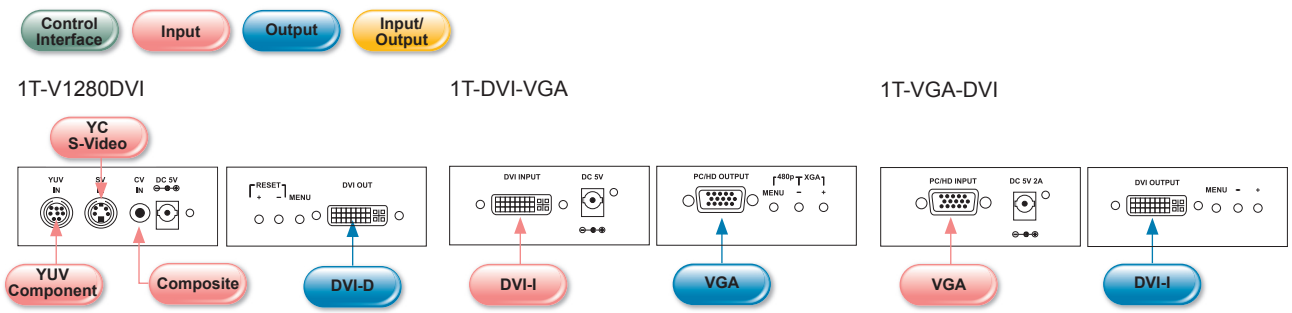
Amplifier Units	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Accessories Included

1x Power Adapter	US, UK or Euro
1x Operations Manual	

Notes

(1) Additional inputs supported: VGA75, VESA85, 1280A, 576i.
(2) 1T-DVI-VGA also has YPbPr output for all HDTV Resolutions.



Down Converters

Down Converters (also called Scan Converters) transform higher resolution computer images into lower resolution video images. TV One's range of conversion products are based on CORIO®2 technology and represent the latest in this field. All models are designed to convert computer signals of varying resolutions and vertical refresh rates into standard NTSC and PAL video signals. The C2-1000 and C2-2000 range also provide a YPbPr high resolution progressive scan outputs.

Down Converter Comparison Chart

Model	C2-2350A	C2-2355A	C2-2150A	C2-2155A	C2-2100A	C2-2105A	C2-1350	C2-1150	C2-1100	C2-160	1T-C2-150	1T-C2-100
VIDEO INPUTS	5	6	4		2		4	4	4	3	3	1
Scalable Signal Types/Connector												
Analog RGB/YPbPr via HD15	1		1		1		1	1	1	1	1	1
Analog RGB/YPbPr via 5-BNC								1	1			1
DVI RGB, YPbPr via DVI-I	1		1		1							
YUV/YPbPr via 3 BNC	1						1					
Composite Video via BNC	1		1		1*		1	1		1	1	
YC (S-Video) via 4-Pin Mini-Din	1		1				1	1		1	1	
HD-SDI or SD-SDI via BNC		1										
VIDEO OUTPUTS	4	5	3	4	3	4	4	3	3	2	4	2
Signal Type/Connector												
RGB/YPbPr via HD15	1		Loop-thru		Loop-thru		1	Loop-thru	Loop-thru	Loop-thru	Loop-thru	Loop-thru
Analog RGB/YPbPr via 5-BNC							1					
YUV/YPbPr via 3-BNC			1		1			1	1			
DVI-D RGB/YPbPr via DVI-I	1											
Composite Video via BNC	1		1		1		1	1	1	1	2	1
YC (S-Video) via 4-Pin Mini-DIN	1		1		1		1	1	1	1	2	1
HD-SDI or SD-SDI via BNC		1		1		1						
FEATURES												
Video Processing Channels	1		1		1		1	1	1	1	1	1
RS-232 Interface	✓		✓		✓		✓	✓	✓	✓	✓	✓
Infrared Remote Optional	✓		✓		✓		✓	✓	✓	✓	✓	✓
IP Interface	✓		✓		✓							
Chromakey, Lumakey, Mix	✓		✓				✓	✓		✓	✓	
Picture-in-Picture (PIP) Windows	✓		✓				✓	✓		✓	✓	
Transitions (Special Effects, Cut or Fade)	✓		✓				✓	✓				
Transitions by Cut only					✓				✓			
Edge Blending	✓						✓					
Genlock	✓		✓			✓	✓	✓		✓	✓	
CC-300 CORIOconsole compatible	✓		✓		✓		✓	✓	✓	✓	✓	✓
S2 Input Expansion Units compatible	✓		✓		✓		✓	✓	✓			
Integral Audio Passive Switcher	4x1						4x1					
Form Factor	½ Rack		½ Rack		½ Rack		½ Rack	½ Rack	½ Rack	PCI/ISA	½ Rack	½ Rack
Rackmount	Optional		Optional		Optional		Optional	Optional	Optional	N/A	Optional	Optional

* Genlock only

C2-2100A, C2-2105A
C2-2150A, C2-2155A

Down Converters

Key Features

- Automatic Incoming Resolution Detection
- Analog Computer Input via HD-15 w/Loop-thru
- DVI-D Computer Input via DVI-I Connector
- Genlock with Subcarrier Phase Adjustment
- Analog RGBHV to 2048x2048, DVI to 1920x1200 @ 60Hz
- All HDTV resolutions to 1080p/60
- AutoSet - Automatic picture sizing
- Multiple Worldwide Television Standards
- CV, YC (S-Video), YUV, YPbPr Outputs
- RS-232 and IP Interface
- Windows Control Panel
- Variable Image Zoom to 10X and Shrink to 10%
- Optional IR Remote Control
- Optional Single/Dual Rackmount Kit
- Optional Input Expansion for Additional Inputs
- PIP, Chromakey and Lumakey (C2-2150A & C2-2155A)
- CV and YC (S-Video) Input (C2-2150A & C2-2155A)
- HD/SD-SDI Out (C2-2105A, C2-2155A only)

C2-2100A Down Converter is based on TV One's exclusive CORIO®2 technology and provides high quality scan conversion from DVI or Analog Computer or HDTV signals to standard video formats. It handles any computer resolution up to 2048x2048 at any vertical refresh rate and all HDTV resolutions up to 1080p. A wide variety of computer signal formats are available to support PC, Mac and Workstation formats. Video outputs are switchable between NTSC and PAL and are simultaneously provided in Composite, YC and YUV Component. Alternatively, the output can be YPbPr Component (Progressive Scan). A PC loop-thru is also provided. **C2-2105A** provides a HD/SD-SDI output.

Temporal Interpolation greatly improves conversion from one frame-rate to another by merging multiple frames of video information to create intermediate frames, which is vital for smoothly scrolling images.

Diagonal Interpolation adds to the motion-compensated de-interlacing system to further improve image quality by intelligently filling-in missing detail.

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. All settings are stored in non-volatile memory and are retained even when power is switched off. All the functions can be controlled via the front panel Push Buttons, an Infrared Remote Control Unit or via an RS-232 or IP connection. A Windows Control Panel is provided and most third party control systems interface directly with the entire C2 range of products. A front panel LCD makes setup easy.

Variable Zoom to 10X allows you to enlarge any part of the computer screen to fill the entire video screen and position controls allow you to move around to any area desired. Variable Shrink to as little as 10% allows fitting the image onto most displays. The advanced Digital Flicker Elimination circuitry and high sampling rate insures crisp, clear images, while full bandwidth chroma sampling insures faithfully reproduced, high resolution colors. The C2-2000 series units are housed in desktop cases and rackmount kits are available as options.

The Genlock feature insures precise synchronization of the incoming signals by providing a wide Subcarrier lock range with Subcarrier phase adjustment.

C2-2150A Down Converter PLUS has all the functions and features of the C2-2100A and adds a wide variety of additional capabilities, such as PIP, Chromakey, Lumakey and Mixing. The Key Mode allows computer graphics to be keyed over an external Composite or YC signal. The keyed image may be faded in and out. Due to the 4:4:4 sampling format, precise keying at the pixel level can be achieved. The Mix Mode permits glitch-free mixing between the computer image and external video. The PIP Mode allows either of the computer inputs to be inset in a window over either of the video inputs. The **C2-2155A** provides a HD/SD-SDI output.

Temporal Interpolation greatly improves conversion from one frame-rate to another by merging multiple frames of video information to create intermediate frames, which is vital for smoothly scrolling images.

C2-2100/05A, C2-2150/55A Specifications

Computer Inputs (2x)

Signal Type	1x Analog via HD-15F w/Loop-thru 1x DVI-D via DVI-I Connector
Format	RGBHV, RGBS, RGsB, YPbPr
Sync	TTL Level, 10KΩ, Pos or Neg
Termination	Auto-terminating into 75Ω
R-G-B Level Range	0.5-2.0 Vp-p
Scan Rate Detection	Automatic
Analog Signals	PC to 2048x2048,HD to 1080p/60
DVI Signals	PC to 1920x1200 @ 60Hz, HD to 1080p/60
Vertical Refresh Rate	Any to 250Hz
Max Horiz Scan Rate	150KHz
Computer Compatibility	PC, Macintosh, Workstations

Video Outputs

Television Standards	NTSC, PAL, PAL-M, PAL-N, SECAM
Impedance	75Ω
Composite Video	1x via BNC
YC (S-Video)	1x via 4-PIN Mini-DIN
YUV, YPbPr	1x via 3-BNC
SDI (SMPTE 259M/292M)	1x via BNC (C2-2105A & C2-2155A)

Video Inputs (C2-2150A, C2-2155A)

Composite Video	1x via BNC
YC (S-Video)	1x via 4-Pin Mini-DIN Connector
Genlock	1x via BNC

General

Size and Position	Automatic via AutoSet or Manual
Image Size	User-Definable Presets
Image Freeze	One Video Frame
Settings Memory	Non-Volatile
Zoom Range	Variable to 10X Zoom
Shrink Range	Variable to 10%
Image Mirroring	Horizontal and/or Vertical
Horizontal Filtering	Full Digital
Conversion Technology	Proprietary – CORIO®2
Frame Rate Conversion	Temporal
Color Resolution	24-bit (16.8 Million Colors)
Sampling Rate	162MHz
Digital Sampling	24-bit, 4:4:4 format
Firmware Memory	Flash, Upgradeable via RS-232
Video Encoder	8-bit Digital
Video Adjustments	R-G-B Levels

Operational Modes (C2-2150A, C2-2155A)

Key	Chromakey or Lumakey
Mix	Mix PC to/from Video
PIP	Variable Window Size & Position

Genlock Adjustments

Subcarrier Lock Range	+/- 200Hz for NTSC Operation (+/- 250Hz for PAL Operation)
Subcarrier Phase	+/- 180°

SDI Jitter

SMPTE259M-C	(270Mbps: 525/625 Line) Jitter 0.070 +/-0.01 UI
SMPTE292M	(1.485/1.4835Gpbs: 720p, 1035i, 1080i, 1080p) Jitter 0.176 +/-0.02 UI

Control Methods

Local	via Front Panel Buttons & OSD
RS-232 Interface	via D9 Female Connector
IP Interface	RJ45 Connector
Infrared Remote	via IRC-5 Remote Unit
Input Expansion Control	via D-15 Options Connector

Warranty

Limited Warranty	2 Years Parts and Labor

Regulatory Compliance

Main Units	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Mechanical

Size (H-W-D)	41.5x218x150mm(1.63"x8.6"x5.9")
C2-2100 Weight (Net)	1.26kg (2.77 lbs)
C2-2105 Weight (Net)	1.26kg (2.77 lbs)
C2-2150 Weight (Net)	1.26kg (2.77 lbs)
C2-2155 Weight (Net)	1.28kg (2.82 lbs)

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

Power Requirement

External Power Supply	12VDC@1A

Accessories Included

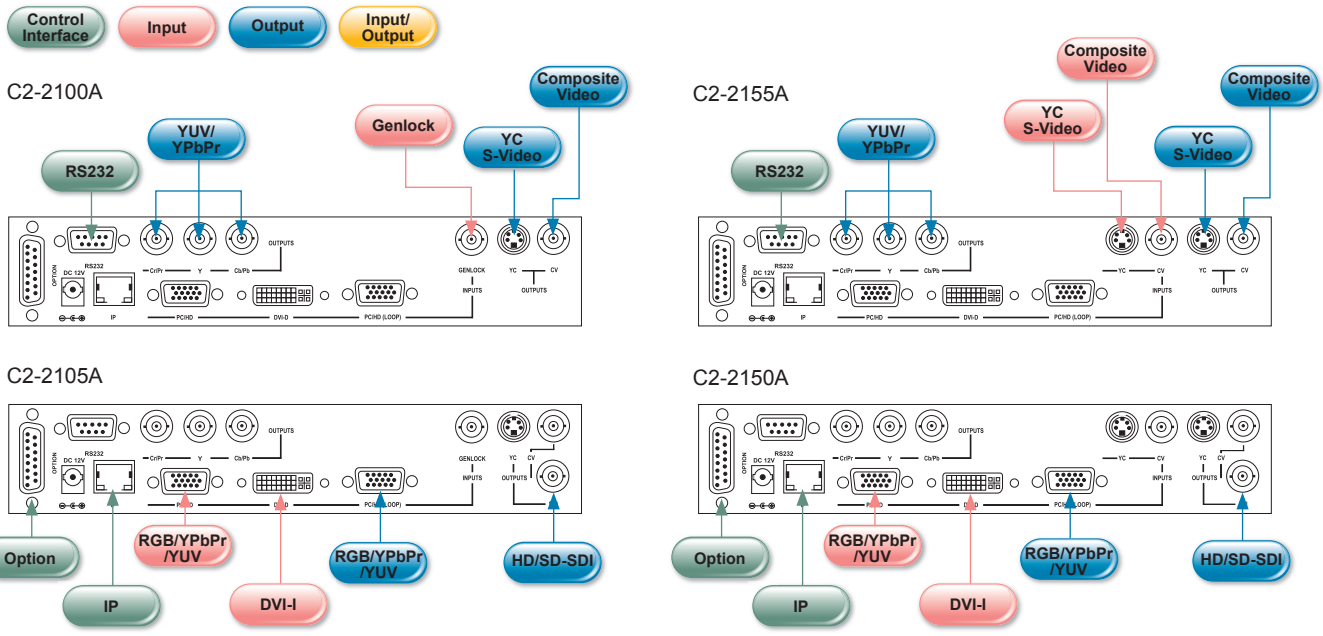
1x Operations Manual	C2-2000A Series
1x Power Adapter	US, UK or Euro

Product Item Numbers

C2-2100A	Down Converter
C2-2105A	Down Converter w/HD/SD-SDI Out
C2-2150A	Down Converter PLUS
C2-2155A	Down Converter PLUS w/HD/SD-SDI

Optional Accessories

IRC-5	Infrared Remote Control
RM-220	Single/Dual Rackmount Kit
S2 Series	Input Expansion Switchers
1x Control Software	Downloadable from website



C2-1100, C2-1150

Down Converters

Key Features C2-1100, C2-1150

- Automatic Incoming Resolution Detection
- Two Computer Inputs via HD-15 and 5-BNC
- Computer Resolutions to 2048x2048
- All HDTV resolutions to 1080p/60
- AutoSet - Automatic picture sizing
- Multiple Worldwide Television Standards
- CV, YC, YUV, YPbPr Outputs
- RS-232 Interface
- Windows Control Panel
- Variable Image 10X Zoom & Shrink to 10%
- Opt. IR Remote Control
- Opt. Single/Dual Rackmount Kit
- Opt. Input Expansion for Additional Inputs
- Genlock with Subcarrier Phase Adjustment (C2-1150)
- PIP, Chromakey and Lumakey (C2-1150)
- CV and YC (S-Video) Input (C2-1150)

C2-1100 Down Converter is based on TV One's exclusive CORIO®2 technology and provides high quality scan conversion from Computer or HDTV signals to standard video formats. It handles any computer resolution up to 2048x2048 at any vertical refresh rate and all HDTV resolutions up to 1080p. A wide variety of computer signal formats are available to support PC, Mac and Workstation formats. Video outputs are switchable between NTSC and PAL and are simultaneously provided in Composite, YC and YUV Component. Alternatively, the output can be YPbPr Component (Progressive Scan). A PC loop-thru is also provided.

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. All settings are stored in non-volatile memory and are retained even when power is switched off. All the functions can be controlled via the front panel Push Buttons, an Infrared Remote Control Unit or via an RS-232 connection. A Windows Control Panel is provided and most third party control systems interface directly with the entire C2 range of products. An On-Screen Display is available to assist in setup.

Variable Zoom to 10X allows you to enlarge any part of the computer screen to fill the entire video screen and position controls allow you to move around to any area desired. Variable Shrink to as little as 10% allows fitting the image onto most displays. The advanced Digital Flicker Elimination circuitry and high sampling rate insures crisp, clear images, while full bandwidth chroma sampling insures faithfully reproduced, high resolution colors. The C2-1100 is housed in a desktop case and a rackmount kit is available as an option.

C2-1150 Down Converter PLUS has all the functions and features of the C2-1100 and adds a wide variety of additional capabilities, such as Genlock, PIP, Chromakey and Lumakey. The Key Mode allows computer graphics to be keyed over an external Composite or YC signal or vice versa. The keyed image may be faded in and out. Due to the 4:4:4 sampling format, precise keying at the pixel level can be achieved. The Mix Mode permits glitch-free mixing between the computer image and external video. The PIP Mode allows either of the computer inputs to be inset in a window over either of the video inputs.

Temporal Interpolation greatly improves conversion from one frame-rate to another by merging multiple frames of video information to create intermediate frames, which is vital for smoothly scrolling images.

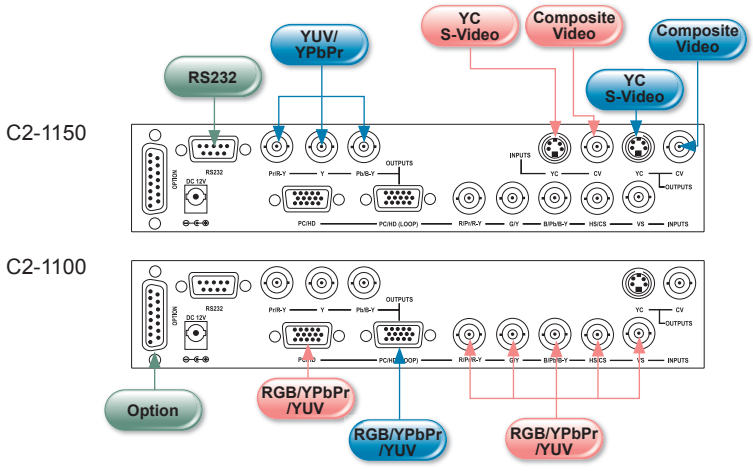
The Genlock feature insures precise synchronization of the incoming signals by providing a wide Subcarrier lock range with Subcarrier phase adjustment.

C2-1100, C2-1150 Specifications

Computer Inputs (2x)	
Signal Type - Analog	RGBHV, RGBS, RGsB, YPbPr
Sync	TTL Level, 10KΩ, Pos or Neg
Termination	Auto-terminating into 75Ω
Connectors	1x HD-15 Female with Loop-thru 1x via 5-BNC
R-G-B Level Range	0.5-2.0 Vp-p
Scan Rate Detection	Automatic
PC Resolutions	Any up to 2048x2048
HDTV Resolutions	Any up to 1080p/60
Vertical Refresh Rate	Any to 250Hz
Max Horiz Scan Rate	150KHz
Computer Compatibility	PC, Macintosh, Workstations
Video Inputs	(C2-1150 Only)
Composite Video	1x via BNC
YC (S-Video)	1x via 4-Pin Mini-DIN Connector
Video Outputs	
Television Standards	NTSC, PAL, PAL-M, PAL-N, SECAM
Impedance	75Ω
Composite Video	1x via BNC
YC (S-Video)	1x via 4-PIN Mini-DIN
YUV, YPbPr	1x via 3-BNC
Computer Loop-thru	1x via HD-15 Female Connector
General	
Size and Position	Automatic via AutoSet or Manual
Image Size	User-Definable Presets
Image Freeze	One Video Frame
Settings Memory	Non-Volatile
Zoom Range	Variable to 10X Zoom
Shrink Range	Variable to 10%
Image Mirroring	Horizontal and/or Vertical
Horizontal Filtering	Full Digital
Frame Rate Conversion	Temporal (1150 only)
Conversion Technology	Proprietary – CORIO®2
Color Resolution	24-bit (16.8 Million Colors)
Sampling Rate	108MHz
Digital Sampling	24-bit, 4:4:4 format
Firmware Memory	Flash, Upgradeable via RS-232
Video Encoder	8-bit Digital
Video Adjustments	R-G-B Levels

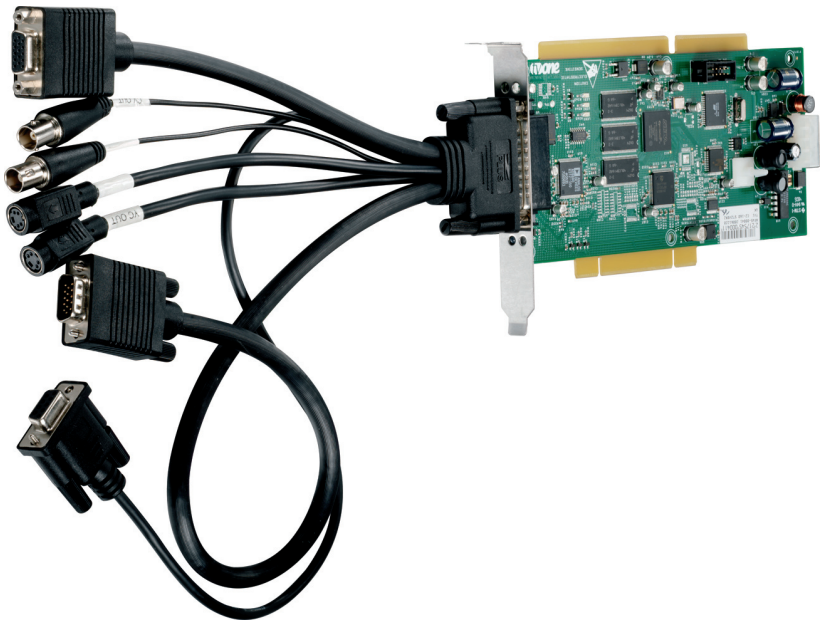
Operational Modes	(C2-1150)
Key	Chromakey or Lumakey
Mix	Mix PC to/from Video
PIP	Variable Window Size & Position
Genlock Adjustments	(C2-1150)
Subcarrier Lock Range	+/- 200Hz for NTSC Operation (+/- 250Hz for PAL Operation)
Subcarrier Phase	+/- 180°
Control Methods	
Local	via Front Panel Buttons & OSD
RS-232 Interface	via D9 Female Connector
Infrared Remote	via IRC-5 Remote Unit
Input Expansion Control	via D-15 Options Connector
Warranty	
Limited Warranty	2 Years Parts and Labor
Regulatory Compliance	
Main Units	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS
Mechanical	
Size (H-W-D)	41.5x218x150mm(1.63"x8.6"x5.9")
Weight (Net)	1.22kg (2.68 lbs)
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
Power Requirement	
External Power Supply	12VDC@1A
Accessories Included	
1x Operations Manual	C2-1000 Series
1x Power Adapter	US, UK or Euro
Product Item Numbers	
C2-1100	Down Converter
C2-1150	Down Converter PLUS
Optional Accessories	
IRC-5	Infrared Remote Control
RM-220	Single/Dual Rackmount Kit
S2 Series	Input Expansion Switchers
1x Control Software	Downloadable from website

Control Interface | Input | Output | Input/ Output



C2-160

Down Converter



Key Features C2-160

- Automatic Incoming Resolution Detection
- 1x Computer Input with Loop-thru
- Computer Resolutions to 2048x2048
- All HDTV resolutions to 1080p/60
- 1xCV and 1xYC (S-Video) Inputs
- Multiple Worldwide Television Standards
- 1xCV and 1xYC Outputs
- Control by RS-232 or IR Interface
- Windows Control Panel included
- Optional IR Remote Control
- Variable Image 10X Zoom & Shrink to 10%
- Genlock with Subcarrier Phase Adjustment
- Mix, PIP, Chromakey and Lumakey
- AutoSet - Automatic picture sizing

C2-160 PCI/ISA Card Down Converter is based on TV One's exclusive CORIO®2 technology and provides high quality scan conversion from Computer or HDTV signals to standard video formats in a compact package. It handles virtually any computer resolution up to 2048x2048 at any vertical refresh rate and all HDTV resolutions up to 1080p. A wide variety of computer signal formats are available to support PC, Mac and Workstation formats. Video outputs are switchable between NTSC and PAL and are simultaneously provided in Composite and YC. A PC loop-thru is also provided.

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. All settings can be stored in non-volatile memory and are retained even when power is switched off. All the functions can be controlled via an optional Infrared Remote Control Unit or an RS-232 connection. A Windows Control Panel is provided and most third party control systems interface directly with the entire C2 range of products. An On-Screen Display is available to assist in setup.

Variable Zoom to 10X allows you to enlarge any part of the computer screen to fill the entire video screen and position controls allow you to move around to any area desired. Variable Shrink to as little as 10% allows fitting the image onto most displays. The advanced Digital Flicker Elimination circuitry and high sampling rate insures crisp, clear images, while full bandwidth chroma sampling insures faithfully reproduced, high resolution colors. The C2-160 plugs into a vacant slot inside a PC and receives its power from a standard Hard Drive connector within the PC.

The C2-160 also features a wide variety of additional capabilities, such as Genlock, Chromakey and Lumakey. The Key Mode allows computer graphics to be keyed over an external Composite or YC signal. The keyed image may be faded in and out. Due to the 4:4:4 sampling format, precise keying at the pixel level can be achieved. The Mix Mode permits glitch-free mixing between the computer image and external video. The PIP Mode allows the computer input to be inset in a window over either of the video inputs.

The Genlock feature insures precise synchronization of the incoming signals by providing a wide Subcarrier lock range with Subcarrier phase adjustment.

The unit is provided with a single break-out cable incorporating all of the required PC and video inputs and outputs, along with RS232.

C2-160 Specifications

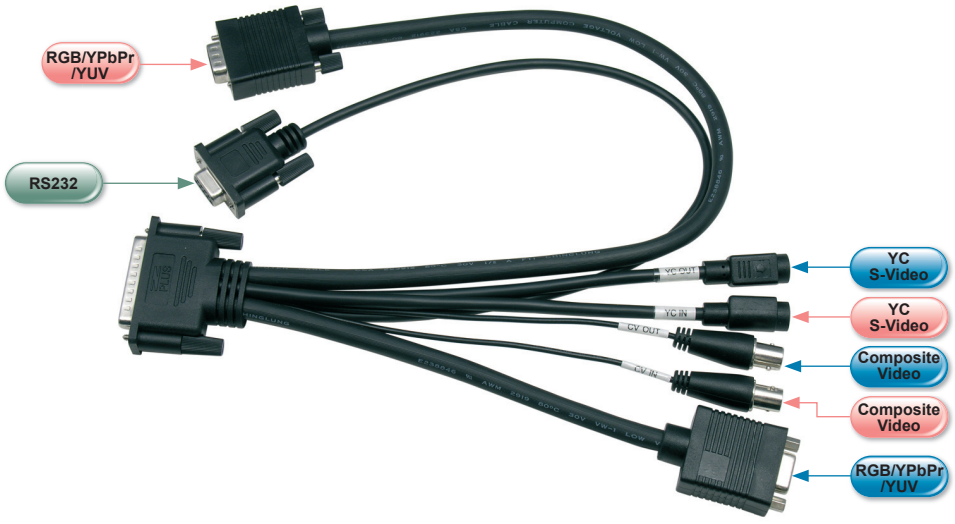
Computer Input	(Note 1)
VGA Video	1x HD-15 Male Connector
Signal Type - Analog	RGBHV, RGBS, RGsB, YPbPr
Sync	TTL Level, 10KΩ, Pos or Neg
Termination	Auto-terminating into 75Ω
R-G-B Level Range	0.5-2.0 Vp-p
Scan Rate Detection	Automatic
PC Resolutions	Any up to 2048x2048
HDTV Resolutions	Any up to 1080p/60
Max Horiz Scan Rate	150KHz
Video Inputs	(Note 1)
Composite Video	1x BNC Connector
YC (S-Video)	1x 4-Pin Mini-DIN Connector
Standards Supported	NTSC, PAL
Impedance	75Ω
CV/YC Decoder	8-bit Digital
Comb Filter Decoding	Adaptive
CV, YC Adjustments	Contrast, Bright, Saturation, Hue
Sub-carrier Lock Range	+/-200Hz NTSC, +/-250Hz PAL
Sub-Carrier Phase	+/- 180 degrees
Video Outputs	(Note 1)
Composite Video	1x BNC Connector
YC (S-Video)	1x 4-PIN Mini-DIN Connector
Computer Loop-thru	1x HD-15 Female Connector
Television Standards	NTSC, PAL
Impedance	75Ω
CV/YC Encoder	8/10 bit Digital
Operational Modes	
Key	Chromakey or Lumakey
Mix	Mix PC To/From Video
PIP	Variable Window Size & Pos.
General	
Pix Size and Position	Automatic AutoSet or Manual
Image Size	User-Definable Presets
Image Freeze	One Video Frame
Settings Memory	Non-Volatile
Zoom Range	Variable to 10X Zoom
Shrink Range	Variable to 10%
Image Mirroring	Horizontal and/or Vertical
Horizontal Filtering	Full Digital
Conversion Technology	Proprietary – CORIO®2
Color Resolution	24-bit (16.8 Million Colors)
Sampling Rate	108MHz
Digital Sampling	24-bit, 4:4:4 format
Firmware Memory	Flash, Upgradeable via RS-232
Video Adjustments	R-G-B Levels
Control Methods	
Local	Via Included software
Infra-Red	Via Optional Remote Control
RS-232 Interface	Via D9 Female Conn. (Note 1)
Warranty	
Limited Warranty	2 Years Parts and Labor
Regulatory Compliance	
PCI/ISA Card	FCC, CE, CSA, RoHS
Mechanical	
Size (W-D)	100mmx204mm (4"x8")
Weight (Net)	0.14 kg (0.31 lbs)
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
Power Requirement	
12 VDC @ 800ma	Via PC Hard Drive Connector
Accessories Included	
1x Breakout Cable	HD-44 to Various Connectors
1x Operations Manual	Provided on CD
1x Control Software	Microsoft Windows Based
Product Item Numbers	
C2-160	PCI/ISA Down Converter
Optional Accessories	
IRC5	Infrared Remote Control

Note

(1) All Video and PC connections are via a breakout cable.

Control Interface | Input | Output | Input/ Output

C2-160 Breakout Cable



1T-C2-100, 1T-C2-150

Down Converters

Key Features 1T-C2-100, 1T-C2-150

- Automatic Incoming Resolution Detection
- Computer Input via HD-15 with Loop-thru
- Computer Resolutions to 2048x2048
- All HDTV resolutions to 1080p/60
- AutoSet® - Automatic picture sizing
- Multiple Worldwide Television Standards
- Two CV and Two YC Outputs
- RS-232 Interface
- Windows Control Panel included
- Variable Image 10X Zoom & Shrink to 10%
- Optional IR Remote Control
- Optional Single/Dual Rackmount Kit
- Genlock with Subcarrier Phase Adjustment (1T-C2-150)
- Chromakey and Lumakey (1T-C2-150)
- Mix and PIP (1T-C2-150)
- CV and YC Input (1T-C2-150)

1T-C2-100 Down Converter is based on TV One's exclusive CORIO®2 technology and provides high quality scan conversion from Computer or HDTV signals to standard video formats in a compact package. It handles any computer resolution up to 2048x2048 at any vertical refresh rate and all HDTV resolutions up to 1080p. A wide variety of computer signal formats are available to support PC, Mac and Workstation formats. Video outputs are switchable between NTSC and PAL and are simultaneously provided in Composite and YC. A PC loop-thru is also provided.

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. All settings are stored in non-volatile memory and are retained even when power is switched off. All the functions can be controlled via the front panel Push Buttons, an Infrared Remote Control Unit or an RS-232 connection. A Windows Control Panel is provided and most third party control systems interface directly with the entire C2 range of products. An On-Screen Display is available to assist in setup.

Variable Zoom to 10X allows you to enlarge any part of the computer screen to fill the entire video screen and position controls allow you to move around to any area desired. Variable Shrink to as little as 10% allows fitting the image onto most displays. The advanced Digital Flicker Elimination circuitry and high sampling rate insures crisp, clear images, while full bandwidth chroma sampling insures faithfully reproduced, high resolution colors. The 1T-C2-100 is housed in a compact desktop case and a single/dual rackmount kit is available as an option.

1T-C2-150 Down Converter PLUS has all the functions and features of the 1T-C2-100 and adds a wide variety of additional capabilities, such as Genlock, Chromakey and Lumakey. The Key Mode allows computer graphics to be keyed over an external Composite or YC signal. The keyed image may be faded in and out. Due to the 4:4:4 sampling format, precise keying at the pixel level can be achieved. The Mix Mode permits glitch-free mixing between the computer image and external video. The PIP Mode allows the computer input to be inset in a window over either of the video inputs.

The Genlock feature insures precise synchronization of the incoming signals by providing a wide Subcarrier lock range with Subcarrier phase adjustment.

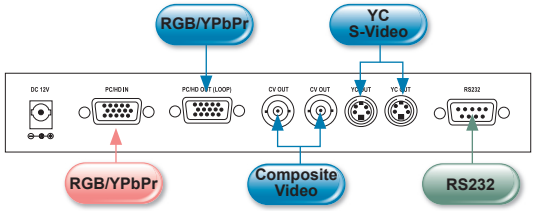
1T-C2-100, 1T-C2-150 Specifications

Computer Input	
Signal Type - Analog	RGBHV, RGBS, RGsB, YPbPr
Sync	TTL Level, 10KΩ, Pos or Neg
Termination	Auto-terminating into 75Ω
Connectors	1x HD-15 Female with Loop-thru
R-G-B Level Range	0.5-2.0 Vp-p
Scan Rate Detection	Automatic
PC Resolutions	Any up to 2048x2048
HDTV Resolutions	Any up to 1080p/60
Vertical Refresh Rate	Any to 250Hz
Max Horiz Scan Rate	150KHz
Computer Compatibility	PC, Macintosh, Workstations
Video Inputs	(1T-C2-150 Only)
Composite Video	1x via BNC
YC (S-Video)	1x via 4-Pin Mini-DIN Connector
Video Outputs	
Television Standards	NTSC, PAL, PAL-M, PAL-N, SECAM
Impedance	75Ω
Composite Video	2x via BNC (1x on 1T-C2-150)
YC (S-Video)	2x via 4-PIN (1x on 1T-C2-150)
Computer Loop-thru	1x via HD-15 Female Connector
General	
Size and Position	Automatic via AutoSet or Manual
Image Size	User-Definable Presets
Image Freeze	One Video Frame
Settings Memory	Non-Volatile
Zoom Range	Variable to 10X Zoom
Shrink Range	Variable to 10%
Image Mirroring	Horizontal and/or Vertical
Horizontal Filtering	Full Digital
Conversion Technology	Proprietary – CORIO®2
Color Resolution	24-bit (16.8 Million Colors)
Sampling Rate	108MHz
Digital Sampling	24-bit, 4:4:4 format
Firmware Memory	Flash, Upgradeable via RS-232
Video Encoder	8-bit Digital
Video Adjustments	R-G-B Levels

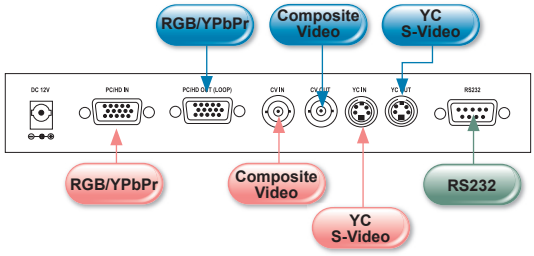
Operational Modes	(1T-C2-150)
Key	Chromakey or Lumakey
Mix	Mix PC to/from Video
PIP	Variable Window Size & Position
Genlock Adjustments	(1T-C2-150)
Subcarrier Lock Range	+/- 200Hz for NTSC Operation (+/- 250Hz for PAL Operation)
Subcarrier Phase	+/- 180°
Control Methods	
Local	via Front Panel Buttons & OSD
RS-232 Interface	via D9 Female Connector
Infrared Remote	via IRC-5 Remote Unit
Warranty	
Limited Warranty	2 Years Parts and Labor
Regulatory Compliance	
Main Units	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS
Mechanical	
Size (H-W-D)	30x200x90mm(1.18"x7.87"x3.54")
Weight (Net)	0.52 kg (1.14 lbs)
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
Power Requirement	
External Power Supply	12VDC@1A
Accessories Included	
1x Operations Manual	1T-C2-100 Series
1x Power Adapter	US, UK or Euro
Product Item Numbers	
1T-C2-100	Down Converter
1T-C2-150	Down Converter PLUS
Optional Accessories	
IRC-5	Infrared Remote Control
RM-230	Single/Dual Rackmount Kit
1x Control Software	Downloadable from website

Control Interface | Input | Output | Input/ Output

1T-C2-100



1T-C2-150



Format Converters

Converting between various analog and digital formats when no scaling of the signal is required can be accomplished by using a Format Converter. The output resolutions will be the same as the input.

Format Converters Comparison Chart

Model	1T-C2-511	1T-C2-520	1T-FC-326	1T-YPbPr-HDMI	1T-DVI-HDMI	1T-HDMI-DVI	1T-FC-524	1T-FC-425	1T-AP-216
VIDEO INPUTS									
Maximum Resolutions									
PC					UXGA	UXGA	UXGA	UXGA	
HDTV	1080p30	1080p30	1080p	1080p	1080p	1080p	1080p	1080p	
SDTV	525i/625i	525i/625i	480i/576i	480i/576i	480i/576i	480i/576i	480i/576i	480i/576i	
Signal Format/Connector									
SD/HD-SDI via BNC	✓								
HDMI via HDMI			✓ (2)			✓			
DVI via DVI-I		✓ (DVI-I)			✓ (DVI-D)			✓ (DVI-D)	
RGB/YPbPr via HD15							✓		
YUV/YPbPr via 3-RCA				✓					
YUV/YPbPr via 3-BNC		✓							
AUDIO INPUTS									
Analog Stereo									✓
S/PDIF Digital				✓ (Toslink)	✓ (Coaxial)				
Embedded SD/HD-SDI	✓								
Embedded HDMI			✓			✓			
VIDEO OUTPUTS									
Maximum Resolutions									
PC					UXGA	UXGA	UXGA	UXGA	
HDTV	1080p30	1080p30	1080p	1080p	1080p	1080p	1080p	1080p	
SDTV	525i/625i	525i/625i	480i/576i	480i/576i	480i/576i	480i/576i	480i/576i	480i/576i	
Signal Format/Connector									
SD/HD-SDI via BNC	Reclocked	✓							
HDMI via HDMI Type A				✓	✓				
DVI via DVI-I	✓ (DVI-I)					✓ (DVI-D)	✓ (DVI-D)		
RGB/YPbPr via HD15								✓	
YUV/YPbPr via 3-RCA			✓						
AUDIO OUTPUTS									
Analog Stereo	✓		✓						
S/PDIF Digital						✓ (Coaxial)			✓ (Toslink & Coaxial)
Embedded HDMI				✓	✓				
AES3-id	✓ (BNC)								
FEATURES									
RS-232 Interface	✓	✓							
IR Interface			✓						
Form Factor	½ Rack	½ Rack	½ Rack	Mini	Mini	Mini	Mini	Mini	Micro
Rack Mount	Optional	Optional	Optional	N/A	N/A	N/A	N/A	N/A	N/A

1T-C2-511

SD/HD-SDI to DVI-I Format Converter

Key Features 1T-C2-511

- Full Digital SD/HD-SDI Conversion
- Equalized and Re-clocked SD/HD-SDI Loop-thru
- DVI HD out resolution matches SDI in
- 525i/625i SDI in line-doubled to 480p/576p
- Stereo Audio Extraction to Analog and Digital out
- RS-232 Interface

1T-C2-511 is a high performance converter that transforms HD-SDI signals to DVI-I, both digital and analog. Designed for broadcast and professional use, the unit provides a highly reliable conversion with re-clocking and equalization of the input. It also handles 525i or 625i SD-SDI signals, converting them to 480p and 576p respectively. HD-SDI HDTV resolutions from 720p to 1080i 60Hz are accommodated. Embedded Stereo Audio may be extracted from the SD or HD-SDI input. Any one of the eight available stereo channels may be selected and output in analog and AES3-id digital formats. Control is via front panel buttons and an on-screen display. The unit is housed in a Desktop metal case with an optional Single/Dual Rackmount Kit.

1T-C2-520

DVI-I to SD/HD-SDI Format Converter

Key Features 1T-C2-520

- Full Digital SD/HD-SDI Conversion
- Serial Digital Video Output up to 1.485Gbits/sec
- HD-SDI out resolution matches DVI in
- 525i/625i YUV converts to SD-SDI
- RS-232 Interface
- Opt. Single/Dual Rackmount Kit available

1T-C2-520 is a high performance converter that transforms DVI-D 720p or 1080i HD signals to HD-SDI for broadcast and professional use. An analog YPbPr or RGBHV signal can also be converted to HD-SDI. It also converts a standard analog YUV signal at 525i or 625i to SD-SDI. No scaling is performed within the unit, so the input vertical rates must be exact, per the chart opposite. The 1T-C2-520 is controlled via front panel buttons and an on-screen display. The unit is housed in a Desktop metal case and an optional Single/Dual Rackmount Kit is available.

1T-C2-511 & 1T-C2-520 Specifications

SD/HD-SDI Video Input (1T-C2-511)

SMPTE259M @ 270Mb/s, SMPTE292M to 1485Mb/s	1x via BNC Connector
Video Processing	24 bit, 4:4:4

SD/HD-SDI Video Output (1T-C2-511)

Active Looping Signal	Equalized & Re-clocked

DVI-I Video Outputs (1T-C2-511)

DVI Digital Output	1x via DVI-I Connector
Output Resolutions	Per table below

Analog Video Output (1T-C2-511)

RGBHV / YPbPr	1x via the DVI-I Connector

Audio Extraction (1T-C2-511)

Input Format	SD-SDI or HD-SDI
Number of Stereo Outputs 8x embedded in SDI input	1x selected from any of the
Sample Rate	48kHz

Stereo Audio Out (1T-C2-511)

Analog Stereo	2x RCA Connectors
AES3-id Digital Stereo	1x via BNC Connector

DVI-I Video Input (1T-C2-520)

DVI-D or RGBHV	1x via DVI-I Connector

Component Video Input (1T-C2-520)

YUV or YPbPr	1x via 3x BNC Connectors

SD/HD-SDI Video Output (1T-C2-520)

SMPTE259M @ 270Mb/s, SMPTE292M to 1485Mb/s	1x via BNC Connector
Video Processing	24 bit, 4:4:4
Output Resolutions	Per table below

Control Method

Display	On screen display
Front Panel Buttons	Menu, Up, Down

Mechanical

Size (HWD)	30x200x90mm(1.2"x7.87"x3.5")
Weight (Net)	0.54 kg (1.19 lbs)

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

Warranty

Limited Warranty	2 Years Parts and Labor

Power Requirement

External Power Supply	12VDC@1A - Locking DC

Regulatory Approvals

Converter Unit	FCC, CE, RoHS
Power Supply	UL, CUL, CE, PSE, GS, RoHS

Product Item Numbers

1T-C2-511	SD/HD-SDI to DVI-I Converter
1T-C2-520	DVI to SDI Converter

Accessories Included

Video Adapters	DVI to VGA (1T-C2-511)
1x Power Adapter	US, UK or Euro
Operations Manual	

Optional Accessories

RM-230	Single/Dual Rackmount Kit

Notes

(1) Resolutions not listed in the Table are not supported.
(2) No scaling is provided so the output resolution and vertical rate will match the input signal exactly.
(3) The output clock matches input clock with no jitter reduction, so input jitter is transferred to the output.
(4)Video input timing must correspond to SMPTE 259M/292M timing exactly or output will not be valid.

1T-C2-511 In/Output Conversion Table

Input Signal

525-line SD-SDI @ 29.97Hz
625-line SD-SDI @ 25Hz
720p HD-SDI @ 23.98, 24, 25, 29.97, 30, 50, 59.94, 60Hz
1080p HD-SDI @ 23.98, 24, 25, 29.97, 30Hz
1035i HD-SDI @ 29.97, 30Hz
1080i HD-SDI @ 25, 29.97, 30Hz

Digital and Analog Video Output Signal

525-line progressive DVI-I @ 59.94Hz
625-line progressive DVI-I @ 50Hz
720-line progressive DVI-I @ same frame rate as input
1080-line progressive DVI-I @ same frame rate as input
1035-line interlaced DVI-I @ same frame rate as input
1080-line interlaced DVI-I @ same frame rate as input

1T-C2-520 In/Output Conversion Table

Digital Video Input Signal

N/A
N/A
720-line progressive DVI-D
@ 23.98, 24, 25, 29.97, 30, 50, 59.94, 60Hz
1080-line progressive DVI-D
@ 23.98, 24, 25, 29.97, 30Hz
1035-line interlaced DVI-D
@ 29.97,30Hz
1080-line interlaced DVI-D
@ 25, 29.97, 30Hz

Analog Video Input Signal

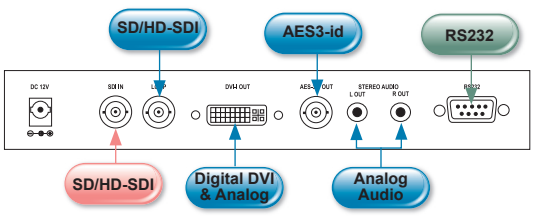
525-line interlaced YUV @ 29.97Hz
625-line interlaced YUV @ 25Hz
720-line progressive RGBHV/YPbPr
@ 23.98, 24, 25, 29.97, 30, 50, 59.94, 60Hz
1080-line progressive RGBHV/YPbPr
@ 23.98, 24, 25, 29.97, 30Hz
1035-line interlaced RGBHV/YPbPr
@ 29.97, 30Hz
1080-line interlaced RGBHV/YPbPr
@ 25 29.97, 30Hz

Output Signal

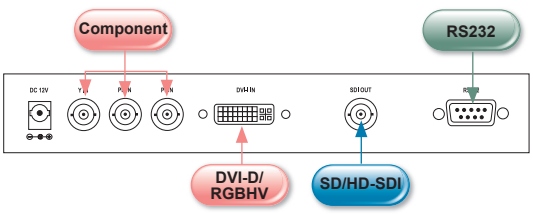
525-line SD-SDI @ 29.97Hz
625-line SD-SDI @ 25Hz
720p HD-SDI
@ same frame rate as input
1080p HD-SDI
@ same frame rate as input
1035i HD-SDI
@ same frame rate as input
1080i HD-SDI
@ same frame rate as input

Control Interface | Input | Output | Input/ Output

1T-C2-511



1T-C2-520



1T-FC-326

HDMI to YPbPr Format Converter

Key Features 1T-FC-326

- Compliant with HDMI 1.2a, HDCP 1.1 and DVI 1.0
- Allows Selection of either of 2 HDMI inputs
- Converts HDMI In to Component Video Out
- Supports all SDTV and HDTV Resolutions
- Provides Digital and Analog Stereo outputs
- IR Remote Control
- HDCP Compliant
- Accepts standard or locking type HDMI connectors
- Locking DC Power Supply

1T-FC-326 Format Converter is a high quality device that allows selection of either of its two HDMI inputs for conversion to an analog YPbPr or YUV output. Very wide video bandwidth insures that the analog output is capable of showing the fine detail present in most HDMI signals. The audio output includes Coaxial Digital and Analog Stereo (R/L) that has been de-embedded from the HDMI digital signal stream.

The unit may be operated either from the front panel buttons or the IR Remote Control. LEDs on the front panel indicate which of the two inputs is selected and if HDCP (Content Protection) is present. It accommodates cables with either standard or locking type connectors. Provisions are made for securing locking type HDMI connectors to the case. The unit requires external 5VDC and an AC Adapter is provided. It has a locking DC connector for added security.

Note – Since this device is HDCP Compliant, a content protected HDMI input may result in no output.

1T-YPbPr-HDMI

YPbPr to HDMI Format Converter

Key Features 1T-YPbPr-HDMI

- Excellent HDMI Compliant Video Quality
- Automatic Input Format Detection
- Toslink Audio Support
- Operating Frequency to 165Mhz

1T-YPbPr-HDMI converts an analog component YPbPr or YUV signal to an HDMI compliant output allowing the viewing or switching of an analog component video signal on an HDMI display. A Toslink input connector is provided to allow integration of a digital audio signal into the HDMI digital output stream. Component video inputs are via three RCA connectors.

This unit is a Format Converter only and no video scaling takes place. The output resolution is the same as the input. All common HDTV resolutions are automatically detected. The output is fully compliant with the HDMI 1.2 standard assuring proper decoding by an HDMI display. An AC Power Adapter is provided with locking DC connectors for security.

1T-FC-326 Specifications

Video Inputs

HDMI	2x via HDMI Connectors

Video Outputs

YPbPr or YUV	1x via 3x RCA Connectors

Video Performance

Output Level	Y=1V p-p, Pb/Pr=0.7Vp-p
Bandwidth	>160MHz
Impedance	75Ω

Compliance

HDMI	Version 1.2a
DVI	Rev 1.0
HDCP	Version 1.1

Audio Outputs

Analog Stereo (R/L)	1x via 2x RCA Connectors
Digital Audio (S/PDIF)	1x via RCA Connector

Audio Performance

Level (Analog)	(L/R) 2Vrms max @ 47KΩ
Level (Digital)	0.5~1Vp-p@75Ω
Bandwidth (Analog)	20Hz to 20 KHz
Impedance (Analog)	47KΩ
Impedance (Digital)	75Ω

Mechanical

Size (H-W-D)	30x200x90mm(1.18"x7.87"x3.54")
Weight (Net)	500 g (1.10 lbs)

Warranty

Limited Warranty	2 Years Parts and Labor

Environmental

Operating Temperature	0° to +50°C (+32° to +122°F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-10° to +60° C (+14° to +140° F)
Storage Humidity	10% to 90%, Non-condensing

Power Requirement

External Power Supply	5VDC@2A - Locking DC

Regulatory Approvals

Switcher Units	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Accessories Included

1x AC Power Adapter	US, UK or Euro
1x IR Remote Control	
1x Operations Manual	

Product Item Number 1T-FC-326

1T-YPbPr-HDMI Specifications

Input

YPbPr/YUV Video	1x via 3x RCA Connectors
Digital Audio	1x via Toslink Optical Connector

Output

HDMI	1x via HDMI Connector

Input Resolutions

Interlaced (50&60Hz)	480i, 576i, 1080i
Progressive (50&60Hz)	480p, 576p, 720p, 1080p
Special (24 to 50Hz)	1080p@24, 1080p@25
	1080p@30, 1080p@50

Video Specifications

Progressive Component	YPbPr
Interlaced Component	YUV (Y,R-Y,B-Y)
Input Signal Levels	Y= 1Vp-p. Pb, Pr, U, V= 0.7Vp-p
Impedance	75Ω, all inputs
Bandwdith	Up to 165Mhz

Compliance

HDMI	Version 1.2

Mechanical

Size (H-W-D)	30x76x105mm (1.2"x3"x4.1")
Weight (Net)	200 g (0.43 lbs)

Warranty

Limited Warranty	2 Years Parts and Labor

Environmental

Operating Temperature	0° to +50° C (+32° to +122° F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-10° to +60° C (+14° to +140° F)
Storage Humidity	10% to 90%, Non-condensing

Power Requirement

External Power Supply	5VDC@1A, Center Positive

Regulatory Approvals

Converter Unit	FCC, CE, RoHS
Power Supply	UL, CUL, CE, PSE, GS, RoHS

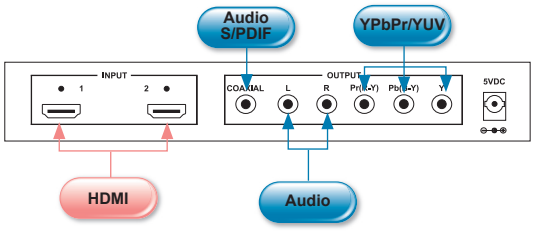
Accessories Included

1x Power Adapter	US, UK or Euro
1x Operations Manual	

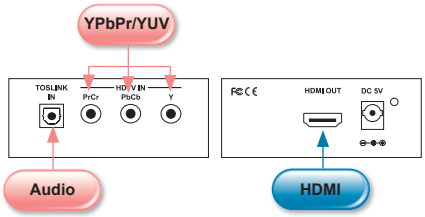
Product Item Number 1T-YPBPR-HDMI

Control Interface | Input | Output | Input/ Output

1T-FC-326



1T-YPbPr-HDMI



1T-HDMI-DVI
1T-DVI-HDMI

HDMI/DVI Format Converters

Key Features 1T-HDMI-DVI/DVI-HDMI

- Excellent Video Quality via HDMI/DVI interface
- Automatic Input Format Detection
- Plug and Play for easy installation
- Coaxial Audio Support (S/PDIF)
- Operation Frequency to 165Mhz

1T-HDMI-DVI converts HDMI compliant signals to Digital DVI format signals enabling display on digital HDTV monitors or input to DVI switcher devices. HDMI inputs are transformed to RGB Digital signals. **1T-DVI-HDMI** converts a Digital DVI signal to an HDMI compliant output allowing the viewing or switching of a DVI signal on an HDMI system.

These units are Format Converters only and no video scaling takes place. The output resolution is the same as the input. For both products, all standard HDTV and most computer resolutions are supported from 480i through 1080p and VGA through UXGA. Coaxial audio (S/PDIF) is available for superior performance and input format auto-detection is used to simplify operation. Both models are 5VDC powered and the Power Adapters are included. Locking DC Connectors are provided for security.

1T-FC-524
1T-FC-425

DVI-RGB/YPbPr Format Converters

Key Features 1T-FC-524, 1T-FC-425

- Analog to Digital or Digital to Analog
- HDTV resolutions to 1080p
- SDTV resolutions of 480i and 576i
- PC resolutions up to 1600x1200
- Plug and Play for Easy Installation
- DVI Bandwidth to 1.65Gbps (Single Link)
- Operation Frequency to 165Mhz

1T-FC-524 converts analog RGBHV or Component YPbPr inputs to DVI signals, enabling their display on DVI or HDTV monitors or other devices. An analog YPbPr input can be converted to either digital YPbPr or RGBHV. An analog RGBHV input can be converted to digital RGBHV only.

1T-FC-425 converts DVI to RGBHV or Component YPbPr, enabling viewing on analog displays or other devices. A DVI input can be converted to either analog RGBHV or YPbPr.

These units are Format Converters only and no video scaling takes place. The output resolution is the same as the input. All standard HDTV resolutions are supported on both products from 480p through 1080p, plus SDTV resolutions of 480i and 576i. PC resolutions up to 1920x1200 are supported. Both models are 5VDC powered and the Power Adapters are included. Locking DC Connectors are provided for security.

1T-HDMI-DVI/DVI-HDMI Specifications

Video Inputs

1T-HDMI-DVI	1x HDMI via HDMI Connector
1T-DVI-HDMI	1x DVI via DVI-I Connector

Audio Inputs

1T-DVI-HDMI	1x SPDIF Coaxial via RCA

Video Outputs

1T-HDMI-DVI	1x DVI via DVI-I Connector
1T-DVI-HDMI	1x HDMI via HDMI Connector

Audio Outputs

1T-HDMI-DVI	1x SPDIF Coaxial via RCA

HD I/O Resolutions (YPbPr)

Interlaced (50&60Hz)	480i, 576i, 1080i
Progressive (50&60Hz)	480p, 576p, 720p, 1080p
Special (24 to 30Hz)	1080p@24, 1080p@25, 1080p@30

PC I/O Resolutions (RGBHV)

VGA, SVGA, XGA	60,72,75,85 Hz
XGAi	87 Hz
SXGA	60,75,85 Hz
UXGA	60 Hz
1152x864	70,75,85 Hz

Compliance

HDMI	Version 1.0
DVI	Rev 1.0

Mechanical

Size (H-W-D)	30x76x105mm (1.2"x3.0"x4.1")
Weight (Net)	200 g (0.43 lbs)

Warranty

Limited Warranty	2 Years Parts and Labor

Environmental

Operating Temperature	0° to +50° C (+32° to +122° F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-10° to +60° C (+14° to +140° F)
Storage Humidity	10% to 90%, Non-condensing

Power Requirement

External Power Supply	5VDC@2A

Regulatory Approvals

Converter Unit	FCC, CE, RoHS
Power Supply	UL, CUL, CE, PSE, GS, RoHS

Accessories Included

1x Power Adapter	US, UK or Euro
1x Operations Manual	

Product Item Numbers 1T-HDMI-DVI, 1T-DVI-HDMI

1T-FC-524, 1T-FC-425 Specifications

Video Inputs

1T-FC-524	1x RGB/YPbPr via HD-15
1T-FC-425	1x DVI-D via DVI-I Connector

Video Outputs

1T-FC-524	1x DVI-D via DVI-I Connector
1T-FC-425	1x RGBHV/YPbPr via HD-15

Component Signal I/O

Y Component	1V p-p@75Ω
Pb/Pr Component	0.7V p-p@75Ω
RGBHV Signal I/O	
R-G-B	0.7V p-p@75Ω
HV Sync	3-5V p-p@75Ω

Frequency and Bandwidth

Frequency	Up to 165Mhz
DVI Bandwidth	1.65Gbps (Single Link)

PC I/O Resolutions

VGA	640x480	60, 72, 75, 85Hz
SVGA	800x600	60, 72, 75, 85Hz
XGA	1024x768	60, 70, 75, 85Hz
Mac	1152x864	70, 75, 85Hz
SXGA	1280x1024	60, 75, 85Hz
UXGA	1600x1200	60Hz

SDTV I/O Resolutions

480i	720x480	60Hz (NTSC)
576i	720x576	50Hz (PAL)

HDTV I/O Resolutions

480p	720x480	60Hz
576p	720x576	50Hz
720p	1280x720	50, 60Hz
1080i	1920x1080 (i)	50, 60Hz
1080p	1920x1080 (p)	24, 25, 30, 60Hz

1T-FC-524 Input Format Switch

YPbPr	Select when the input is YPbPr
RGBHV	Select when the input is RGBHV

1T-FC-524 Output Format Switch

Analog Input	Setting	Output Signal
YPbPr	Bypass or RGB	Digital YPbPr or RGB
RGBHV	Bypass or RGB	Digital RGB Only

1T-FC-425 Output Format Switch

Digital Input	Setting	Output Signal
YPbPr	YPbPr	Analog YPbPr
RGBHV	RGBHV	Analog RGBHV

Compliance

DVI	Rev 1.0

Mechanical

Size (H-W-D)	30x76x105mm (1.2"x3"x4.1")
Weight (Net)	200 g (0.43 lbs)

Warranty

Limited Warranty	2 Years Parts and Labor

Environmental

Operating Temperature	0° to +50° C (+32° to +122° F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-10° to +60° C (+14° to +140° F)
Storage Humidity	10% to 90%, Non-condensing

Power Requirement

External Power Supply	5VDC@2A

Regulatory Approvals

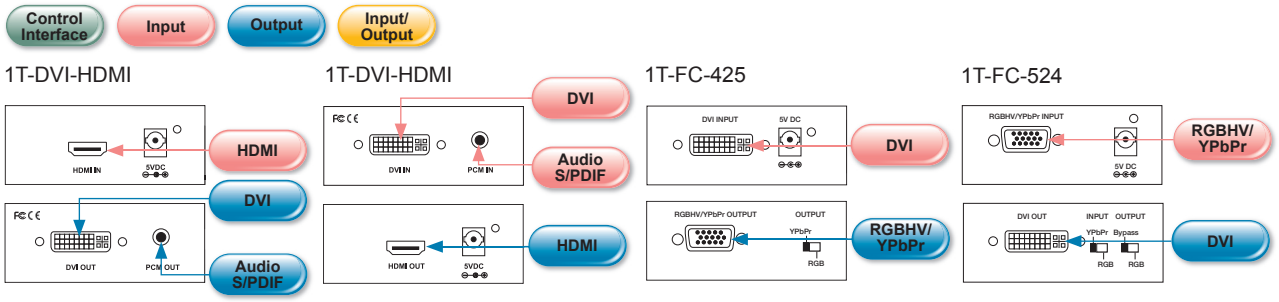
Converter Unit	FCC, CE, RoHS
Power Supply	UL, CUL, CE, PSE, GS, RoHS

Accessories Included

1x Power Adapter	US, UK or Euro
1x Adapter Cable	HD-15 to 3 RCA
1x Operations Manual	

Product Item Numbers

1T-FC-524	RGBHV/YPbPr to DVI
1T-FC-425	DVI to RGBHV/YPbPr



1T-AP-216

Analog Stereo to S/PDIF Format Converter

Key Features 1T-AP-216

- Input: Analog Stereo Audio (R/L Channel)
- SPDIF Outputs: Coaxial and Toslink
- 48kHz Sampling Rate
- Selectable 150ms Audio Delay•
  Locking DC Power Supply

1T-AP-216 Audio Converter changes Analog Stereo Audio (R&L) to simultaneously available SPDIF Optical and Coaxial Digital audio. Sampling is at 48Khz and transmission distances of over 5m (16 ft) are possible using the Optical Output. The Coaxial Digital Output transmission distance is limited by the quality of the cables and sensitivity of the receiving circuitry.

A special feature of the 1T-AP-216 allows the introduction of a 150ms delay into the Digital Data Stream intended to correct lip sync problems frequently present on HDTV broadcast programming. The unit is immune from electromagnetic noise and is easy to install and operate.

The unit requires external 5VDC and an AC Adapter is provided. It has a locking DC connector for added security.

A2-7300 Series

Audio Format Converter

A2-7300 Series units are high quality audio format converters that can be used in pairs to provide bi-directional analog/digital or AES3/AES3-id audio conversion. The unit pairs are interconnected with the cables provided via their HD-44 connectors. The chart at the right shows the audio format conversion paths available for each pair configuration. Full details of the A2-7300 Series can be found on page 14

1T-AP-216 Specifications

Audio Input

Analog Stereo Audio (R/L)	1x via 2x RCA Connectors

SPDIF Audio Outputs

Optical Stereo	1x via Toslink Connector
Coaxial Digital	1x via RCA Connector

Performance

Input Level (Analog)	(L/R) 2Vrms max @ 47KΩ
Output Level (Coaxial)	0.5~1Vp-p@75Ω
Output (Optical)	Standard Fiber-Optic Level
Bandwidth	20Hz to 20 KHz
Sampling Ratae	48kHz
Analog Input Impedance	47KΩ
Digital Output Impedance	75Ω (Coaxial)

Mechanical

Size (H-W-D)	24.5x57x46mm (0.9"x2.2x1.8")
Weight (Net)	30g (1.3 oz)

Warranty

Limited Warranty	2 Years Parts and Labor

Environmental

Operating Temperature	0° to +50°C (+32° to +122°F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-10° to +60° C (+14° to +140° F)
Storage Humidity	10% to 90%, Non-condensing

Power Requirement

External Power Supply	5VDC@0.5A - Locking DC

Regulatory Approvals

Audio Processor	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

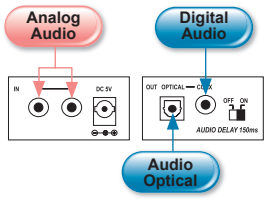
Accessories Included

1x AC Power Adapter	US, UK or Euro
1x Operations Manual	

Product Item Number 1T-AP-216

Control Interface | Input | Output | Input/ Output

1T-AP-216



Model Pairs		Audio Format Conversions Provided		
A2-7302	A2-7312	8x AES3 Inputs on XLR 8x AES3-id on BNC	to to	8x AES3-id on BNC 8x AES3 Inputs on XLR
A2-7302	A2-7322	8x AES3 Inputs on XLR 8x Analog Stereo on Terminals	to to	8x Analog Stereo on Terminals 8x AES3 Inputs on XLR
A2-7302	A2-7342	4x AES3 Inputs on XLR 4x Analog Stereo on XLR	to to	4x Analog Stereo on XLR 4x AES3 Inputs on XLR
A2-7312	A2-7322	8x AES3-id on BNC 8x Analog Stereo on Terminals	to to	8x Analog Stereo on Terminals 8x AES3-id on BNC
A2-7312	A2-7342	4x AES3-id on BNC 4x AES3 Inputs on XLR	to to	4x AES3 Inputs on XLR 4x AES3-id on BNC
A2-7322	A2-7342	4x Analog Stereo on Terminals 4x AES3 Inputs on XLR	to to	4x AES3 Inputs on XLR 4x Analog Stereo on Terminals

Standards Converters & TBC

Standards Converters allow you to convert video signals between a wide variety of worldwide broadcast television standards, such as NTSC, PAL and SECAM. Bi-directional conversion allows you to go in both directions. The integral Time Base Corrector aids in correcting video tape jitter or other unstable video sources. High performance is achieved by using Digital Conversion and Digital Comb Filtering in the decoding process. Motion Compensation is especially helpful in smoothing high speed scenes. Standards Converters can be either standalone devices or Standards Conversion can be a feature of a more complex product.

Time Base Corrector/Frame Synchronizers aids in correcting video tape jitter or other unstable video sources. The Frame Synchronizer function allows video signals to be locked together. High performance is achieved by using Digital Conversion and Digital Comb Filtering in the decoding process.

NEWS
TV1 NEWS

1T-PAL-NTSC
1T-PAL-NTSC-GL

Standards Converters

1T-TBC, 1T-TBC-GL

Time Base Correctors

Key Features 1T-PAL-NTSC/GL

- Multi-standard for World TV Systems
- Full Frame TBC for all Inputs
- Comb Filter Decoding of the Video Input
- Integral Video Processor for Adjustments
- Genlocks to System Reference (1T-PAL-NTSC-GL)

Key Features 1T-TBC, 1T-TBC-GL

- Multi-standard for Worldwide TV Systems
- Comb Filter Decoding of the Video Input
- Integral Video Processor for Adjustments
- Genlocks to System Reference (1T-TBC-GL)

1T-PAL-NTSC is an ultra compact, high performance Standards Converter that converts any of the widely used world television standards to any others. In addition, it also corrects instabilities present in video signals. An Automatic Gain circuit insure correct output levels. Noisy or distorted sync pulses are replaced with reinserted, stable sync. Digital Comb filtering is applied to YC signals. Processing controls are provided for Brightness, Contrast, Color and Hue (NTSC).

1T-PAL-NTSC-GL provides all the features of the 1T-PAL-NTSC plus frame synchronization of incoming signals. A Genlock feature enables the incoming signal to be locked to an external video source.

Both units will either automatically detect the format standard in use or the user can manually select the standard. The Color level, Sharpness, Tint, Brightness and Contrast parameters of the input signal can be adjusted by the user.

1T-TBC is an ultra compact, high performance Multi-Standard Time Base Corrector designed to correct for time base errors in videotape playback or to correct for instability in most video signals. An integral Digital Processing Amplifier provides all the necessary adjustments to the video parameters. Black with color burst is sent to the output when the input video is not present. Composite and YC (S-Video) inputs and outputs are provided.

1T-TBC-GL provides all the features of the 1T-TBC and adds a Genlock feature that enables the incoming video signal to be synchronized to an external video source if desired.

Both models are 12VDC powered and the Power Adapters are included. Locking DC Connectors are provided for security. The Color level, Sharpness, Tint, Brightness and Contrast parameters of the input signal can be adjusted by the user.

Both Standards Conversion & Time Base Correction/Frame Synchronization are available as features on many of TV One's C2 products: C2-7000 Series, C2-5000 Series, C2-2355, C2-2350, C2-1350.

1T-PAL-NTSC/GL Specifications

Video Inputs/Outputs

Composite Video	1x via BNC Connector
YC (S-Video)	1x via 4-PIN Mini-DIN Connector
Genlock Input	via BNC (1T-PAL-NTSC-GL Only)
Genlock Loop-thru	with 75Ω Termination Switch

Video Specifications

Impedance	75Ω
Standards Supported	NTSC 3.58, NTSC 4.43, PAL-B, M, N, SECAM
System Memory	6Mb
Sampling Frequency	Y:13.50 Mhz, R-Y:6.75 Mhz, B-Y:6.75 Mhz
Signal Processing	8-bit
Line Conversion	525/625 lines (Either Direction)
Field Conversion	60/50 Fields (Either Direction)
Video Level Adjustment	Contrast, Brightness, Color, Hue (NTSC Only)
Frequency Response	400 TV Lines
S/N Ratio	50 db

Control Method

Display	Front Panel LEDs
Front Panel Buttons	Up, Down, Reset, Select

Warranty

Limited Warranty	2 Year parts and Labor

Mechanical

Size (H-W-D)	32x135x91.5mm(1.25x5.3x3.6")
Weight (Net)	330 g (0.73 lbs)

Environmental

Operating Temperature	0° to +50° C (+32° to +122° F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-10° to +60° C(+14° to +140° F)
Storage Humidity	10% to 90%, Non-condensing

Power Requirements

1x Power Adapter	12 VDC@1A

Regulatory Approvals

Standards Converter	FCC, CE, RoHS
Power Supply	UL, CUL, CE, PSE, GS, RoHS

Accessories Included

1 x Power Adapter	US, UK or Euro
Operations Manual	

Product Item Numbers

1T-PAL-NTSC	Standards Converter
1T-PAL-NTSC-GL	Standards Converter w/Genlock

1T-TBC, 1TBC-GL Specifications

Inputs/Outputs

Composite Video	1x via BNC Connector
YC (S-Video)	1x via 4-PIN Mini-DIN Connector
Genlock Input	via BNC (1T-TBC-GL Only)
Genlock Loop-thru	with 75Ω Termination Switch

Video Specifications

Impedance	75Ω
Television Standards	NTSC, PAL-B, G, N, M, SECAM
Signal Processing	8-bit
Frequency Response	Flat to more than 20MHz
Chroma to Luma Delay	<=5nS
Differential Gain	<=0.5 %
Differential Phase	<=0.5 °
Signal to Noise Ratio	Better than 60db
Video Level Adjustment	Luma,Chroma, Setup, Hue, Sharp
Filter Selection	Adaptive Comb, Low Pass

Control Method

Display	Front Panel LEDs
Front Panel Buttons	Up, Down, Reset, Select

Warranty

Limited Warranty	2 Years Parts and Labor

Mechanical

Size (H-W-D)	30x133x90mm (1.2"x5.25"x3.5")
Weight (Net)	310 g (0.69 lbs)

Environmental

Operating Temperature	0° to +50° C (+32° to +122° F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-10° to +60° C (+14° to +140° F)
Storage Humidity	10% to 90%, Non-condensing

Power Requirement

External Power Supply	12VDC@500mA - Locking DC

Regulatory Approvals

TBC Unit	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Accessories Included

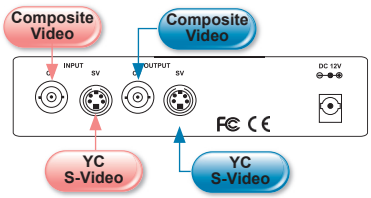
1x Power Adapter	US, UK or Euro
1x Operations Manual	

Product Item Numbers

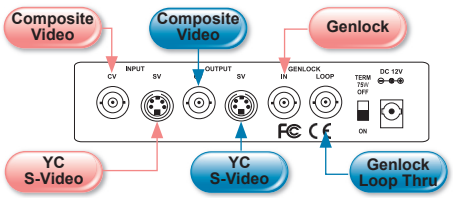
1T-TBC	Time Base Corrector
1T-TBC-GL	TBC with Genlock

Control Interface | Input | Output | Input/ Output

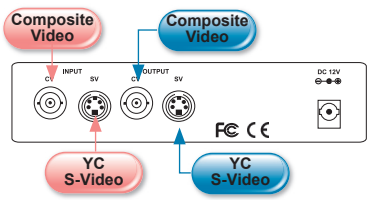
1T-PAL-NTSC



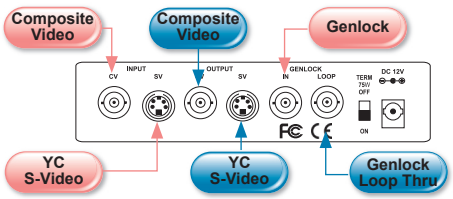
1T-PAL-NTSC-GL



1T-TBC



1T-TBC-GL



Routing Switchers

Routing Switchers allow multiple signal sources to be routed to destinations without moving input and output cables. Routing Switchers can be for a variety of different video and audio formats.

S2 Series Routing Switcher Comparison Chart

Model	S2-108HD	S2-105DVIA	S2-109PC	S2-105PC	S2-105PCA	S2-110CV	S2-105CV	S2-105CVA	S2-110YC	S2-105YC	S2-105YCA	S2-106AD	S2-101AA
VIDEO INPUTS													
SD/HD-SDI via BNC	8												
DVI-D via DVI-I		5											
RGB/YPbPr via HD15			9	5	5								
Composite Video via BNC						10	5	5					
YC (S-Video) via 4-Pin Din									10	5	5		
AUDIO INPUTS													
Analog Stereo (Balanced/Unbalanced)								5			5		1
Analog Stereo (Unbalanced only)		5			5							6	2
VIDEO OUTPUTS													
SD/HD-SDI via BNC	2												
DVI-D via DVI-I		1											
RGB/YPbPr via HD15			1	1	1								
Composite Video via BNC						2	2	2					
YC (S-Video) via 4-Pin Din									2	2	2		
AUDIO OUTPUTS													
Analog Stereo (Balanced/Unbalanced)								1			1	1	
Analog Stereo (Unbalanced only)		1			1							2	
Speaker Terminals (R/L)													1
FEATURES													
Looping Video Inputs				✓	✓		✓	✓		✓	✓		
RS-232 Control	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Infrared Control	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Interface to C2 Units	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rackmount Option	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Other Routing Switcher Comparison Chart

Model	1T-SX-632	1T-SC-634	1T-DVI-721	1T-SX-524	1T-MX-3344	1T-MX-2522	1T-MX-3141PCA	1T-MX-3141CSVA	1T-MX-3141HDA	1T-SW8x1CVB	1T-SW8x1CVR	1T-SW8x1SV	1T-SW4x1ARL
VIDEO INPUTS													
HDMI via HDMI Type A	2	4											
DVI-D via DVI-I			2	4									
RGB/YPbPr via HD15						2	4						
YPbPr via 3-RCA					4				4				
Composite Video via BNC										8			
Composite Video via RCA								4			8		
YC (S-Video) via 4-Pin Din								4				8	
AUDIO INPUTS													
Analog Stereo (Unbalanced only)					4		4	4	4				4
Embedded Audio	2	4											
Coaxial S/PDIF									4				
VIDEO OUTPUTS													
HDMI via HDMI Type A	1	1											
DVI-D via DVI-I			1	1									
RGB/YPbPr via HD15						2	1						
YPbPr via 3-RCA					4				1				
Composite Video via BNC										1			
Composite Video via RCA								1			1		
YC (S-Video) via 4-Pin Din								1				1	
AUDIO OUTPUTS													
Analog Stereo (Unbalanced only)					4		1	1	1				1
Embedded Audio	1	1											
Coaxial S/PDIF									1				
FEATURES													
RS-232 Control	✓	✓			✓		✓	✓	✓				
Infrared Control	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
Rackmount	Option	Option	Option	Option	✓		✓	✓	✓				

S2-106AD

Stereo Audio Switcher with Delay

Key Features S2-106AD

- Provides 6x Stereo Audio Inputs
- Variable Audio Delay & User Controlled Sampling
- Interface to Host via OPTION Connector
- Menu Driven Control via Joystick and LCD
- Controllable via RS-232, IR or Front Panel
- Multiple Input/Output Connector Choices
- Opt. Single/Dual Rackmount Kit Available

S2-106AD may function as a standalone routing switcher/audio processor or be connected to any of the C2-1000/2000 Series products to provide six additional differential audio inputs. The user controls audio sampling frequencies and up to 999ms of adjustable audio delay. The unit has numerous choices for Audio I/O connector types depending on user preference. The S2-106AD connects to the C2 unit via an OPTION interconnect cable and is fully integrated into the control system of the host C2 Scaler/Switcher.

Multiple S2 units of different formats may be interfaced to a single C2 product, however, only one of any given format may be connected. The Windows Control Panel recognizes the C2 unit and all the connected S2 units as a single Multi-format Seamless Switcher. This fully customizable approach allows the user to choose the appropriate C2-1000/2000 Switcher/Scaler and the S2 Switchers to achieve the desired number of inputs.

As well as the S2-106AD, S2 Switchers are available in a variety of other formats. The units are housed in desktop cases and optional Single/Dual Rackmount Kits are available. A single 5-Input S2 unit can be powered via the host C2 unit's OPTION Interconnect Cable, which also supplies control. External power adapters are provided for the additional S2 units connected to the C2.

S2-101AA

Stereo Audio Power Amplifier

Key Features S2-101AA

- Accepts Balanced or Unbalanced Inputs
- Three Different Input Connector Types
- Frequency Range of 20Hz to 24kHz
- 10 W RMS of Stereo Audio Output Power
- Very Low THD and Crosstalk
- Pop Suppression Upon Turn On
- Short Circuit and Over-Temp Protection
- Spring Loaded Speaker Terminals
- Robust +12VDC/4 Amp Power Supply
- Controllable via RS-232, IR or Front Panel
- Optional Single/Dual Rackmount Kit

The **S2-101AA Stereo Audio Power Amplifier** provides 10 Watts RMS per channel into a 4 Ohm load when signals from a pre-amplified source are provided as inputs. This professional series amplifier operates with very low Total Harmonic Distortion (THD+N) and very high Signal to Noise Ratio (S/N+N.) Plus Crosstalk is greatly minimized. Frequency Response is a very wide 20Hz to 24kHz and the inputs can be either balanced or unbalanced stereo audio.

To prevent speaker damage, the unit has Pop Suppression upon turn on. It also features short circuit and over temperature protection. The S2-101AA provides for a wide range of input connections including RCA connectors, Terminals and a 3.5mm Mini-Stereo jack to accommodate PC audio inputs. The output connectors utilize spring loaded terminals for connection to external speakers.

Mechanical construction uses the same form factor as the companion S2 Switcher products for ease of integration. An optional Single/Dual Rackmount Kit is available. The S2-101AA can be controlled from a host C2 unit or operate as a standalone amplifier.

S2-106AD Specifications

Stereo Audio Inputs/Outputs

Inputs – Balanced/Unbal	5x via Terminals (Note 1)
Inputs – Unbalanced	5x via 2x RCA (R&L) (Note 1)
PC Input – Unbalanced	1x via 3.5mm Mini-Stereo
Output - Balanced/Unbal	1x via Terminals
Output - Unbalanced	1x via 2x RCA (R&L)
HeadphoneOutput	1x via 3.5mm Mini-Stereo

Audio Characteristics

Frequency Response	100KHz +/- 3dB
Sampling Rates	32, 44.1, 48 & 96 kHz
Audio Delay (Channel 1)	Up to 999ms (Note 2)
Level and Balance	MUTE, -15dB to +15dB
Input/Output Type	Line Level – all I/O

Control

Standalone Operation	Push Button, IR, RS-232
From C2 Series Device	via D-15 OPTION Connector

Mechanical

Size (H-W-D)	41.5x218x150mm(1.63"x8.6"x5.9")
Weight (Net)	1.18kg (2.60 lbs)

Warranty

Limited Warranty	2 Years Parts and Labor

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

Power Requirement

All Models	12VDC@1A (Note 3)

Regulatory Approvals

Expansion Units	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Product Item Numbers

S2-106AD Switcher	6x1 Stereo Audio w/Delay

Accessories Included

1x Operations Manual	S2 Series
1x Power Adapter	US, UK or Euro
1x OPTION Interconnect	D-15M to D-15M & D-15F Cable

Optional Accessories

RM-220	Single/Dual Rackmount Kit
IRC-5	Infrared Remote Control

Notes

(1) Available differential audio inputs total a maximum of 5x when using the Terminals or RCA connectors plus one additional input via the 3.5mm Mini-Stereo jack.

(2) Audio delay amount available depends on the sampling frequency. (999ms @ 32kHz sampling)

(3) The C2-2000 series supplies enough power via the Options Connector for one 5-Input S2 unit. Additional S2 units may be powered with separate power adapters which are included.

S2-101AA Specifications

Stereo Audio Inputs Connectors

Unbalanced	1x via 2x RCA (R/L) Connectors
Differential (Bal./Unbal.)	1x via Terminals
PC Audio	1x via 3.5mm Mini-Stereo Jack

Input Characteristics

Nominal Input Level	353mVrms/Unbal,1.77Vrms/Bal
Input Sensitivity	848mVrms (-1.43dBV), Bal., 84mVrms (-19.4dBu), Unbal.
Input Impedance	27K Ω UnBal., 24K Ω Bal.

Output Connectors

Terminal (Speaker)	2x Pair, Spring Loaded

Output Characteristics

Maximum Power Output	10WRMS/4Ω load-Per Channel

Amplifier Characteristics

Operation Class	Optimized Class D
Freq Response	20Hz-24kHz (-3dB)
THD+N	0.07%@1kHz, 1W
S/N Ratio	>-71dB@1kHz, Unweighted
Crosstalk	>-63dB@1kHz to 20kHz

Mechanical

Size (H-W-D)	41.5x218x150mm(1.63"x8.6"x5.9")
Weight (Net)	1.10kg (2.42 lbs)

Warranty

Limited Warranty	2 Years, Parts and Labor

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

Power Requirements

Via Included AC Adaptor	+12VDC@4 Amps1

Regulatory Approvals

Amplifer	FCC, CE, RoHS
Power Supply	UL, CUL, CE, PSE, GS, RoHS

Product Item Number

S2-101AA	Audio Power Amplifier

Accessories Included

Operations Manual	S2 Series Product Operations
1x Power Adapter	US, UK or Euro

Optional Accessories

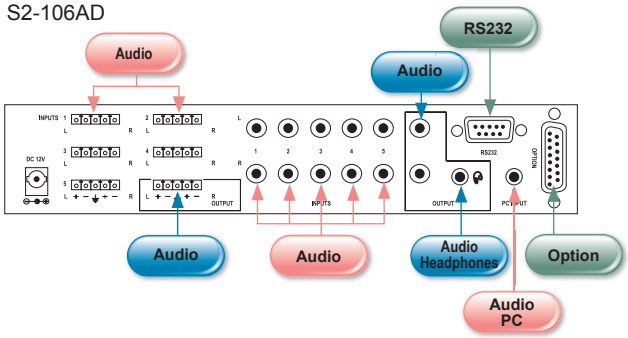
RM-220	Single/Dual Rack Mount Kit
IRC-5	Infrared Remote Control

Note

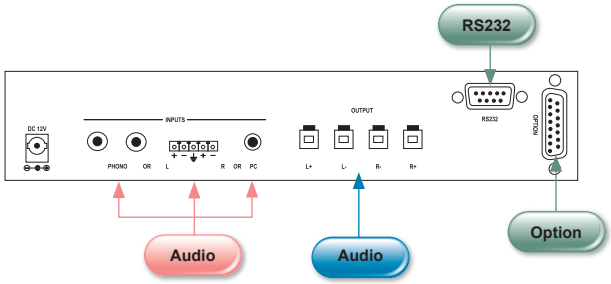
(1) The S2-101AA CANNOT be powered via the option cable from a C2 series product. The C2 product's Option connector cannot supply the required 4 Amps of power.

Control Interface | Input | Output | Input/ Output

S2-106AD



S2-101AA



S2-109PC
S2-105PC, S2-105PCA

RGB/YPbPr/Stereo Audio Switchers

Key Features

- S2-109PC has 9x RGB/YPbPr Inputs
- S2-105PC has 5x RGB/YPbPr Inputs
- S2-105PCA has 5x RGB/YPbPr Inputs and 5x Stereo Audio Inputs
- All units have 1x RGB/YPbPr Output
- Resolutions up to WUXGA and 1080p
- Interface to Host via OPTIONS Connector
- Controllable via RS-232, IR or Front Panel
- May be used as a standalone switchers
- Companion versions available for most formats
- Opt. Single/Dual Rackmount Kit available

S2-109PC, **S2-105PC** and **S2-105PCA** may function as standalone routing switchers or as input expansion modules for the C2-1000/2000 Scaler/Switchers to provide additional inputs to those devices. The S2 Switcher connects to the C2 unit via an OPTION interconnect cable & via an input, and is fully integrated into the control system of the host C2 Scaler/Switcher. When connected to a C2-1000/2000 Scaler/Switcher the S2-109PC adds 8 additional RGB/YPbPr inputs, the S2-105PC adds 4 additional RGB/YPbPr inputs and the S2-105PCA adds 5 additional RGB/YPbPr and 5x Stereo inputs to the C2 unit.

Multiple S2 units of different formats may be interfaced to a single C2 product, however, only one of any given format may be connected. The Windows Control Panel recognizes the C2 unit and all the connected S2 units as a single Multi-format Seamless Switcher. This fully customizable approach allows the user to choose the appropriate C2-1000/2000 Switcher/Scaler and the S2 Switchers to achieve the desired number of inputs.

S2 Switchers are available in a variety of video formats, with or without Stereo Audio. A Stereo only model is also available with variable delay. The units are housed in desktop cases and optional Single/Dual Rackmount Kits are available. A single 5-Input S2 unit can be powered via the host C2 unit's OPTION Interconnect Cable, which also supplies control. External power adapters are provided for the additional S2 units connected to the C2.

Standalone Operation - S2 Series Switchers can also operate as standalone Video and Audio Routing Switchers. Input selection is by front panel Push Buttons, IR Remote Control or via RS-232.

S2-109PC, S2-105PC/PCA Specifications

Video Inputs/Outputs

S2-105PC Inputs	5x via HD15 Connectors
S2-105PCA Inputs	5x via HD15 Connectors
S2-109PC Inputs	9x via HD15 Connectors
All Product Outputs	1x via HD15 Connector

Video Characteristics

Bandwidth	>450 MHz
Accommodated Formats	RGBHV, YPbPr
Resolution (60Hz)	Up to 1920x1200 and 1080p
EDID	Switches IDO0 to IDO3

Audio Inputs/Outputs (S2-105PCA Only)

Inputs	5x via 3.5mm Mini-Stereo Jacks
Output	1x via 3.5mm Mini-Stereo Jack

Audio Characteristics (S2-105PCA Only)

Analog	Unbalanced
Frequency Response	100KHz +/- 3dB

Control

Standalone Operation	Push Button, IR, RS-232
From C2 Series Device	via D-15 OPTION Connector

Mechanical

Size (H-W-D)	41.5x218x150mm(1.63"x8.6"x5.9")
S2-105PC Weight (Net)	1.10kg (2.42 lbs)
S2-105PCA Weight(Net)	1.12kg (2.46 lbs)
S2-109PC Weight (Net)	1.18kg (2.60 lbs)

Warranty

Limited Warranty	2 Years Parts and Labor

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

Power Requirement

All Models	12VDC@1A (Note 1)

Regulatory Approvals

Expansion Units	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Product Item Numbers

S2-105PC Switcher	5x1 RGBHV/YPbPr
S2-105PCA Switcher	5x1 RGBHV/YPbPr/Stereo Audio
S2-109PC Switcher	9x1 RGBHV/YPbPr

Accessories Included

1x Operations Manual	S2 Series
1x Power Adapter	US, UK or Euro
1x OPTION Interconnect	D-15M to D-15M & D-15F Cable

Optional Accessories

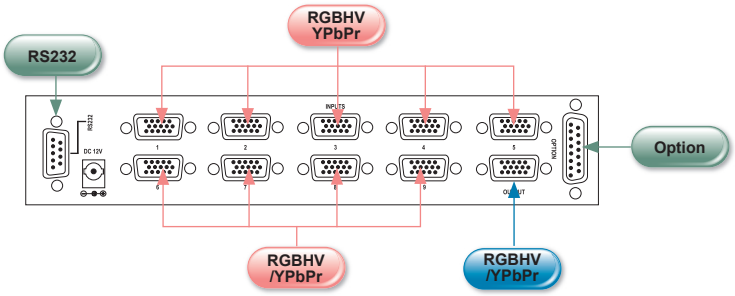
RM-220	Single/Dual Rackmount Kit
IRC-5	Infrared Remote Control

Note

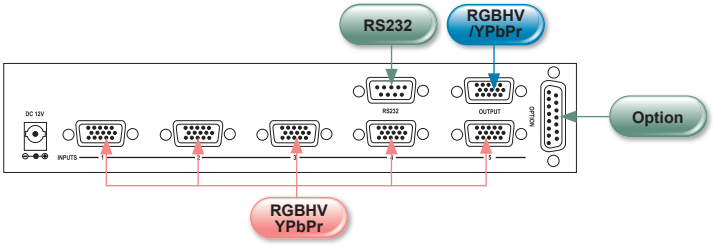
(1) The C2-1000/2000 series supplies enough power via the Options Connector for one 5-Input S2 unit. Additional S2 units may be powered with the separate power adapters that are included.

Control Interface | Input | Output | Input/ Output

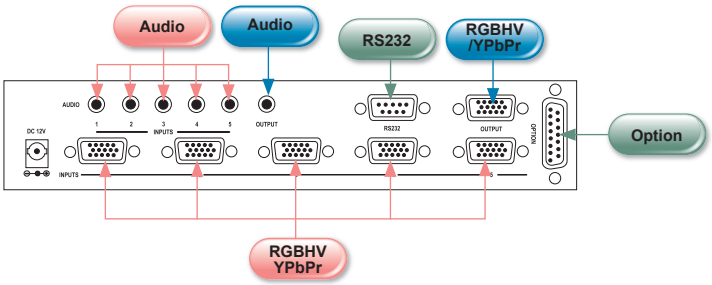
S2-109PC



S2-105PC



S2-105PCA



S2-110CV
S2-105CV, S2-105CVA

Composite Video/Stereo Audio Switchers

Key Features

- S2-110CV has 10x Composite Video Inputs
- S2-105CV has 5x CV Looping Inputs
- S2-105CVA has 5x CV Looping Inputs and 5x Stereo Audio Inputs
- All units have 2x Composite Video Outputs
- Interface to Host via OPTION Connector
- Controllable via RS-232, IR or Front Panel
- May be used as a standalone switchers
- Companion versions available for most formats
- Opt. Single/Dual Rackmount Kit available

S2-110CV, **S2-105CV** and **S2-105CVA** may function as standalone routing switchers or as input expansion modules for the C2-1000/2000 Scaler/Switchers to provide additional inputs to those devices. The S2 Switcher connects to the C2 unit via an OPTION interconnect cable & via an input, and is fully integrated into the control system of the host C2 Scaler/Switcher. When connected to a C2-1000/2000 Scaler/Switcher the S2-110CV adds 9 additional Composite inputs, the S2-105CV adds 4 additional Composite inputs and the S2-105CVA adds 4 additional Composite and 5x Stereo inputs to the C2 unit. All units provide two Composite Video outputs.

Multiple S2 units of different formats may be interfaced to a single C2 product, however, only one of any given format may be connected. The Windows Control Panel recognizes the C2 unit and all the connected S2 units as a single Multi-format Seamless Switcher. This fully customizable approach allows the user to choose the appropriate C2-1000/2000 Switcher/Scaler and the S2 Switchers to achieve the desired number of inputs.

S2 Switchers are available in a variety of video formats, with or without Stereo Audio. A Stereo only model is also available with variable delay. The units are housed in desktop cases and optional Single/Dual Rackmount Kits are available. A single 5-Input S2 unit can be powered via the host C2 unit's OPTION Interconnect Cable, which also supplies control. External power adapters are provided for the additional S2 units connected to the C2.

Standalone Operation - S2 Series Switchers can also operate as standalone Video and Audio Routing Switchers. Input selection is by front panel Push Buttons, IR Remote Control or via RS-232.

S2-110CV, S2-105CV/CVA Specifications

Video Inputs/Outputs

S2-105CV Inputs	5x via BNC w/Loop thru
S2-105CVA Inputs	5x via BNC w/Loop thru
S2-110CV inputs	10x via BNC
All Product Outputs	2x via BNC

Video Characteristics

Bandwidth	>80 MHz
Accommodated Formats	NTSC, PAL Composite Video

Audio Inputs/Outputs (S2-105CVA Only)

Inputs	5x via Terminal Connectors
Output	1x via Terminal Connectors

Audio Characteristics (S2-105CVA Only)

Analog	Balanced or Unbalanced
Frequency Response	100KHz +/- 3dB

Control

Standalone Operation	Push Button, IR, RS-232
From C2 Series Device	via D-15 OPTION Cable

Mechanical

Size (H-W-D)	41.5x218x150mm(1.63"x8.6"x5.9")
S2-105CV Weight (Net)	1.26kg (2.77 lbs)
S2-105CVA Weight(Net)	1.30kg (2.86 lbs)
S2-110CV Weight (Net)	1.26kg (2.77 lbs)

Warranty

Limited Warranty	2 Years Parts and Labor

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

Power Requirement

All Models	12VDC@1A (Note 1)

Regulatory Approvals

Expansion Units	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Product Item Numbers

S2-105CV Switcher	5x2 Composite Video
S2-105CVA Switcher	5x2 Composite Video w/Stereo
S2-110CV Switcher	10x2 Composite Video

Accessories Included

1x Operations Manual	S2 Series
1x Power Adapter	US, UK or Euro
1x OPTION Interconnect	D-15M to D-15M & D-15F Cable

Optional Accessories

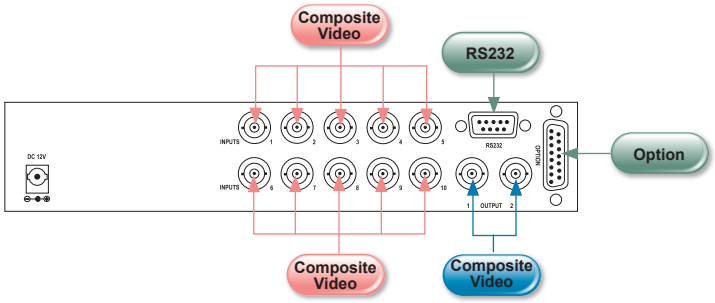
RM-220	Single/Dual Rackmount Kit
IRC-5	Infrared Remote Control

Note

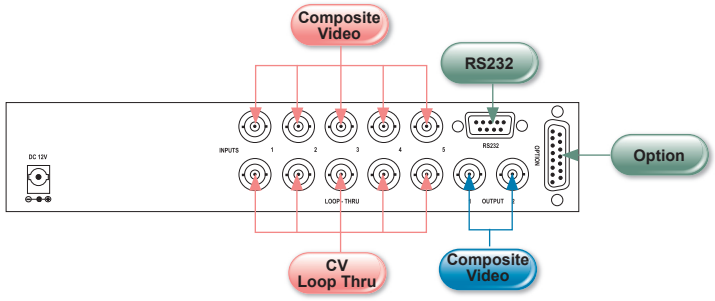
(1) The C2-1000 & C2-2000 series products supply enough power via the OPTION Connector for one 5-Input S2 unit. Additional S2 units may be powered with separate power adapters (included).

Control Interface | Input | Output | Input/ Output

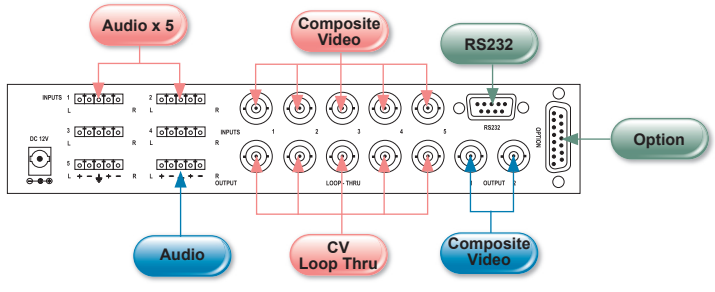
S2-110CV



S2-105CV



S2-105CVA



S2-110YC
S2-105YC, S2-105YCA

YC (S-Video)/Stereo Audio Switchers

Key Features

- S2-110YC has 10x YC (S-Video) Inputs
- S2-105YC has 5x YC Looping Inputs
- S2-105YCA has 5x YC Looping Inputs and 5x Stereo Audio Inputs
- All units have 2x YC Outputs
- Interface to Host via OPTION Connector
- Controllable via RS-232, IR or Front Panel
- May be used as a standalone switchers
- Companion versions available for most formats
- Opt. Single/Dual Rackmount Kit available

S2-110YC, **S2-105YC** and **S2-105YCA** may function as standalone routing switchers or as input expansion modules for the C2-1000/2000 Scaler/Switchers to provide additional inputs to those devices. The S2 Switcher connects to the C2 unit via an OPTION interconnect cable & via an input, and is fully integrated into the control system of the host C2 Scaler/Switcher. When connected to a C2-1000/2000 Scaler/Switcher the S2-110YC adds 9 additional YC (S-Video) inputs, the S2-105YC adds 4 additional YC inputs and the S2-105YCA adds 4 additional YC and 5x Stereo inputs to the C2 unit. All units provide two YC outputs.

Multiple S2 units of different formats may be interfaced to a single C2 product, however, only one of any given format may be connected. The Windows Control Panel recognizes the C2 unit and all the connected S2 units as a single Multi-format Seamless Switcher. This fully customizable approach allows the user to choose the appropriate C2-1000/2000 Switcher/Scaler and the S2 Switchers to achieve the desired number of inputs.

S2 Switchers are available in a variety of video formats, with or without Stereo Audio. A Stereo only model is also available with variable delay. The units are housed in desktop cases and optional Single/Dual Rackmount Kits are available. A single 5-Input S2 unit can be powered via the host C2 unit's OPTION Interconnect Cable, which also supplies control. External power adapters are provided for the additional S2 units connected to the C2.

Standalone Operation - S2 Series Switchers can also operate as standalone Video and Audio Routing Switchers. Input selection is by front panel Push Buttons, IR Remote Control or via RS-232.

S2-110YC, S2-105YC/YCA Specifications

Video Inputs/Outputs

S2-105YC Inputs	5x via 4-Pin Mini-DIN w/Loop thru
S2-105YCA Inputs	5x via 4-Pin Mini-DIN w/Loop thru
S2-110YC Inputs	10x via 4-Pin Mini-DIN
All Product Outputs	2x via 4-Pin Mini-DIN

Video Characteristics

Bandwidth	>80 MHz
Accommodated Formats	NTSC, PAL Composite Video

Audio Inputs/Outputs (S2-105YCA Only)

Inputs	5x via Terminal Connectors
Output	1x via Terminal Connectors

Audio Characteristics (S2-105YCA Only)

Analog	Balanced or Unbalanced
Frequency Response	100KHz +/- 3dB

Control

Standalone Operation	Push Button, IR, RS-232
From C2 Series Device	via D-15 OPTION Connector

Mechanical

Size (H-W-D)	41.5x218x150mm(1.63"x8.6"x5.9")
S2-105YC Weight (Net)	1.10kg (2.42 lbs)
S2-105YCA Weight (Net)	1.14kg (2.51 lbs)
S2-110YC Weight (Net)	1.10kg (2.42 lbs)

Warranty

Limited Warranty	2 Years Parts and Labor

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

Power Requirement

All Models	12VDC@1A (Note 1)

Regulatory Approvals

Expansion Units	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Product Item Numbers

S2-105YC Switcher	5x2 YC Video
S2-105YCA Switcher	5x2 YC Video w/Stereo Audio
S2-110YC Switcher	10x2 YC Video

Accessories Included

1x Operations Manual	S2 Series
1x Power Adapter	US, UK or Euro
1x OPTION Interconnect	D-15M to D-15M & D-15F Cable

Optional Accessories

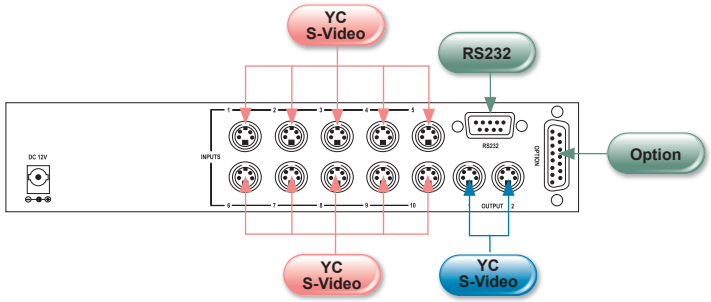
RM-220	Single/Dual Rackmount Kit
IRC-5	Infrared Remote Control

Note

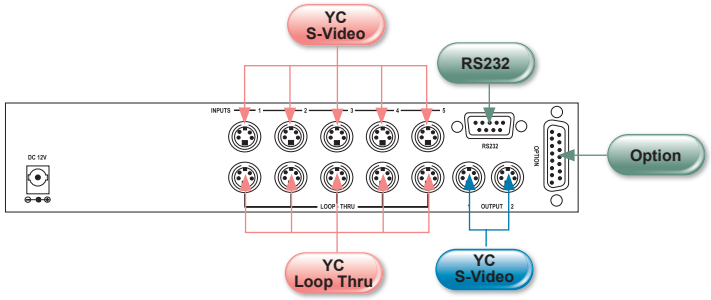
(1) The C2-1000 & C2-2000 series products supply enough power via the Options Connector for one 5-Input S2 unit. Additional S2 units may be powered with separate power adapters which are included.

Control Interface | Input | Output | Input/ Output

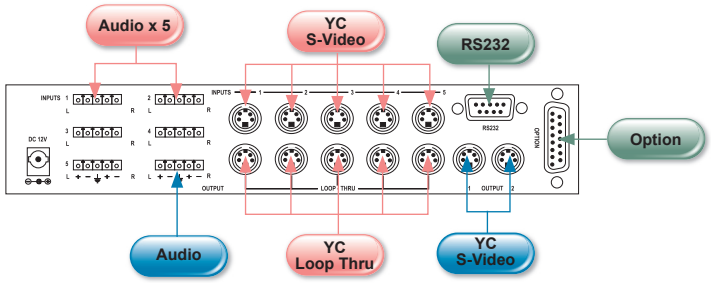
S2-110YC



S2-105YC



S2-105YCA



S2-105DVIA

DVI-D & Stereo Audio Switcher

Key Features S2-105DVIA

- 5x DVI-D and 5x Stereo Audio Inputs
- 1x DVI-D and 1x Stereo Audio Output
- HDCP Compliant and fully HDMI Compatible
- Interface to Host via OPTIONS Connector
- Controllable via RS-232, IR or Front Panel
- Unit may be used as a standalone switcher
- Additional versions available for most formats
- Optional Single/Dual Rackmount Kit available

S2-105DVIA may function as a standalone routing switcher or as input expansion module for the C2-1000/2000 Scaler/Switchers to provide additional inputs to those devices. The S2 Switcher connects to the C2 unit via an OPTION interconnect cable & via an input, and is fully integrated into the control system of the host C2 Scaler/Switcher. When connected to a C2-1000/2000 Scaler/Switcher the S2-105DVIA provides an additional 4 DVI-D inputs and 5x Stereo inputs. Since the unit is fully HDMI compatible and HDCP compliant, it can be used with both formats.

Multiple S2 units of different formats may be interfaced to a single C2 product, however, only one of any given format may be connected. The Windows Control Panel recognizes the C2 unit and all the connected S2 units as a single Multi-format Seamless Switcher. This fully customizable approach allows the user to choose the appropriate C2-1000/2000 unit and the S2 Switchers to achieve the desired number of inputs.

S2 Switchers are available in a variety of video formats, with or without Stereo Audio. A Stereo only model is also available with variable delay. The units are housed in desktop cases and optional Single/Dual Rackmount Kits are available. External power adapters are provided for the S2 units.

S2-108HD

SD/HD-SDI Switcher

Key Features S2-108HD

- 8x SDI (SD or HD-SDI) Inputs
- 2x SDI (SD or HD-SDI) Outputs
- Compliant to SMPTE 292M and 259M
- Automatic Reclocking and equalization
- Interface to Host via OPTIONS Connector
- Controllable via RS-232, IR or Front Panel
- Unit may be used as a standalone switcher
- Additional versions available for most formats
- Optional Single/Dual Rackmount Kit available

S2-108HD reclocking routing switcher may function as an eight way standalone routing switcher or as an input expansion module for any of the C2-2000 Scaler/Switchers or Down Converters with SDI (SD or HD-SDI) inputs to provide seven additional SD or HD-SDI inputs to those devices. Since the unit is fully compliant to SMPTE 292M and 259M, it can be used to switch SD-SDI and HD-SDI signals. The S2 Switcher connects to the C2 unit via an OPTION interconnect cable and is fully integrated into the control system of the host C2 unit.

Standalone Operation - S2 Series Switchers can also operate as standalone Video and Audio Routing Switchers. Input selection is by front panel Push Buttons, IR Remote Control or via RS-232.

S2-105DVIA Specifications

Video Inputs/Outputs

Inputs	5x DVI-D via DVI-I Connectors
Output	1x DVI-D via DVI-I Connector

Video Characteristics

Bandwidth	1.65GHz
Pixel Rate	165 MHz
Resolution (60Hz)	1920x1200 and 1080p

Audio Inputs/Outputs

Inputs	5x 3.via 5mm Mini-Stereo Jacks
Output	1x via 3.5mm Mini-Stereo Jack

Audio Characteristics

Analog	Unbalanced
Frequency Response	100KHz +/- 3dB

Industry Compliance

HDCP	Fully Compliant
EDID	Version 1.3 for Digital Formats
HDMI	Compatible w/DVI-HDMI Adapters

Control

Standalone Operation	Push Button, IR, RS-232
From C2 Series Device	via D-15 OPTION cable

Mechanical

Size (H-W-D)	41.5x218x150mm(1.63"x8.6"x5.9")
Weight (Net)	1.18kg (2.60 lbs)

Warranty

Limited Warranty	2 Years Parts and Labor

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

Power Requirement

S2-105DVIA	12VDC@1A (Note 1)

Regulatory Approvals

Expansion Units	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Product Item Numbers

S2-105DVIA Switcher	5x1 DVI-D & Stereo Audio

Accessories Included

1x Operations Manual	S2 Series
1x Power Adapter	US, UK or Euro
1x OPTION Interconnect	D-15M to D-15M & D-15F Cable

Optional Accessories

RM-220	Single/Dual Rackmount Kit
IRC-5	Infrared Remote Control

Note

(1) The S2-105DVIA can not be powered S2 via the OPTIONS Cable from the C2 unit and must be powered with the separate power adapter that is included.

S2-108HD Specifications

Video Inputs/Outputs

Inputs	8x SDI (SD or HD-SDI) via BNC Serial Video 75 ohms
Outputs	2x SDI (SD or HD-SDI) via BNC Serial Video 75 ohms

Video Specifications

Max Output Level	800 mVpp/75 Ohms
Jitter	0.2 UI (or better)
Data Rate	Up to 1.485 Gbps Automatically detected Output reclocked Non-compliant 259M and 292M Auto bypasses reclocker Loss of lock indication

Industry Compliance

SMPTE	259M and 292M

Control

Standalone Operation	Push Button, IR, RS-232
From C2 Series Device	via D-15 OPTION cable

Mechanical

Size (H-W-D)	41.5x218x150mm(1.63"x8.6"x5.9")
Weight (Net)	1.18kg (2.60 lbs)

Warranty

Limited Warranty	2 Years Parts and Labor

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

Power Requirement

S2-108HD	12VDC@ 300mA

Regulatory Approvals

Expansion Units	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Product Item Number

S2-108HD Switcher	8x2 HD-SDI

Accessories Included

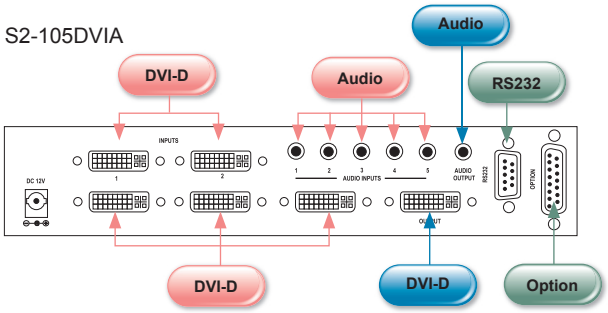
1x Operations Manual	S2 Series
1x Power Adapter	US, UK or Euro
1x OPTION Interconnect	D-15M to D-15M & D-15F Cable

Optional Accessories

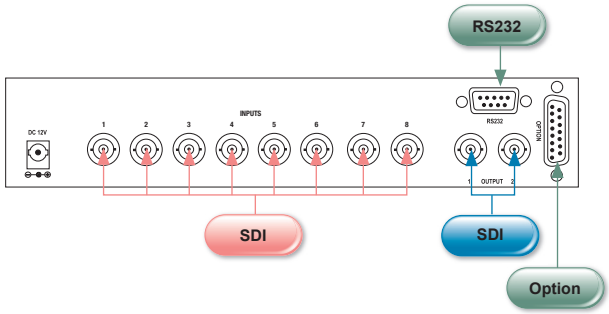
RM-220	Single/Dual Rackmount Kit
IRC-5	Infrared Remote Control

Control Interface | Input | Output | Input/ Output

S2-105DVIA



S2-108HD



1T-SX-632, 1T-SX-634

HDMI Routing Switchers

Key Features 1T-SX-632, 1T-SX-634

- Switches two or four HDMI Sources
- Supports HDTV resolutions up to 1080p
- Supports SDTV 480i, 576i resolutions
- Supports PC resolutions up to 1920x1200
- HDMI v1.3, HDCP v1.1, DVI v1.0 Compliant
- Built in Enhancer for long cable runs
- Supports 10/12 bit Color Depth Displays
- Supports DDWG Standard for HDMI Monitors
- Supports embedded audio, including Dolby® Digital TrueHD and DTS-HD
- Controllable via Front Panel or IR Remote
- RS-232 Control Port Provided
- Single/Dual Rackmount Kit optional
- Locking DC Power Connector for Security

1T-SX-632 and **1T-SX-634 HDMI Routing Switchers** are Version 1.3 compliant. The 1T-SX-632 switches between two inputs, the 1T-SX-634 switches up to four inputs. Both units maintain the signal components present within the encoded signal and allow the user to easily select program material without plugging and unplugging cables. Embedded audio, including Dolby® Digital TrueHD and DTS-HD is supported.

HDTV resolutions of 480p, 576p, 720p, 1080i and 1080p are supported, plus SDTV resolutions of 480i and 576i and PC resolutions up to 1920x1200. The units are fully DVI compatible. The switchers can be controlled via the front panel or with the included Infrared Remote Control. RS-232 control is provided as a standard feature.

Provisions are made for securing locking type HDMI cables. The units are housed in rugged metal cases and optional Single/Dual Rackmount Kits are available. They are 5VDC powered and a Power Adapter is included. The DC power connector is a locking type for security. For best performance at long distances, premium grade cables are recommended.

1T-DVI-721, 1T-SX-524

DVI Routing Switchers with HDCP

Key Features 1T-DVI-721, 1T-SX-524

- Fully HDCP Compliant
- 165 MHz Maximum Pixel Rate
- Maximum Resolution of 1920x1200@60Hz
- Two or Four Input Versions
- Front Panel and IR Remote Control
- Programmable IR Remote Controller

1T-DVI-721 and **1T-SX-524 DVI Routing Switchers** are compact, high performance products designed to meet the most demanding requirements for the switching of DVI signals with HDCP copy protection. A maximum pixel rate of 165 MHz provides resolution capabilities up to 1920x1200 and 1080p. The 1T-DVI-721 accommodates two inputs and the 1T-SX-524 four inputs. Both units can be controlled by the front panel input selection button or an infrared remote control. Should a conflict exist with other IR remote controls in the operational environment, the included IR remote controller can be easily reprogrammed to avoid the problem.

The units have DVI-I connectors for the input and outputs and are powered via an included AC power adapter that provides 9 VDC for operation. LED displays indicate the current input selection and the presence of DC Power. An IR Remote Receiver Option is available for applications requiring the unit to be hidden from view.

1T-SX-632, 1T-SX-634 Specifications

Video Inputs

1T-SX-632	2x HDMI via Type A Connectors
1T-SX-634	4x HDMI via Type A Connectors

Video Output

Both Models	1x HDMI via Type A Connector

Video Specifications

SDTV Resolutions	480i, 576i
HDTV Resolutions	480p, 576p, 720p, 1080i, 1080p
Bandwidth	2.25GHz
Color Depth	30/36 bit
Compliance	HDMI V1.3, HDCP V1.1, DVI V1.0
Signal Enhancement	Switchable On/Off

Audio Specifications

Embedded	per HDMI v1.3 standard
HD-Audio	including Dolby® TrueHD,DTS-HD

Maximum Cable Lengths

Source to DA Input	Up to 15m (45') (Note 1)
DA Output to Display	Up to 15m (45') (Note 1)

Mechanical

Size (H-W-D)	1.2"x7.9x3.5" (30x200x89mm)
Weight (Net)	0.85 kg (1.9 lbs)

Environmental

Operating Temperature	0° to +50°C (+32° to 122° C)
Operating Humidity	10% to 90%, Non-Condensing
Storage Temperature	0° to +70°C (+32° to 158° C)
Storage Humidity	10% to 90%, Non-Condensing

Remote Control

Serial Interface	RS-232 via DB-9
Infrared	IR Remote Included

Warranty

Limited Warranty	2 Years Parts and Labor

Power Requirement

External Power Supply	5VDC@2A – Locking DC

Regulatory Approvals

Converter Unit	FCC, CE, RoHS, HDMI ATC
Power Supply	UL, CUL, CE, PSE, GS, RoHS

Accessories Included

1x Power Adapter	US, UK or Euro
Operations Manual	
IR Remote Control Unit	
Locking Cable Kit	Hex adapters to accommodate locking HDMI connectors

Product Item Number

1T-SX-632	2x1 HDMI Routing Switcher
1T-SX-634	4x1 HDMI Routing Switcher

Optional Accessory

Rackmount Kit	RM-230 Single/Dual

Notes

(1) To achieve the max rated distance, use premium cables.

1T-DVI-721, 1T-SX-524 Specifications

Inputs

1T-DVI-721	2x DVI-D via DVI-I Connectors
1T-SX-524	4x DVI-D via DVI-I Connectors

Outputs

Both Models	1x DVI-D via DVI-I Connectors

Performance

Maximum Pixel Rate	165MHz
Maximum Resolution	1920 X 1200@60Hz, 1080p

Remote Control

IR (included)	Optional IR Extender available

Mechanical

Size (H-W-D)	44x160x70mm (1.7"x6.3"x2.8")
Weight (Net)	400 g (0.86 lbs)

Environmental

Operating Temperature	0° to +50° C (+32° to +122° F)
Operating Humidity	10% to 85% Non-condensing
Storage Temperature	-20° to +60° C (-4° to +140° F)
Storage Humidity	10% to 85% Non-condensing

Warranty

Limited Warranty	2 Years Parts and Labor

Power Requirements

External Power Supply	(1T-DVI-721) 9VDC@1.3A (1T-SX-524) 5VDC@2A

Regulatory Approvals

Switcher Unit	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Accessories Included

1x Power Adapter	US, UK or Euro
1x Operations Manual	
1x IR Remote Control	

Product Item Number

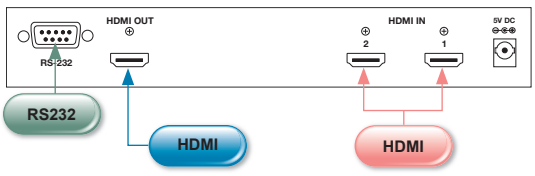
1T-DVI-721	2 In x 1 Out
1T-SX-524	4 In x 1 Out

Optional Accessories

1T-IRR-100	Remote IR Sensor Module
RM-320S	Rackmount kit for one unit
RM-320D	Rackmount kit for two units

Control Interface | Input | Output | Input/ Output

1T-SX-632



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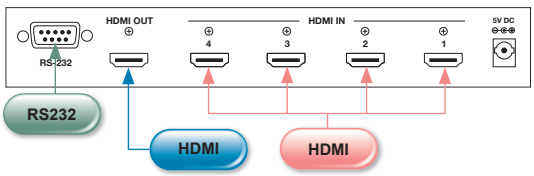
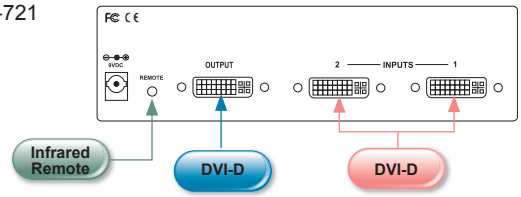
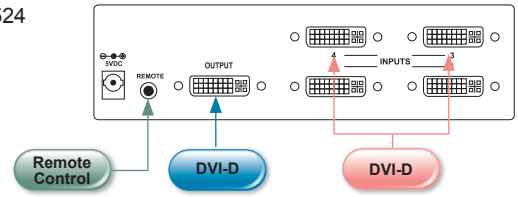


1T-DVI-721



1T-SX-524



1T-MX-3344

YPbPr/YUV/Stereo Matrix Routing Switcher

Key Features 1T-MX-3344

- 4x YPbPr or YUV Video In & 4x Out
- 4x Stereo Audio In & 4x Out
- Buffered Video and Audio Signal Handling
- Support resolutions up to 1080p
- IR Remote Control
- RS-232 Interface
- Rack Mount Kit included

1T-MX-3344 Matrix Routing Switcher is an extremely wide bandwidth, high performance unit providing four inputs and four outputs of Component Video and Stereo Audio. Any of the four inputs can be routed to a single output, multiple outputs or all outputs a capability unique to Matrix Routing Switchers. The unit accommodates YPbPr HD Video or YUV (Y,R-Y,B-Y) SD Video signals, plus Analog Stereo Audio. The video bandwidth in excess of 300MHz insures this switcher will provide an output identical to the source signals. Resolutions from 480i through 1080p are supported.

The 1T-MX3344 may be operated by front panel buttons, IR Remote Control or via the RS-232 interface. Ears for rackmounting are included. The unit requires external 12VDC and an AC Adapter is provided. It has a locking DC connector for added security.

1T-MX-2522

RGBHV Matrix Routing Switcher

Key Features 1T-MX-2522

- Drives Monitors up to 50 meters away
- 300MHz Signal Bandwidth - any PC Signal
- Max Resolution 1920x1440
- Locking Power Connector for Security

1T-MX-2522 is a 2x2 Matrix Routing Switcher. Its 300MHz bandwidth handles computer resolutions up to 1920x1440 and delivers signals up to 50 meters away without any signal deterioration. Since it is a Matrix Router, either input can be sent to either or both of the outputs. The unit provides VESA industry standard DDC (Data Display Channel) bi-directional communications between the outputs and the host PC for Plug and Play compatibility and host control of the downstream monitors. Input and Output connectors are HD-15 type.

The unit is housed in a small rugged metal case. It is 7.5VAC powered and a Power Adapter is included. For best performance, use high-grade output cables.

1T-MX-3344 Specifications

Video Inputs

YPbPr or YUV Component	4x via 3x RCA Connectors

Video Outputs

YPbPr or YUV Component	4x via 3x RCA Connectors

Video Performance

Television Standards	NTSC, PAL
Output Level	Y=1V p-p, Pb/Pr=0.7Vp-p
Bandwidth	300MHz +
Impedance	75Ω
Differential Gain	0.05%
Differential Phase	0.05 degrees

Audio Inputs

Analog Stereo (R/L)	4x via 2x RCA Connectors

Audio Outputs

Analog Stereo (R/L)	4x via 2x RCA Connectors

Audio Performance

Output Level	(L/R) 2Vrms max @ 47KΩ
Bandwidth	20Hz to 20 KHz
Impedance	47KΩ

Mechanical

Size (H-W-D)	44x436120mm(1.75"x17"x6.3")
Weight (Net)	1.6 kg (3.5 lbs)

Warranty

Limited Warranty	2 Years Parts and Labor

Environmental

Operating Temperature	0° to +50°C (+32° to +122°F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	10° to +60°C (+14° to +140° F)
Storage Humidity	10% to 90%, Non-condensing

Power Requirement

External Power Supply	12VDC@1A - Locking DC

Regulatory Approvals

Switcher Units	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Accessories Included

1x AC Power Adapter	US, UK or Euro
1x IR Remote Control	RC-44
1x Rack Mount Kit	
1x Operations Manual	

Product Item Number

1T-MX-3344	4x4 Matrix Routing Switcher

1T-MX-2522 Specifications

Video Inputs

RGBHV, RGBS, RGsB	2x via HD-15 Female Connectors

Video Outputs

RGBHV, RGBS, RGsB	2x via HD-15 Female Connectors

Performance

R-G-B Bandwidth	>300MHz
Maximum Resolution	1920x1440
R-G-B Level Range	0.5-2.0 Vp-p
Maximum Distance	50 Meters (150') from Switcher
Monitor Support	DDC1, 2, DDC2B, 2B+, 2AB

Mechanical

Size (H-W-D)	44x130x74mm (1.75"x5.1"x2.9")
Weight (Net)	450 g (1 lb)

Warranty

Limited Warranty	2 Years Parts and Labor

Environmental

Operating Temperature	0° to +50° C (+32° to +122° F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-20° to +70° C (-4° to +158° F)
Storage Humidity	10% to 90%, Non-condensing

Power Requirement

MX-2522	7.5VAC@800mA

Regulatory Approvals

Amplifier Units	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Accessories Included

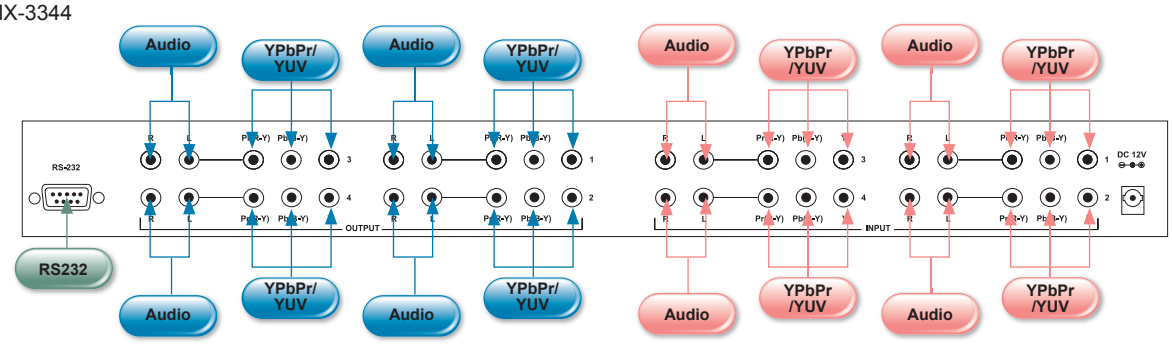
1x Operations Manual	
1x Power Adapter	US, UK or Euro

Product Item Numbers

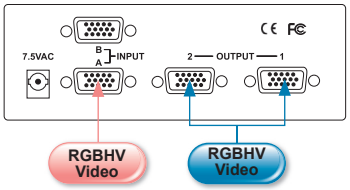
1T-MX-2522	2x2 Matrix Routing Switcher

Control Interface | Input | Output | Input/ Output

1T-MX-3344



1T-MX-2522



1T-MX-3141 Series

RGBHV/YPbPr/CV/YC/Stereo Routing Switchers

Key Features 1T-MX-3141 Series

- High Performance Professional Switchers
- Video Bandwidth: Greater than 300MHz
- 1T-MX-3141PCA: PC and HDTV + Stereo
- 1T-MX-3141CVSA: CV & S-Video + Stereo
- 1T-MX-3141HDA: HDTV + Analog & S/PDIF Stereo
- NTSC and PAL Television Standards
- Inputs: Four Video and Four Stereo Audio
- Push Button and IR Inputs Selection
- RS-232 Interface
- Rugged Metal Case
- Rackmount Ears Included
- Locking DC Power Connector for Security

1T-MX-3141PCA, **1T-MX-3141CSVA** and **1T-MX-3141HDA** are 4x1 Video and Audio Routing Switchers featuring extremely wide bandwidth and high performance to meet the most demanding requirements for signal routing. Video Bandwidth is flat +/- 3db to beyond 300MHz insuring these switchers will provide an output identical to the source signals. All units feature RS-232 and IR remote control. An AC Adapter with a locking DC connector is included, as well as rackmount ears.

The 1T-MX-3141PCA accommodates both RGB and YPbPr Component Video formats, plus Analog Stereo Audio. The 1T-MX-3141CSVA switches Composite or S-Video in either NTSC or PAL standard, plus Analog Stereo Audio. The 1T-MX-3141HDA switches YPbPr Component Video and Analog Stereo or S/PDIF Coaxial Digital Audio.

1T-MX-3141 Series Specifications

Video Inputs

1T-MX-3141PCA	4x RGB/YPbPr via HD-15
1T-MX-3141CSVA	4x CV via RCA + 4x S-Video
1T-MX-3141HDA	4x YPbPr via RCA

Stereo Audio Inputs

1T-MX-3141PCA	4x via 3.5mm Mini -Stereo
1T-MX-3141CSVA	4x via RCA (R/L)
1T-MX-3141HDA	4x via RCA + 4x Coaxial via RCA

Video Outputs

1T-MX-3141PCA	1x RGB/YPbPr via HD-15
1T-MX-3141CSVA	1x CV via RCA + 1x S-Video
1T-MX-3141HDA	1x YPbPr via RCA

Stereo Audio Outputs

1T-MX-3141PCA	1x via 3.5mm Mini -Stereo
1T-MX-3141CSVA	1x via RCA (R/L)
1T-MX-3141HDA	1x via RCA + 1x Coaxial via RCA

Performance

Video Bandwidth	300MHz +
Video Impedance	75Ω
Video Level	Unity, Nominal 1V p-p
Audio Bandwidth	20Hz to 20 KHz
Audio Impedance	20KΩ Analog, 75Ω Coaxial
Audio Level	Unity, Nominal (S/PDIF .5-1Vp-p)
Television Standards	NTSC, PAL, HDTV

Supported Signals

1T-MX-3141PCA	PC: VGA, SVGA, XGA, SXGA UXGA (1600x1200), WUXGA (1920x1200) HDTV: 480i, 576i, 480p, 576p, 720p, 1080i, 1080p
1T-MX-3141CSVA	Composite, S-Video: NTSC&PAL
1T-MX-3141HDA	HDTV: 480i, 576i, 480p, 576p, 720p, 1080i, 1080p

Mechanical

Size (H-W-D)	48x292x176mm (1.87"x11.5"x7")
Weight (Net)	1.47 kg (3.25 lbs)

Warranty

Limited Warranty	2 Years Parts and Labor

Environmental

Operating Temperature	0° to +50° C (+32° to +122° F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-10° to +60° C (+14° to +140° F)
Storage Humidity	10% to 90%, Non-condensing

Power Requirement

External Power Supply	5VDC@2A - Locking DC

Regulatory Approvals

Switcher Units	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Accessories Included

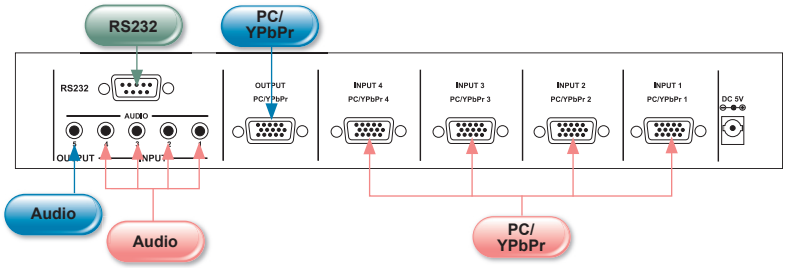
1x Power Adapter	US, UK or Euro
1x IR Remote Control	
1x Rackmount Kit	
1x Operations Manual	

Product Item Numbers

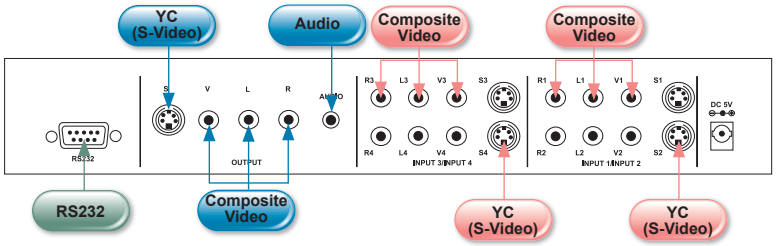
1T-MX-3141PCA	4x1 PC/HD with Stereo
1T-MX-3141CSVA	4x1 CV or S-Video with Stereo
1T-MX-3141HDA	4x1 HDTV with Stereo

Control Interface | Input | Output | Input/ Output

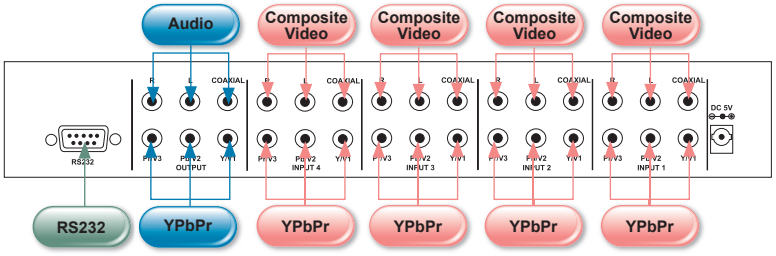
1T-MX-3141PCA



1T-MX-3141CSVA



1T-MX-3141HDA



1T-SW8 Series
1T-SW4x1ARL

CV/YC/Stereo Routing Switchers

Key Features 1T-SW8 & 1T-SW4

- Ultra Compact, High Performance Units
- PAL and NTSC Television Standards
- Bandwidth: Video 25MHz, Audio 20Hz to 20KHz
- Video Inputs: 8x CV, 8x YC or 4x Stereo Audio
- Push Button and IR Input Selection
- Locking DC Power Connector for Security

1T-SW8 and **1T-SW4 Routing Switchers** are ultra compact, high performance products designed to meet the most demanding requirements for signal routing. Video Bandwidth of 25MHz insures these products will provide a video output that is identical to the source signals. The 1T-SW8-x1CVB is an 8x1 Composite Video switcher with BNC Connectors, the 1T-SW8x1CVR is an 8x1 Composite Video switcher using RCA Connectors and the 1T-SW8x1SV is an 8x1YC video switcher. The Stereo Audio Switcher is a 4x1 with a bandwidth of 20Hz to 60KHz. Input selection is via front panel Push Buttons or by IR Remote Control.

All models are 12VDC powered and a Power Adapter is included. A locking DC connector is provided for security. For best performance, use high quality cables.

1T-SW8 Series, 1T-SW4 Specifications

Inputs

1T-SW8x1CVB	8x Composite Video via BNC
1T-SW8x1CVR	8x Composite Video via RCA
1T-SW8x1SV	8x YC (S-Video) via 4-Pin Mini-DIN
1T-SW4x1ARL	4x Stereo Audio (R/L) via 2x RCA

Outputs

1T-SW8x1CVB	1x Composite Video via BNC
1T-SW8x1CVR	1x Composite Video via RCA
1T-SW8x1SV	1x YC (S-Video) via 4-Pin Mini-DIN
1T-SW4x1ARL	1x Stereo Audio (R/L) via 2x RCA

Performance

	Video	Audio
Bandwidth	25MHx,+/-3db	20Hz-20KHz+/0.1db
Impedance	75Ω	20KΩ
Distortion	<0.5db	<0.5db
Isolation	>60db	>70db
Signal to Noise Ratio	>60db	>70db
THD	N/A	<0.3% (2nd Harmonic)
Signal Gain	Unity	Unity
Television Standard	PAL-NTSC	N/A

Mechanical

Size (H-W-D)	25x175x100mm (1"x7"x4")
1T-SW8x1CVB Weight (Net)	540 g (1.19 lb)
1T-SW8x1CVR Weight (Net)	450 g (1 lb)
1T-SW8x1SV Weight (Net)	450 g (1 lb)
1T-SW4x1ARL Weight (Net)	450 g (1 lb)

Warranty

Limited Warranty	2 Years Parts and Labor

Environmental

Operating Temperature	0° to +70°C (+32° to 158° C)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-25° C to +95 ° C(-13° to +203° F)
Storage Humidity	10% to 90%, Non-condensing

Power Requirement

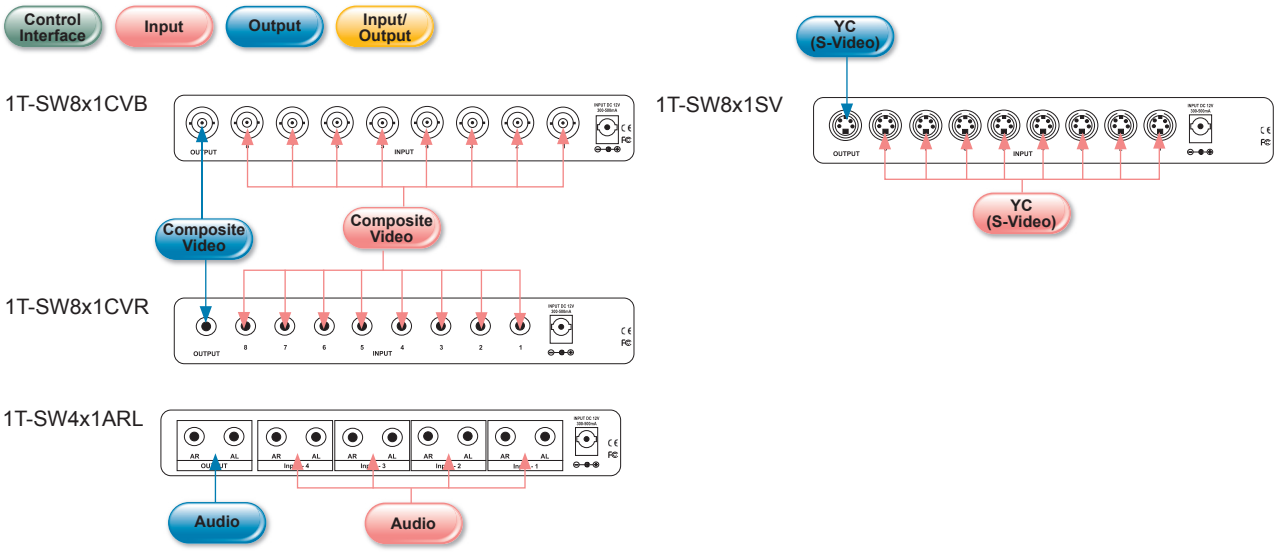
External Power Supply	12VDC@500mA - Locking DC

Regulatory Approvals

Amplifier Units	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Accessories Included

1x Power Adapter	US, UK or Euro
1x IR Remote Control	
1x Operations Manual	



P2-105

Multi Power Supply

Key Features P2-105

- 5x 12V 1A power outlets for unique locking power cable
- 5x Self resetting fuses
- Optional Single/Dual Rackmount Kit

P2-105 Power supply is a power distribution unit designed to replace up to 5 of the 12VDC adapters for use with the C2-1000, C2-2000 or S2 series units.

Each of the 5 outputs is protected with a self resetting fuse that will recover once a fault has been removed. To offer further protection the unit also provides over current and short circuit protection.

Mechanical construction uses the same form factor as the companion S2 switcher products and the P2-105 can be rack mounted using the optional RM-220 single/dual rack mount kit

External Power Supplies

P2-105 Specifications

Input Connector

IEC	Switched, with 3A replaceable fuse

Output Characteristics

12VDC @ 1A	5x, Center positive
Over current protection	1A per output 5A from internal PSU
Short Circuit protection	Auto recovery on fault removal

Mechanical

Size (H-W-D)	41.5x218x150mm(1.63"x8.6"x5.9")
Weight (Net)	1.1kg (2.43 lb)

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

Warranty

Limited Warranty	2 Years, Parts and Labor

Power Requirements

AC Input	100-240V AC (47-63 Hz), 1.6A Maximum, Via IEC Socket

Regulatory Approvals

UL, CUL, CE, PSE, GS, RoHS

Product Item Number

P2-105	Power Supply

Accessories Included

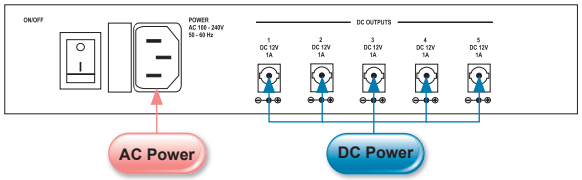
Operations Manual	P2 Series Product Operations
1x AC Power Cord	US, UK or Euro IEC

Optional Accessories

RM-220	Single/Dual Rack Mount Kit

Control Interface | Input | Output | Input/ Output

P2-105



Unique Locking Power Supply On All Externally Powered TV One Models

Small Features Can Make a Big Difference

All TV One and TV One-task products requiring external DC power are fitted with a unique locking AC to DC Adapter. This keeps the power connector firmly attached to the unit, providing assurance that power will not be inadvertently removed during use. The unobtrusive locking collar, external to the plug barrel, and its matching jack appear as a normal 2.35mm system. This allows readily available power adapters to be used in case of emergency, such as loss of the original adapter. A simple push and twist secures the plug to the jack.

This universal power supply has an input voltage range of 100-240VAC, 50-60 Hz, and is contained within the AC plug itself. The compact, inline design means that it occupies or more space than a standard AC plug, so all available outlets on standard AC strips can be used.

TV One Standard External Locking AC-DC Power Adapter

DC Plug with unique Locking Collar

Distribution Amplifiers

Distribution Amplifiers provide multiple outputs of the input signal, without loss of quality or signal level. Several monitors or other destination devices can display the same image at great distances from the source. Distribution Amplifiers are available for a variety of Video and Audio formats for Digital or Analog signals.

Distribution Amplifier Comparison Chart

Model	1T-DA-552	1T-DA-554	1T-DA-564	1T-DA-652	1T-DA-654	1T-DA-664	1T-DA-658	1T-DA-472	1T-DA-474	1T-DA-462	1T-VGA-412	1T-VGA-414	1T-DA8CVB	1T-DA8CVR	1T-DA8SV
VIDEO INPUTS															
HDMI via HDMI Type A				1	1	1	1								
DVI-D via DVI-I	1	1	1												
RGB/YPbPr via HD15								1	1	1	1	1			
Composite Video via BNC													1		
Composite Video via RCA														1	
YC (S-Video) via 4-Pin Din															1
AUDIO INPUTS															
Analog Stereo			1			1		1	1	1					
Embedded Audio				1	1	1	1								
Coaxial S/PDIF			1			1									
VIDEO OUTPUTS															
HDMI via HDMI Type A				2	4	4	8								
DVI-D via DVI-I	2	4	4												
RGB/YPbPr via HD15								2	4	2	2	4			
Composite Video via BNC													8		
Composite Video via RCA														8	
YC (S-Video) via 4-Pin Din															8
AUDIO OUTPUTS															
Analog Stereo			4			4		2	4	2					
Embedded Audio				2	4	4	8								
Coaxial S/PDIF			4			4									
FEATURES															
Standard	DVI 1.0	DVI 1.0	DVI 1.0	HDMI v1.3	HDMI v1.3	HDMI v1.3	HDMI v1.3								
HDCP Compliant	✓	✓	✓	✓	✓	✓	✓								
Bandwidth	2.25 GHz	2.25 GHz	2.25 GHz	2.25 GHz	2.25 GHz	2.25 GHz	2.25 GHz	500 MHz	500 MHz	500 MHz	500 MHz	500 MHz	100 MHz	100 MHz	100 MHz
Rackmount Option	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓			

1T-DA-500 Series

DVI-D Distribution Amplifiers (HDMI Compatible)

Key Features 1T-DA-500 Series

- Multiple DVI Outputs from a single source
- DVI-D 1.0, HDMI 1.3 & HDCP 1.1 Compliant
- Distribution of 2 or 4 Outputs. (1T-DA-552/554)
- 1x4 Stereo & 1x4 S/PDIF Audio (1T-DA-564)
- Dolby Digital+, Dolby® Digital TrueHD & DTS-HD
- 10/12 bit Color Depth Display
- PC & HDTV resolutions up to 1920x1200, 1080p
- Supports HDMI - Opt DVI to HDMI Adaptors
- Signal Equalization for longer cable runs
- Supports Automatic Discovery of Monitor EDID
- Locking DC Connectors for security
- Optional Rackmount Kits

1T-DA-552, **1T-DA-554**, **1T-DA-564 DVI-D Distribution Amplifiers** provide multiple outputs from a single DVI input for distribution to devices capable of receiving and/or displaying such signals. The 1T-DA-552 provides 2x DVI outputs and the 1T-DA-564 provides 4x DVI outputs. The 1T-DA-564 provides 4x DVI outputs plus 4x Analog Stereo and 4x S/PDIF Coaxial Audio outputs. Each product in this series is compliant with HDMI v1.3 specifications and provides a cutting-age technology that supports Deep Color (10-bit and12-bit) video plus new, lossless Dolby TrueHD, Dolby Digital + and DTS-HD Master Audio digital audio. In addition, all devices exhibit high bandwidth (up to 225MHz - 2.25Gbps) and provide signal amplification and equalization for high performance processing of audio and video allowing the signals to travel great distances without quality loss.

A front panel switch allows the EDID reference to be selected from either a connected display on a priority basis or from an internal resolution look-up table. All DAs can also be cascaded for expanded functionality and all DVI Distribution Amplifiers can function as HDMI Distribution Amplifiers using cable adapters. An optional Rack Mounting kit is available for mounting either one or two DVI DAs in a 19" Rack.

1T-DA-500 Series Specifications

Video Inputs

(All Models)	1x DVI-D via DVI-I Connector

Video Output

1T-DA-552	2x DVI-D via DVI-I Connectors
1T-DA-554 & 564	4x DVI-D via DVI-I Connectors

Audio Input/Outputs (1T-DA-564 Only)

Format	Analog Stereo and S/PDIF
Analog Stereo In	1x via Stereo 3.5mm Mini Stereo
Analog Stereo Out	4x via Stereo 3.5mm Mini Stereo
S/PDIF In	1x Via RCA Coaxial
S/PDIF Out	4x Via RCA Coaxial
Audio Bandwidth	20Hz to 20 KHz
Audio Impedance	20KΩ Stereo, 75Ω S/PDIF
Audio Levels	Unity, Nominal, S/PDIF .5-1V p-p

General

Freq. Bandwidth	2.25Gbps (HDMI Single Link)
Color Depth	10/12 bit Color Depth Display
PC/DVI resolutions	Up to 1920x1200
HDTV Formats	480p, 576p, 720p, 1080i, 1080p
SDTV Formats	480i, 576i
Compliance	DVI 1.0, HDMI V1.3, HDCP V1.1
Signal Equalization	Internal

Maximum Distances

Source to DA	20 meters (60') for 1080p/8-bit
	15 meters (45') for 1080p/12-bit
DA to Display	15 meters (45') for 1080p/8-bit
	10 meters (30') for 1080p/12-bit

EDID Processing

Discovery Method	Automatic or Internal Reference

Warranty

Limited Warranty	2 Years Parts and Labor

Mechanical

Size (H-W-D)	41.5x218x147mm (1.6x8.6x5.8")
Weight (Net)	0.85kg (1.88lbs)

Environmental

Operating Temperature	0° to +50°C (+32° to +122°F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temp.	0° to +50°C (+32° to +122°F)
Storage Humidity	10% to 90%, Non-condensing

Power Requirement

Ext. Power Supply	5VDC@2A

Regulatory Approvals

DVI DAs	FCC, CE, RoHS
Power Supply	UL, CUL, CE, PSE, GS, RoHS

Accessories Included

1x AC Power Adapter	US, UK or Euro
1x Instruction Manual	
1x Accessory Pack	

Optional Accessories

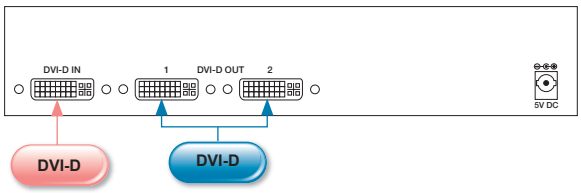
RM-220	Single/Dual Rackmount Kit

Product Item Numbers

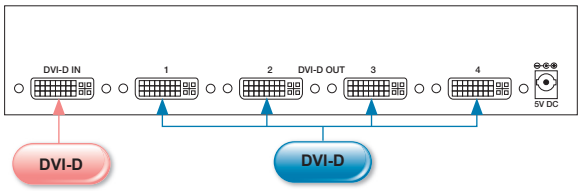
1T-DA-552	1x2 DVI DA
1T-DA-554	1x4 DVI DA
1T-DA-564	1x4 DVI DA with Audio

Control Interface | Input | Output | Input/ Output

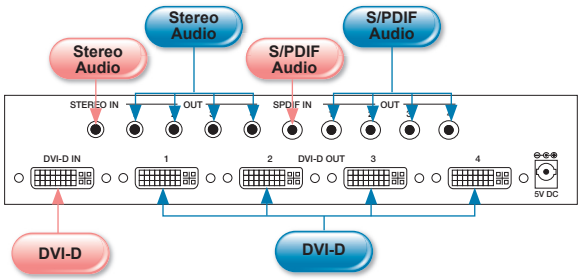
1T-DA-552



1T-DA-554



1T-DA-564

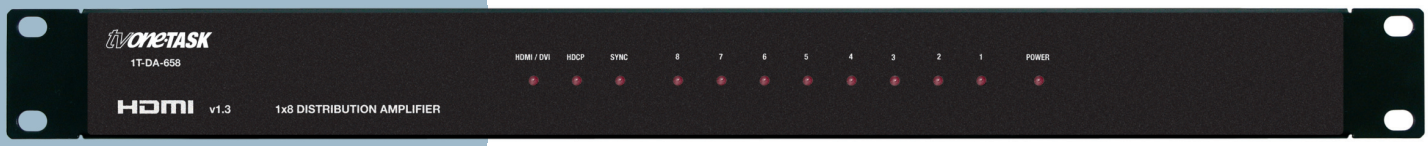


1T-DA-600 Series

HDMI v1.3 Distribution Amplifiers

Key Features 1T-DA-600 Series

- Multiple HDMI Outputs from a single source
- HDMI 1.3, HDCP 1.1, DVI 1.0 Compliant
- Distribution of 2 Outputs. (1T-DA-652)
- Distribution of 4 Outputs. (1T-DA-654 & 1T-DA-664)
- Distribution of 8 Outputs (1T-DA-658)
- Separate 1x4 Stereo & 1x4 S/PDIF (1T-DA-664)
- Dolby Digital +, Dolby® Digital TrueHD & DTS-HD
- 10/12 bit Color Depth Display
- PC & HDTV resolutions – Up to 1920x1200, 1080p
- Supports DVI - Opt. HDMI to DVI Adaptors
- Signal Equalization for longer cable runs
- Supports Automatic Discovery of Monitor EDID
- Locking DC Connectors for security
- Opt. Rackmount Kits (except 1T-DA-652)



1T-DA-652 HDMI Distribution Amplifier provides 2 outputs from a single HDMI input for distribution to devices capable of receiving and/or displaying HDMI signals. The 1T-DA-652 is compatible with HDMI v1.3 specifications and provides a cutting-edge technology that supports Deep Color (10-bit and12-bit) video plus new, lossless Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio digital audio. In addition, all devices exhibit high bandwidth (up to 225MHz - 2.25Gbps) and provide signal amplification and equalization for high performance processing of audio and video allowing the signals to travel great distances without quality loss. Outputs can be cascaded for greater versatility. The 1T-DA-652 can support DVI signals when used in conjunction with DVI to HDMI cable adapters. Using the adapters, PC and HDTV resolutions up to 1920x1200 and 480i through 1080p can be accommodated. Installation is fast and simple: connect input and output cables plus power and the unit is fully functional without any further action required.

1T-DA-654, **1T-DA-664**, **1T-DA-658 HDMI Distribution Amplifiers** provide multiple outputs from a single HDMI input for distribution to devices capable of receiving and/or displaying such signals. The 1T-DA-654 provides 4 HDMI compliant outputs, the 1T-DA-658 provides 8 HDMI compliant outputs and the 1T-DA-664 provides 4 HDMI compliant outputs plus separate audio distribution via integral 1x4 analog stereo and 1x4 S/PDIF coaxial audio. Each product in this series is compatible with HDMI v1.3 specifications; a cutting-edge technology that supports Deep Color (10-bit and12-bit) video plus new, lossless Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio digital audio. In addition, all devices exhibit high bandwidth (up to 225MHz - 2.25Gbps) and provide signal amplification and equalization for high performance processing of audio and video allowing the signals to travel great distances without quality loss.

A rear panel switch allows the EDID reference to be selected from either a connected display on a priority basis or from an internal resolution look-up table All DAs can also be cascaded for expanded functionality and all HDMI Distribution Amplifiers can function as DVI Distribution Amplifiers using cable adapters. An optional Rack Mounting kit provides for mounting either one or two of the 1T-DA-654 or 1T-DA-664 HDMI DAs in a 19” Rack. Optional Rack Ears are available for mounting a single 1T-DA-658 in a standard 19” rack.

1T-DA-600 Series Specifications

Video Inputs

HDMI (All Models)	1x via HDMI Connector

Video Output

1T-DA-652	2x via HDMI Connector
1T-DA-654 & 664	4x via HDMI Connector
1T-DA-658	8x via HDMI Connector

Separate Audio (1T-DA-664 Only)

Format	Analog Stereo and S/PDIF
Analog Stereo In	1x via Stereo 3.5mm Mini Stereo
Analog Stereo Out	4x via Stereo 3.5mm Mini Stereo
S/PDIF In	1x Via RCA Coaxial
S/PDIF Out	4x Via RCA Coaxial
Audio Bandwidth	20Hz to 20 KHz
Audio Impedance	20KΩ Stereo, 75Ω S/PDIF
Audio Levels	Unity, Nominal, S/PDIF .5-1V p-p

HDMI Transport

Freq. Bandwidth	2.25Gbps (HDMI Single Link)
Color Depth	10/12 bit Color Depth Display
PC/DVI resolutions	Up to 1920x1200
HDTV Formats	480p, 576p, 720p, 1080i, 1080p
SDTV Formats	480i, 576i
Compliance	HDMI V1.3, HDCP V1.1, DVI 1.0
Signal Equalization	Internal

Maximum Distances

Source to DA	20 meters (60') for 1080p/8-bit 15 meters (45') for 1080p/12-bit
DA to Display	15 meters (45') for 1080p/8-bit 10 meters (30') for 1080p/12-bit

EDID Processing (1T-DA-654, 1T-DA-664, 1T-DA-658)

Discovery	Automatic or Internal Reference

Signal Processing

Signal Equalization	Low Noise Amp. for long cable runs

Warranty

Limited Warranty	2 Years Parts and Labor

Mechanical

1T-DA-652 (H-W-D0	25x100x147mm (0.98"x3.9"x5.8")
1T-DA-654/664 (H-W-D)	41.5x218x147mm (1.6x8.6x5.8")
1T-DA-658 (H-W-D)	44x436x160mm (1.75"19.0"x6.3")
1T-DA-652 Weight	300g (0.7lbs)
1T-DA-654/664 Weight	0.85 kg (1.88lbs)
1T-DA-658 Weight	2kg (4.4 lbs)

Environmental

Operating Temperature	0° to +50°C (+32° to +122°F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temp.	0° to +50°C (+32° to +122°F)
Storage Humidity	10% to 90%, Non-condensing

Power Requirement

Ext. Power Supply	5VDC@2A for 1T-DA-652/654/664 5VDC@5A for 1T-DA-658

Regulatory Approvals

DAs	FCC, CE, RoHS
Power Supply	UL, CUL, CE, PSE, GS, RoHS

Accessories Included

1x AC Power Adapter	US, UK or Euro Type
1x Instruction Manual	

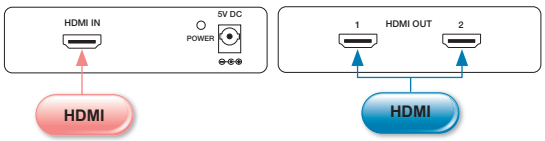
Optional Rackmount Kits

RM-220	For 1T-DA-654/664 (Single/Dual)
RM-380S	For 1T-DA-658 (Single)

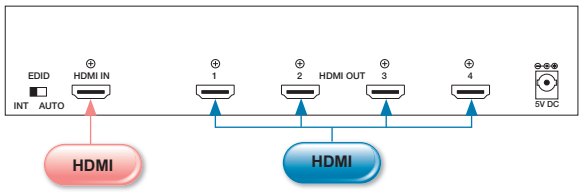
Product Item Numbers

1T-DA-652	1x2 HDMI DA
1T-DA-654	1x4 HDMI DA
1T-DA-664	1x4 HDMI DA w/Separate Audio
1T-DA-658	1x8 HDMI DA

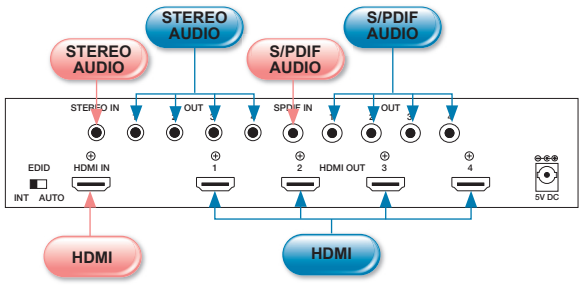
1T-DA-652



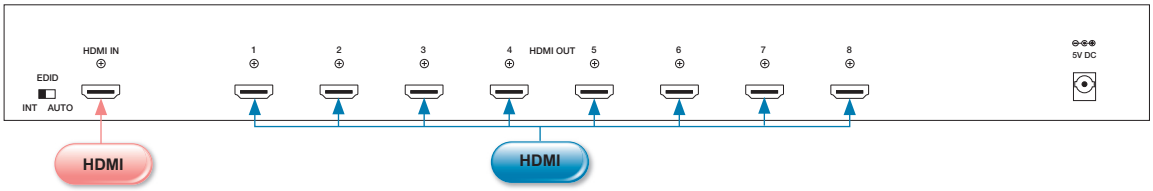
1T-DA-654



1T-DA-664



1T-DA-658



1T-DA-631

HDMI v1.3 Extender

Key Features 1T-DA-631

- Ultra Compact, High Performance Unit
- Compatible with HDMI v1.3
- Supports HDTV to 1080p with 12 Bit Color
- Built in DDC Extender restores HDCP Signals
- Max Distance Source to Equalizer - 40 m
- Max Distance Equalizer to Display - 5 m
- Locking DC Power Adapter for Security
- Rugged Metal Case

1T-DA-631 is a dynamic cable equalizer that restores the HDMI v1.3 signal at the end of long cable runs prior to the input of the display. This circuitry enhances both Plug and Play characteristics as well as the HDCP signal component. All signal components present within the encoded signal are maintained, including Stereo or 7.1 Audio and HDCP encryption. The maximum distance from the source to the Equalizer input is 40 meters and up to 5 meters from the output to the display when using premium grade HDMI cables. The unit is powered from an external power adapter provided with the unit. HDTV resolutions of 480p, 720p, 1080i and 1080p are supported.

1T-DVI-RH

DVI Repeater with HDCP

Key Features 1T-DVI-RH

- Ultra Compact, High Performance Unit
- Resolutions up to 1600x1200
- DDC Pass-thru from Display
- HDCP Compliant
- Extend DVI signals 40 feet (premium cable)
- Cascade up to three units (premium cable)
- Rugged Metal Case

1T-DVI-RH Repeater is an ultra compact, high performance product designed to meet the most demanding requirements for DVI signal amplification. The 1T-DVI-RH is HDCP compliant and provides transparent extension of DVI signals up to 12 meters (40 feet). The unit has DVI-I Connectors for the input and output. Multiple units may be cascaded to deliver the DVI signal great distances from the source, using high performance DVI cables. HDTV resolutions of 480p, 720p, 1080i and 1080p are supported.

HDMI and HDCP

HIGH-DEFINITION MULTIMEDIA INTERFACE

High Definition Multimedia Interface. HDMI is the first and only digital interface to combine uncompressed high-definition video, multi-channel audio and intelligent format and command data in a single digital interface. For your end-users, use of a single cable for audio and video dramatically simplifies home theater system installation and eliminates the cable quagmire typically associated with home theater system components. TV One is an HDMI Adopter.

High Definition Content Protection. HDCP is a specification developed by Intel Corporation to protect digital entertainment content across the DVI/HDMI interface. The HDCP specification provides a robust, cost-effective and transparent method for transmitting and receiving digital entertainment content to DVI/HDMI-compliant digital displays. TV One is an HDCP licensee

1T-DA-631 Specifications

Video Inputs/Outputs

HDMI Input/Output	HDMI Type A

Video Specifications

HDTV Resolutions	480p, 720p, 1080i, 1080p
Maximum Bandwidth	2.25GHz
HDMI Compliance	Version 1.3

Maximum Cable Lengths

Source to Equalizer Input	40 Meters (150') (Note 1)
Equalizer Out to Display	5 Meters (15') (Note 1)

Power Requirement

Via External Power Supply	5VDC@ 2A – Locking DC

Environmental

Operating Temperature	0° to +40° C (+32° to +104° F)
Operating Humidity	10% to 85%, Non-Condensing
Storage Temperature	-20° to +60° C (-4° to +140° F)
Storage Humidity	10% to 85%, Non-Condensing

Mechanical

Size (H-W-D)	22x42x53.5mm (0.9"x.1.7"x2.1")
Weight (Net)	90 g (0.19 lbs)

Regulatory Approvals

Extender Unit	FCC, CE, RoHS, HDMI
Power Supply	UL, CUL, CE, PSE, GS, RoHS

Warranty

Limited Warranty	2 Years Parts and Labor

Accessories Included

1x Power Adapter	US, UK or Euro
Operations Manual	

Product Item Number

1T-DA-631	HDMI Extender

Notes

(1) To achieve the max rated distance, use premium cables.

1T-DVI-RH Specifications

Performance

Maximum Distance	12 meters (40') (Note 1)
Maximum Cascade	3 Units (Note 1)
Maximum Pixel Rate	165MHz
Maximum Resolution	1600x1200@60Hz, 1080p
I/O Connectors	DVI-I Female

Indicators

Power On	LED

Mechanical

Size (H-W-D)	29x75x118mm (1.15"x3"x4.65")
Weight (Net)	280 g (0.63 lbs)

Warranty

Limited Warranty	2 Years Parts and Labor

Environmental

Operating Temperature	0° to +50° C (+32° to +122° F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-20° to +70° C (-4° to +158° F)
Storage Humidity	10% to 90%, Non-condensing

Power Requirement

External Power Supply	9VDC@600mA – Locking DC

Regulatory Approvals

Amplifier Units	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Accessories Included

1x Power Adapter	US, UK or Euro
1x Operations Manual	

Product Item Number

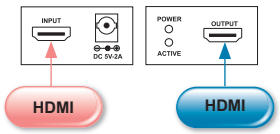
1T-DVI-RH	DVI Repeater

Notes

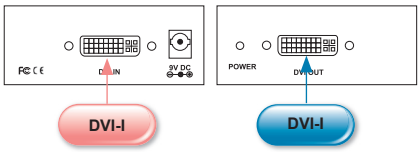
(1) Using premium 24 gauge premium cable.

Control Interface | Input | Output | Input/ Output

1T-DA-631



1T-DVI-RH



1T-DA-472, 1T-DA-474

RGB/YPbPr and Stereo Audio Distribution Amplifiers

Key Features 1T-DA-472, 1T-DA-474

- Drives Monitors up to 300 feet away
- 500+MHz Video Signal Bandwidth
- Maximum Resolution of 2560x1600
- Handles RGB or YPbPr signal formats
- Audio Response of 20Hz to 20KHz
- Locking DC Power Connector for Security
- 2 or 4 Output versions available
- Cascade Units for even greater flexibility

1T-DA-472 and **1T-DA-474** RGB/YPbPr and Stereo Audio Distribution Amplifiers provide two or four outputs respectively for use in any situation requiring multiple Video and Stereo Audio outputs from a single PC or other RGB or YPbPr video source. Video bandwidth in excess of 500MHz handles computer resolutions up to 2560x1600 at distances up to 300 feet from the source without signal deterioration. Both models provide VESA industry standard DDC (Data Display Channel) bi-directional communications for host control of the downstream monitors. Video Input/Output connectors are HD-15 type and 3.5mm Mini-Stereo type for audio.

Both models are housed in small rugged metal cases. They are 5VDC powered and a Power Adapter is included. The DC power connector is a locking type for security. For best performance at long distances, premium grade cables are recommended. Optional single or dual rackmount kits are available.

1T-DA-462

RGB/YPbPr and Stereo Audio Distribution Amplifier

Key Features 1T-DA-462

- Drives Monitors up to 300 feet away
- 450+MHz Signal Bandwidth
- Maximum Resolution of 2560x1600
- Handles RGB or YPbPr signal formats
- Locking DC Power Connector for Security
- Distributes both Video and Audio
- Cascade Units for even greater flexibility

1T-DA-462 RGB/YPbPr Distribution Amplifier provides two VGA type outputs plus Stereo Audio for use in any situation requiring multiple outputs from a single PC or other RGB or YPbPr video source. The video bandwidth in excess of 450MHz handles computer resolutions up to 2560x1600 at distances up to 300 feet from the source without signal deterioration. The DA provides VESA industry standard DDC (Data Display Channel) bi-directional communications for host control of the downstream monitors. Input and Output Video connectors are HD-15 type.

The 1T-DA-462 is housed in a small, rugged high impact plastic case. It is 5VDC powered by a USB adapter cable or AC Power Adapter, both of which are included. The DC power connector is a locking type for security. For best performance at long distances, premium grade cable is recommended.

1T-DA-472, 1T-DA-474 Specifications

Video Input

Signal Type	RGBHV, RGBS, RGsB, YPbPr
Connector	1x HD-15 Female
R-G-B Level Range	0.5-2.0 Vp-p
Maximum Resolution	2560x1600

Audio Input

Connector	1x 3.5mm Stereo Audio
Bandwidth/Level	20Hz-20KHz@0.5 to 1Vp-p

Video Outputs

1T-DA-472	2x via HD-15 Female Connectors
1T-DA-474	4x via HD-15 Female Connectors

Audio Outputs

1T-DA-472	2x via 3.5mm Audio Connectors
1T-DA-474	4x via 3.5mm Audio Connectors

General

R-G-B Bandwidth	500+MHz
Maximum Distance	Up to 300' from amplifier (Note 1)
DDC Capability	DDC1, DDC2, DDC2B (Port 1)

Mechanical

Size (H-W-D)	44x160x58mm (1.7"x6.3"x2.3")
Weight (Net)	400g (0.88 lbs)

Warranty

Limited Warranty	2 Years Parts and Labor

Environmental

Operating Temperature	0° to +50°C (+32° to +122°F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-10° to +60° C (+14° to +140° F)
Storage Humidity	10% to 90%, Non-condensing

Power Requirement

External Power Supply	5VDC@2A - Locking Plug

Regulatory Approvals

Amplifier Units	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Accessories Included

1x AC Power Adapter	US, UK or Euro
1x Operations Manual	

Product Item Numbers

1T-DA-472	2-Output Version
1T-DA-474	4-Output Version

Optional Accessories

RM-320S	Rackmount kit for one unit
RM-320D	Rackmount kit for two units

Notes

(1) To achieve the max rated distance, use premium cables.

1T-DA-462 Specifications

Video Input

Signal Type	RGBHV, RGBS, RGsB, YPbPr
Connector	1x HD-15 Female
R-G-B Level Range	0.5-2.0 Vp-p
Maximum Resolution	2560x1600

Audio Input

Connector	1x 3.5mm Stereo Audio
Bandwidth/Level	20Hz-30KHz@0.5 to 1Vp-p

Video Output

Connector	2x via HD-15 Female Connectors

Audio Output

Connector	2x 3.5mm Stereo Audio

General

R-G-B Bandwidth	450+MHz
Maximum Distance	Up to 300' from amplifier (Note 1)
DDC Capability	DDC1, DDC2, DDC2B (Port 1)

Mechanical

Size (H-W-D)	23x86x86mm (0.9"x3.5"x3.5")
Weight (Net)	90 g (0.21 lbs)

Warranty

Limited Warranty	2 Years Parts and Labor

Environmental

Operating Temperature	0° to +48° C (+32° to +120° 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

Power Requirement

External Power Supply	5VDC@2A - Locking Plug

Regulatory Approvals

Amplifier Units	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Accessories Included

1x Power Adapter	US, UK or Euro
1x USB Power Cable	
1x Operations Manual	

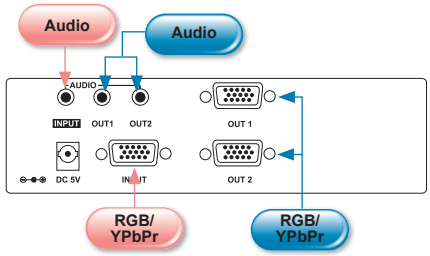
Product Item Number 1T-DA-462

Notes

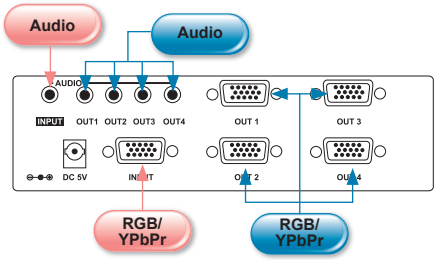
(1) To achieve the max rated distance, use premium cables.

Control Interface | Input | Output | Input/ Output

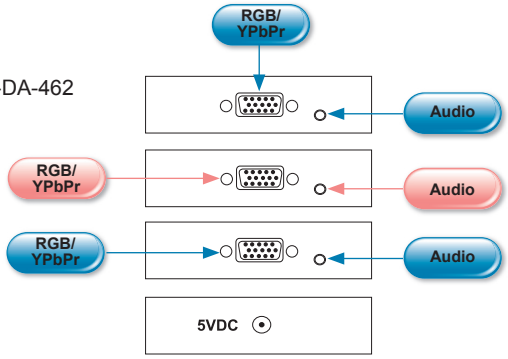
1T-DA-472



1T-DA-474



1T-DA-462



1T-VGA-412, 1T-VGA-414

RGB/YPbPr Distribution Amplifiers

Key Features 1T-VGA-412/414

- Drives Monitors up to 300 feet away
- 500+MHz Signal Bandwidth
- Maximum Resolution of 2560x1600
- Handles RGB or YPbPr signal formats
- Locking DC Power Connector for Security
- 2 or 4 Output versions available
- Cascade Units for even greater flexibility

1T-VGA-412 and **1T-VGA-414** RGB/YPbPr Distribution Amplifiers provide two or four outputs respectively for use in any situation requiring multiple outputs from a single PC or other RGB or YPbPr video source. The video bandwidth in excess of 500MHz handles computer resolutions up to 2560x1600 at distances up to 300 feet from the source without signal deterioration. Both models provide VESA industry standard DDC (Data Display Channel) bi-directional communications for host control of the downstream monitors. Input and Output connectors are HD-15 type.

Both models are housed in small rugged metal cases. They are 5VDC powered and a Power Adapter is included. The DC power connector is a locking type for security. For best performance at long distances, premium grade cable is recommended. Optional single or dual rackmount kits are available.

1T-DA8 Series

YC/CV Distribution Amplifiers

Key Features 1T-DA8 Series

- Ultra Compact, High Performance Units
- PAL and NTSC Television Standards
- Video Bandwidth: 100MHz
- Video Outputs: 8x Composite or YC
- Locking DC Power Connector for Security

1T-DA8 Distribution Amplifiers are ultra compact, high quality products. The 1T-DA8CVB is a 1x8 DA for Composite Video with BNC connectors, the 1T-DA8CVR is a 1x8 DA for Composite Video with RCA connectors and the 1T-DA8SV is a 1x8 DA for YC (S-Video). The 100MHz Bandwidth insures these products will provide multiple video outputs identical to the source signal.

All models are 12VDC powered and a Power Adapter is included. For best performance, use high-grade input and output cables.

1T-VGA-412, 1T-VGA-414 Specifications

Video Input

Signal Type	RGBHV, RGBS, RGsB, YPbPr
Connector	1x HD-15 Female
R-G-B Level Range	0.5-2.0 Vp-p
Maximum Resolution	2560x1600

Video Outputs

1T-VGA-412	2x via HD-15 Female Connectors
1T-VGA-414	4x via HD-15 Female Connectors

General

R-G-B Bandwidth	500+MHz
Maximum Distance	Up to 300' from amplifier (Note 1)
DDC Capability	DDC1, DDC2, DDC2B (Port 1)

Mechanical **Size (H-W-D)**

All units	44x160x58mm (1.7"x6.3"x2.3")

Weight (Net)

1T-VGA-412 Wt (Net)	370 g (0.81 lbs)
1T-VGA-414 Wt (Net)	400 g (0.88 lbs)

Warranty

Limited Warranty	2 Years Parts and Labor

Environmental

Operating Temperature	0° to +40° C (+32° to +104° F)
Operating Humidity	10% to 85%, Non-condensing
Storage Temperature	-20° to +60° C (-4° to +140° F)
Storage Humidity	10% to 85%, Non-condensing

Power Requirement

External Power Supply	5VDC@2A - Locking Plug

Regulatory Approvals

Amplifier Units	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Accessories Included

1x Power Adapter	US, UK or Euro
1x Operations Manual	

Optional Accessories

RM-320S	Rackmount kit for one unit
RM-320D	Rackmount kit for two units

Product Item Numbers

1T-VGA-412	2-Output Version
1T-VGA-414	4-Output Version

Notes

(1) To achieve the max rated distance, use premium cables.

1T-DA8 Series Specifications

Inputs

1T-DA8CVB	1x Composite Video via BNC
1T-DA8CVR	1x Composite Video via RCA
1T-DA8SV	1x S-Video via 4-Pin Mini-DIN

Outputs

1T-DA8CVB	8x Composite Video via BNC
1T-DA8CVR	8x Composite Video via RCA
1T-DA8SV	8x S-Video via 4-Pin Mini-DIN

Video Performance

Bandwidth	100MHz,+/-3db
Impedance	75Ω
Distortion	<0.5db
Differential Gain	<0.1%
Differential Phase	<0.1°
Isolation	>65db
Signal/Noise Ratio	>65db
Signal Gain	Unity
Television Standards	PAL-NTSC

Mechanical **Size (H-W-D)**

All units	25x175x100mm (1"x7"x4")

Weight (Net)

1T-DA8CVB Weight (Net)	510 g (1.13 lbs)
1T-DA8CVR Weight (Net)	400 g (0.88 lbs)
1T-DA8SV Weight (Net)	400 g (0.88 lbs)

Warranty

Limited Warranty	2 Years Parts and Labor

Environmental

Operating Temperature	0° to +70°C (+32° to 158° C)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-25° C to +95° C (-13° to +203°F)
Storage Humidity	10% to 90%, Non-condensing

Power Requirement

External Power Supply	12VDC@500mA - Locking DC

Regulatory Approvals

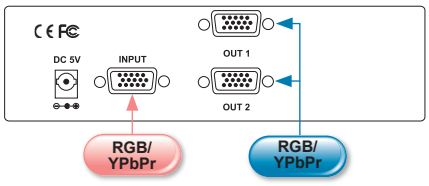
Amplifier Units	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Accessories Included

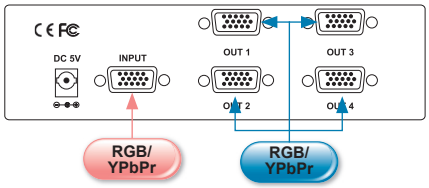
1x Power Adapter	US, UK or Euro
1x Operations Manual	

Control Interface | Input | Output | Input/ Output

1T-VGA-412

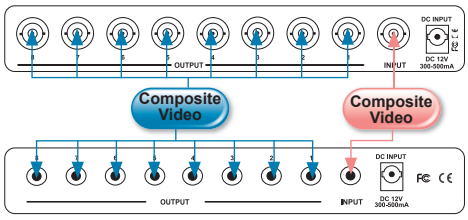


1T-VGA-414

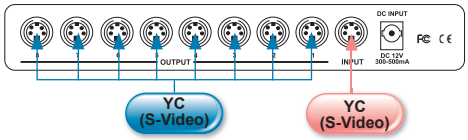


1T-DA8CVB

1T-DA8CVR

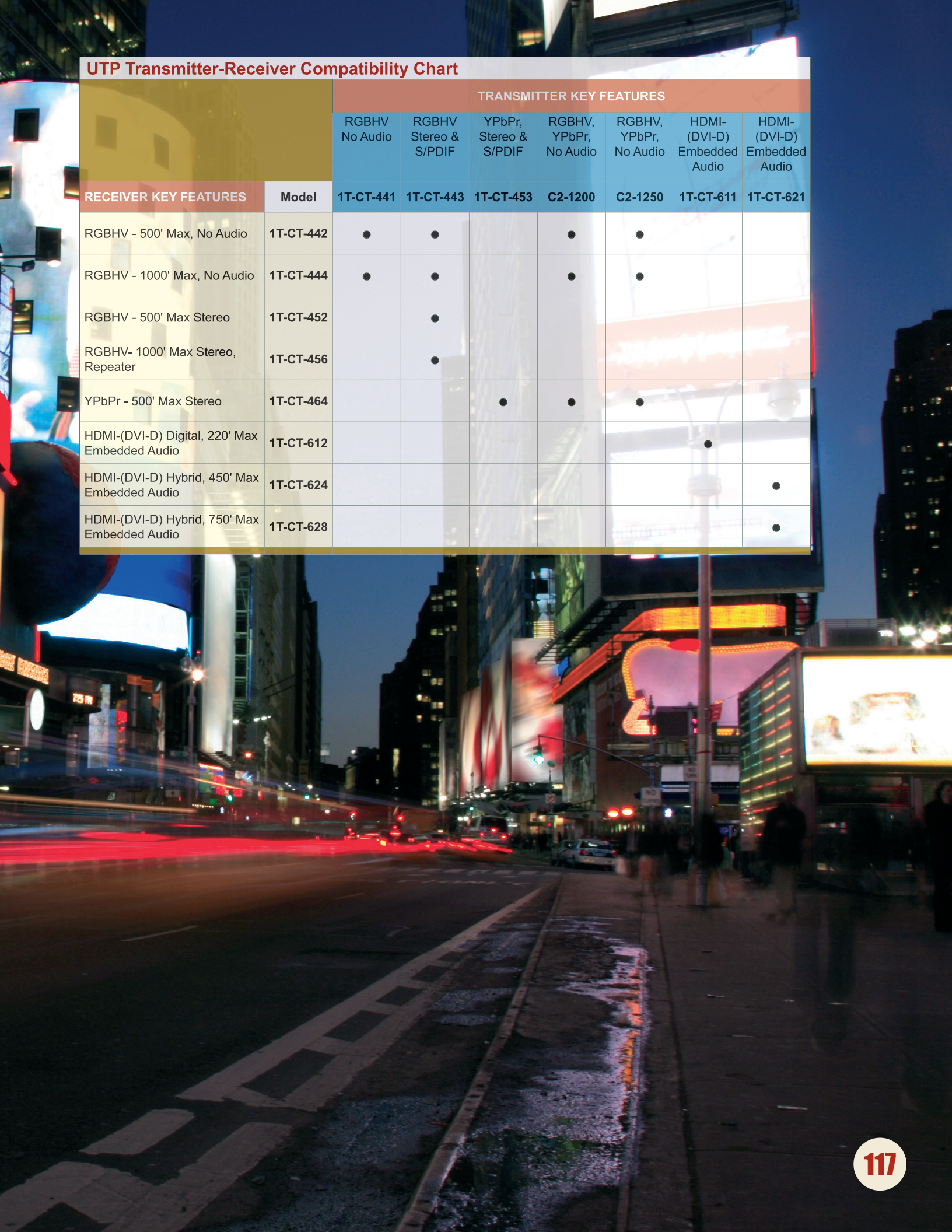


1T-DA8SV



CAT. 5/6 Extenders

Twisted Pair Transmission Systems using CAT. 5/5E or CAT. 6 cable can transmit analog RGBHV or YPbPr video at resolutions up to 1920x1024 and 1080p, plus digital or analog audio, over distances up to 300 meters (1,000'). HDMI or DVI video at those same resolutions, plus embedded audio, can be transmitted up to 250 meters (750').



UTP Transmitter-Receiver Compatibility Chart

		TRANSMITTER KEY FEATURES						
		RGBHV No Audio	RGBHV Stereo & S/PDIF	YPbPr, Stereo & S/PDIF	RGBHV, YPbPr, No Audio	RGBHV, YPbPr, No Audio	HDMI-(DVI-D) Embedded Audio	HDMI-(DVI-D) Embedded Audio
RECEIVER KEY FEATURES	**Model**	**1T-CT-441**	**1T-CT-443**	**1T-CT-453**	**C2-1200**	**C2-1250**	**1T-CT-611**	**1T-CT-621**
RGBHV - 500' Max, No Audio	**1T-CT-442**	●	●		●	●		
RGBHV - 1000' Max, No Audio	**1T-CT-444**	●	●		●	●		
RGBHV - 500' Max Stereo	**1T-CT-452**		●					
RGBHV- 1000' Max Stereo, Repeater	**1T-CT-456**		●					
YPbPr - 500' Max Stereo	**1T-CT-464**			●	●	●		
HDMI-(DVI-D) Digital, 220' Max Embedded Audio	**1T-CT-612**						●	
HDMI-(DVI-D) Hybrid, 450' Max Embedded Audio	**1T-CT-624**							●
HDMI-(DVI-D) Hybrid, 750' Max Embedded Audio	**1T-CT-628**							●

1T-CT-400 Series

CAT. 5 Transmitters

Key Features 1T-CT-400 Series

- Models for RGBHV or YPbPr format
- Resolutions to 1920x1200, 1080p @ 60Hz
- Some Models with Digital & Analog Stereo
- 1 Model has built-in UTP Repeater for cascading
- Ranges up to 300 Meters (1,000 Feet)
- Locking power supply for security
- Optional Rackmount Kits available

Transmitters

- 3 Models available for maximum flexibility
- All Models with 300 meter (1,000') maximum range
- 2 Models with RGBHV only
- 1 Model with YPbPr only
- 1 Model without audio
- 2 Models with Analog Stereo and S/PDIF
- All Models with Video loop-thru for monitoring
- 2 Models with Audio monitoring output
- 2 C2 Video Switcher/Scaler models with UTP Out

1T-CT-400 Series is a comprehensive system for the transmission of RGBHV or YPbPr video at resolutions up to 1920x1200 and 1080p, plus digital or analog audio signals over CAT. 5/5E or CAT. 6 cable at great distances. The mix and match approach to the product line enables the user to choose the most cost efficient units to perform a specific task. Rackmount options are available for all models for ease of systems integration. All products use the unique TV One-task locking power connectors to enhance overall system security.

Transmitters - Three transmitter models are available, allowing the selection of the features necessary for the specific application at hand. All transmitters are capable of distances up to 300 meters (1,000 feet), some providing analog and digital audio capability. Two models handle RGBHV and one handles YPbPr format. Two models provide audio support. In addition to those transmitter models, two CORIO2 Video Scaler/Switchers have an integral UTP output. Models C2-1200 and C2-1250 can output either RGBHV or YPbPr format video signals to distances up to 300 meters (1,000 feet) without audio. Select the appropriate transmitter using the reference charts below.

1T-CT-400 Series Specifications

Video Inputs

1T-CT-441, 443	1x RGBHV via HD-15
1T-CT-453	1x YPbPr via 3 RCA

Video Loop-thru Outputs

1T-CT-441, 443	1x RGBHV via HD-15

Audio Inputs

1T-CT-441	None
1T-CT-443, 453	1x Analog Stereo via 3.5mm
	1x S/PDIF via Toslink

Audio Monitoring Outputs

1T-CT-441	None
1T-CT-443, 453	1x Analog Stereo via 3.5mm

Video Performance

Maximum Resolutions	Up to 1920x1200, 1080p / 60Hz
Video Bandwidth	350MHz
Input Signal Levels	Video 0.75mV, Sync 5V TTL
Horizontal Freq Range	15-70KHz
Vertical Freq Range	30-170Hz

Audio Performance

Input Sampling Rates	32, 44.1, 48, 96KHz

Maximum Range

All Models	300m (1,000'), depending on Receiver selected

UTP Output Connectors

1T-CT-441, 443, 452	1xRJ-45

Mechanical (H-W-D)

1T-CT-441, 443, 453	88x141x32mm (1.26x5.5x3.5")

Weight

1T-CT-441, 443, 453	224g (0.53 lbs)

Power Requirement

External Power Supply	5 VDC@2A, Locking DC

Environmental

Operating Temperature	0° to +70° C (+32° to +158° F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-40° to +70° C (-40° to +158° F)
Storage Humidity	10% to 90%, Non-condensing

Warranty

Limited Warranty	2 Years Parts and Labor

Regulatory Approvals

Encoder/Decoder Unit	FCC, CE, RoHS
Power Supply	UL, CUL, CE, PSE, GS, RoHS

Cable Requirements

CAT.5/5E or CAT 6	Network Grade, Premium

Accessories Included

1x Power Adapter	US, UK or Euro
1x User Manual	1T-CT-400 Series

Optional Accessories

RM-370T Rackmount	3 units – 1T-CT-441, 443, 453

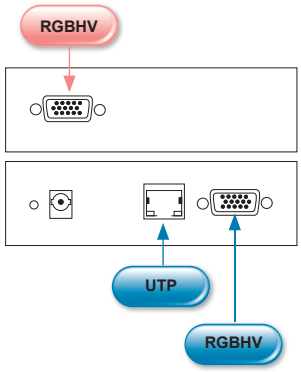
Model Numbers

1T-CT-441	For RGBHV
1T-CT-443	For RGBHV, Stereo
1T-CT-453	For YPbPr, Stereo

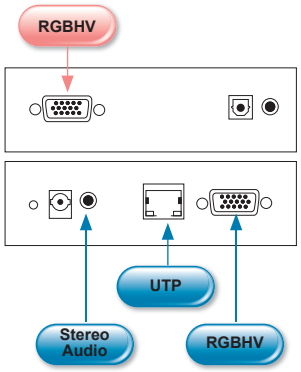
Note

Video Switcher/Scaler Models C2-1200 and C2-1250 have UTP outputs that can transmit either RGBHV or YPbPr to distances up to 300 meters without audio. Check the Spec Sheets for those products for full details. These units are compatible with UTP Receiver models 1T-CT-442, 444, 464.

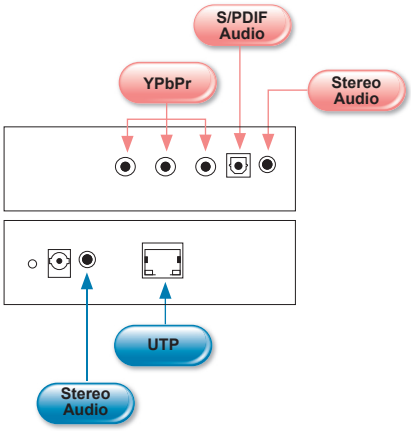
1T-CT-441



1T-CT-443



1T-CT-453



1T-CT-400 Series

CAT. 5 Receivers

Key Features 1T-CT-400 Series

- Models for RGBHV or YPbPr format
- Resolutions to 1920x1200, 1080p @ 60Hz
- Some Models with Digital & Analog Stereo
- 1 Model has built-in UTP Repeater for cascading
- Ranges up to 300 Meters (1,000 Feet)
- Locking power supply for security
- Optional Rackmount Kits available

Receivers

- 5 Models available for maximum flexibility
- 3 Models with 500' maximum range
- 2 Models with 1,000' maximum range
- 4 Models for RGBHV
- 1 Model for YPbPr
- 2 Models without audio
- 3 Models with Analog Stereo and S/PDIF
- 1 Model with built-in UTP Repeater for cascading
- 2 Models with built-in Skew Compensation adjust
- All Models with Equalization and Gain adjustments
- 3 Models compatible with C2-1200/1250 Scalers

1T-CT-400 Series is a comprehensive system for the transmission of RGBHV or YPbPr video at resolutions up to 1920x1200 and 1080p, plus digital or analog audio signals over CAT. 5/5E or CAT. 6 cable at great distances. The mix and match approach to the product line enables the user to choose the most cost efficient units to perform a specific task. Rackmount options are available for all models for ease of systems integration. All products use the unique TV One-task locking power connectors to enhance overall system security.

Receivers - Five Receiver models continue the theme of flexibility, allowing the selection of the appropriate unit to provide distances of up to either 150 meter (500 feet) or 300 meter (1,000 feet). Choose models with or without audio as the application dictates. The long range models have built-in RGB Skew Compensation adjustments. The 1T-CT-456 has a built-in UTP Repeater that allows another receiver to be cascaded up to an additional 300 meters (1,000'). Select the appropriate receiver using the reference charts that follow.

1T-CT-400 Series Specifications

UTP Inputs

1T-CT-442, 444, 452	1xRJ-45
1T-CT-456, 464	1xRJ-45

UTP Outputs

1T-CT-456	1xRJ-45 for UTP Repeater Out

Video Outputs

1T-CT-442, 444, 452, 456	1x RGBHV via HD-15
1T-CT-464	1x YPbPr via 3 RCA

Audio Outputs

1T-CT-442, 444	None
1T-CT-452, 456, 464	1x Analog Stereo via 3.5mm 1x S/PDIF via Toslink

Video Performance

Maximum Resolutions	Up to 1920x1200, 1080p / 60Hz
Video Bandwidth	350MHz
Output Signal Levels	Video 0.75mV, Sync 5V TTL
Horizontal Freq Range	15-70KHz
Vertical Freq Range	30-170Hz

Audio Performance

Output Sampling Rate	32KHz

Maximum Range

1T-CT-442, 452	150m (500'), RGBHV Out
1T-CT-444, 456	300m (1,000'), RGBHV Out
1T-CT-464	150m (500'), YPbPr Out

Adjustments

All Models	Equalization and Gain
1T-CT-444, 456	RGB Skew Compensation

Mechanical (H-W-D)

All models	89x141x32mm (1.26x5.5x3.5")

Weight

All Models	240g (0.53 lbs)

Power Requirement

External Power Supply	+5 VDC@2A, Locking DC

Environmental

Operating Temperature	0° to +70° C (+32° to +158° F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-40° to +70° C (-40° to +158° F)
Storage Humidity	10% to 90%, Non-condensing

Warranty

Limited Warranty	2 Years Parts and Labor

Regulatory Approvals

Encoder/Decoder Unit	FCC, CE, RoHS
Power Supply	UL, CUL, CE, PSE, GS, RoHS

Cable Requirements

CAT.5/5E or CAT 6	Network Grade, Premium

Accessories Included

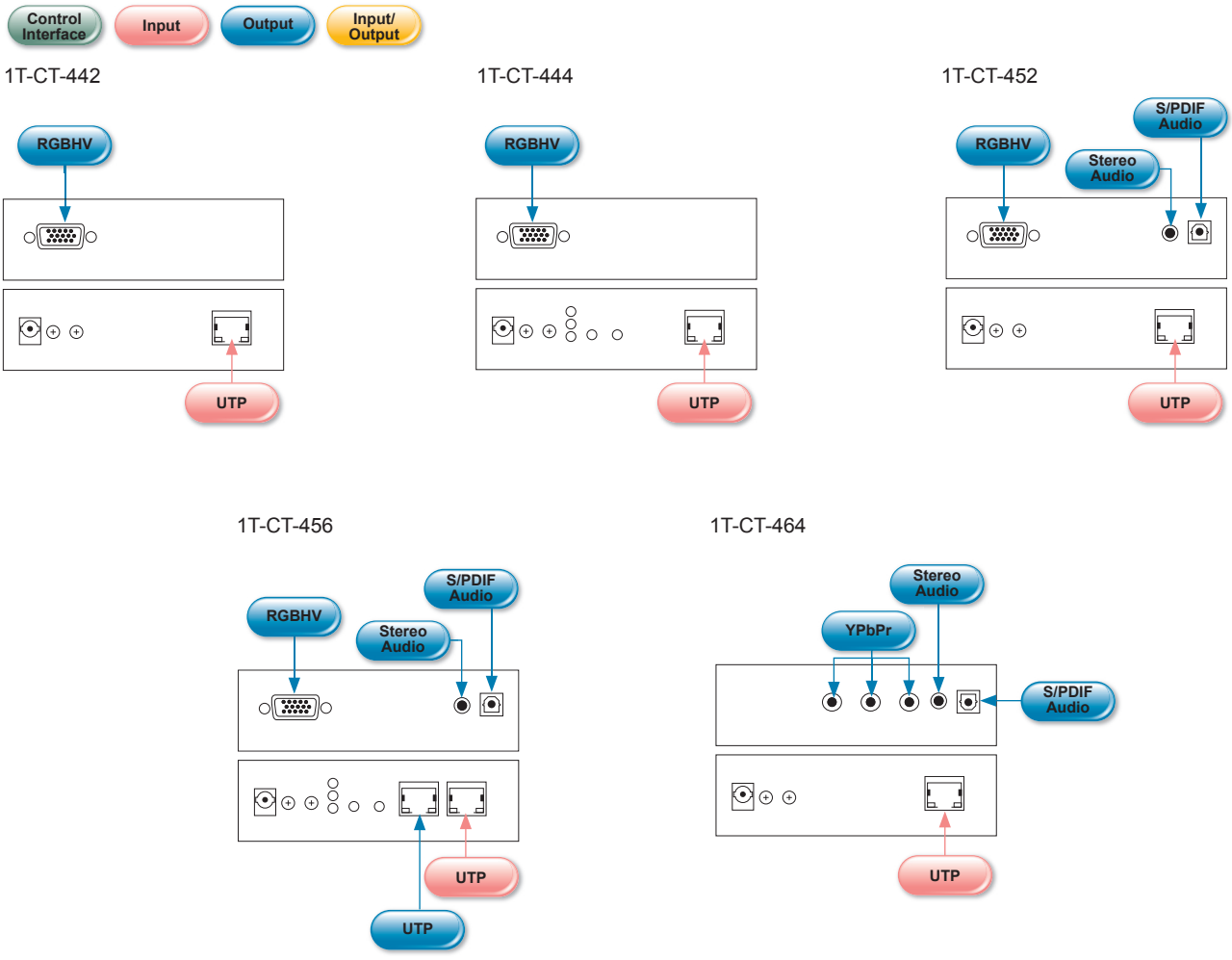
1x Power Adapter	US, UK or Euro
1x User Manual	1T-CT-400 Series

Optional Accessories

RM-370T Rackmount	3 units – All Models

Model Numbers

1T-CT-442	For RGBHV to 150m
1T-CT-444	For RGBHV to 300M
1T-CT-452	For RGBHV to 150m w/Stereo
1T-CT-456	For RGBHV to 300m w/Stereo
1T-CT-464	For YPbPr to 150m w/Stereo



1T-CT-610 Series

CAT. 6 HDMI Extenders

Key Features 1T-CT-610 Series

- HDMI Version 1.3a Compliant
- DVI-D Compatible
- Full Digital Transmission
- Zero signal loss via Cat.6 cable
- HDTV Resolutions up to 1080p @ 60Hz
- Maximum Distances
  85M (250 ft) at 480p
  75M (220 ft) at 720p, 1080i
  50M (150 ft) at 1080p
- Embedded HDMI Digital Audio
- HDCP Compliant
- Boost and EQ Adjustments
- Normal operation requires 2x Cat.6 Cables
- Single Cat.6 when HDCP and DDC are not needed
- Locking power supply for security
- Ultra Compact Size

1T-CT-611 Transmitter & **1T-CT-612 Receiver** provide all digital, zero loss transmission of HDMI version 1.3a signals at resolutions up to 1080p over Cat.6 cable. This is an all digital system, so the transmission distance varies with the resolution transmitted. 1080i HDTV signals can achieve distances up to 75 meters (220 feet) between the transmitter and receiver. For normal operation, two Cat.6 cables are required, one for the HDMI signal and one for the HDCP/DDC signal. Single cable operation is possible when HDCP and DDC are not needed. Signal Boost and Equalization adjustments via dipswitches are provided. The system is fully compatible with DVI-D signals. Locking power connectors are used to enhance overall system security.

1T-CT-620 Series

CAT. 5 HDMI Extenders

Key Features 1T-CT-620 Series

- HDMI Version 1.2 Compliant
- DVI-D Compatible
- Resolutions to 1920x1200, 1080p @ 60Hz
- Maximum Distance depends upon Receiver
  1T-CT-624 up to 150 meters (450 feet)
  1T-CT-628 up to 250 meters (750 feet)
- Embedded HDMI Digital Audio
- HDCP Compliant
- Gain and EQ Adjustments
- Normal operation requires 2x Cat.5, 5E or 6 Cables
- Single cable operation sometimes possible
- Locking power supply for security

1T-CT-620 Seriesis a system for the transmission of HDMI (or DVI-D) signals at resolutions up to 1920x1200 and 1080p, plus embedded audio, over Cat.5/5E or Cat.6 cable at great distances. The 1T-CT-621 Transmitter used in conjunction with the 1T-CT-624 Receiver can achieve distances up to 150 meters (450 feet), while use of the 1T-CT-628 Receiver can achieve distances up to 250 meters (750 feet). Achieving such long distances with an HDMI signal at 1080p requires use of a unique analog/digital hybrid transmission system. For normal operation, two Cat.5/5E or 6 cables are required, one for the main signal and one for the HDCP/DDC signal. Single cable operation is possible under certain circumstances; check with TV One Tech Support. The Receivers provide Gain and Equalization adjustments. The system is fully compatible with DVI-D signals. The unique TV One-task locking power connectors are used to enhance overall system security.

1T-CT-610 Series Specifications

Video I/O

1T-CT-611 Tx – HDMI In	1x via HDMI Connector
1T-CT-612 Rx – HDMI Out	1x via HDMI Connector

UTP Outputs I/O

1T-CT-611 Tx – UTP Out	2x via RJ-45 (Main & Aux)
1T-CT-612 Rx – UTP In	2x via RJ-45 (Main & Aux)

UTP Structure

Main	HDMI Video/Audio Signal
Aux	HDCP/DDC Signal

Video Performance

Maximum Resolutions	Up to 1920x1200, 1080p / 60Hz
Video Bandwidth	2.5Gbps
HDMI Compliance	Version 1.3a

Adjustments (via 3-position Dipswitches)

1T-CT-611 Transmitter	Output Signal Boost On/Off
	2 Levels of Input Equalization
	1 or 2 Cat.6 Cable Mode
1T-CT-612 Receiver	7 Levels of Equalization

Maximum Range

480p	85 meters (250 ft)
720p, 1080i	75 meters (220 ft)
1080p	50 meters (150 ft)

Environmental

Operating Temperature	0° to +70° C (+32° to +158° F)
Operating Humidity	20% to 85%, Non-condensing
Storage Temperature	-40° to +70° C (-40° to +158° F)
Storage Humidity	20% to 85%, Non-condensing

Warranty

Limited Warranty	2 Years Parts and Labor

Regulatory Approvals

Encoder/Decoder Unit	FCC, CE, RoHS
Power Supply	UL, CUL, CE, PSE, GS, RoHS

Cable Requirements

CAT. 6	Network Grade, Premium

Mechanical (H-W-D)

1T-CT-611, 612	25x59x63mm (1x2.3x2.5")

Weight

1T-CT-611, 612	120g (0.26 lbs)

Power Requirement

External Power Supply	5 VDC@2A, Locking DC

Accessories Included

1x Power Adapter	US, UK or Euro
1x User Manual	

Model Numbers

1T-CT-611	Transmitter
1T-CT-612	Receiver

1T-CT-620 Series Specifications

Video I/O

1T-CT-621 Tx-HDMI In	1x via HDMI Connector
1T-CT-624, 628 Rx-HDMI Out	1x via HDMI Connector

UTP Outputs I/O

1T-CT-621 Tx – UTP Out	2x via RJ-45 (Main & Aux)
1T-CT-624, 628 Rx – UTP In	2x via RJ-45 (Main & Aux)

UTP Structure

Main UTP Connector	HDMI Video/Audio Signal
Auxiliary UTP Connector	HDCP/DDC Control Signal

Video Performance

Maximum Resolution	Up to 1920x1200, 1080p / 60Hz
Video Bandwidth	1.65Gbps

Adjustments

1T-CT-624, 628	Equalization and Gain

Maximum Range

1T-CT-624	150 meters (450 ft)
1T-CT-628	250 meters (750 ft)

Environmental

Operating Temperature	0° to +50° C (+32° to +122° F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-10° to +70° C (12° to +158° F)
Storage Humidity	10% to 90%, Non-condensing

Warranty

Limited Warranty	2 Years Parts and Labor

Regulatory Approvals

Encoder/Decoder Unit	FCC, CE, RoHS
Power Supply	UL, CUL, CE, PSE, GS, RoHS

Cable Requirements

CAT.5/5E or CAT 6	Network Grade, Premium

Mechanical (H-W-D)

All Models	30x123x125mm(1.18x4.84x"4.92)

Weight

All Models	700g (1.54 lbs)

Power Requirement

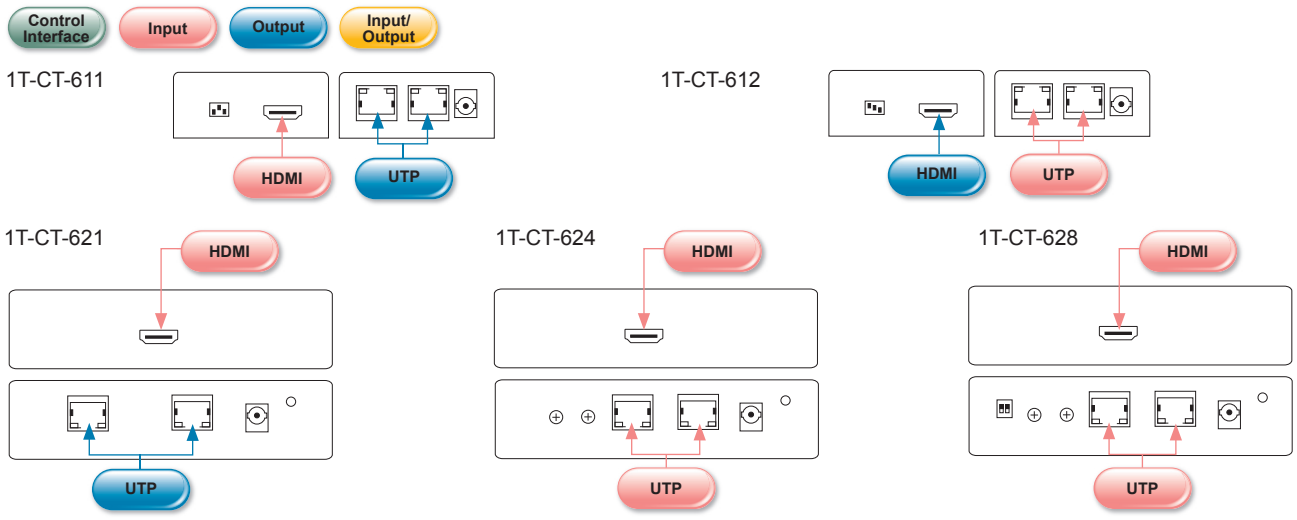
External Power Supply	5 VDC@2A, Locking DC

Accessories Included

1x Power Adapter	US, UK or Euro
1x User Manual	

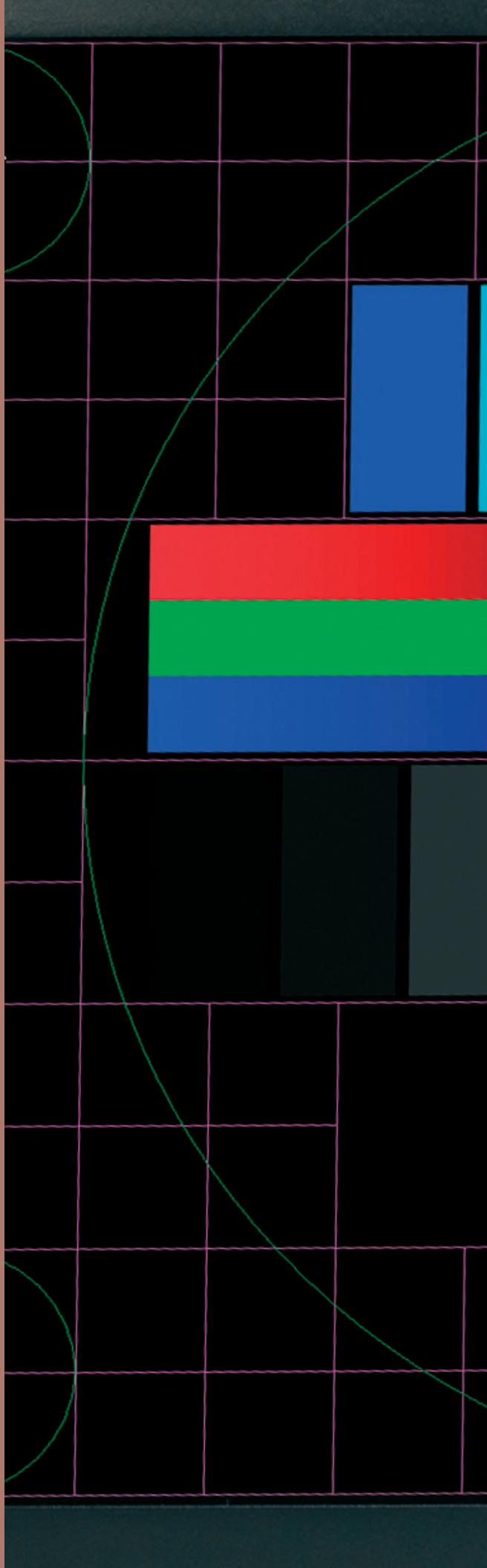
Model Numbers

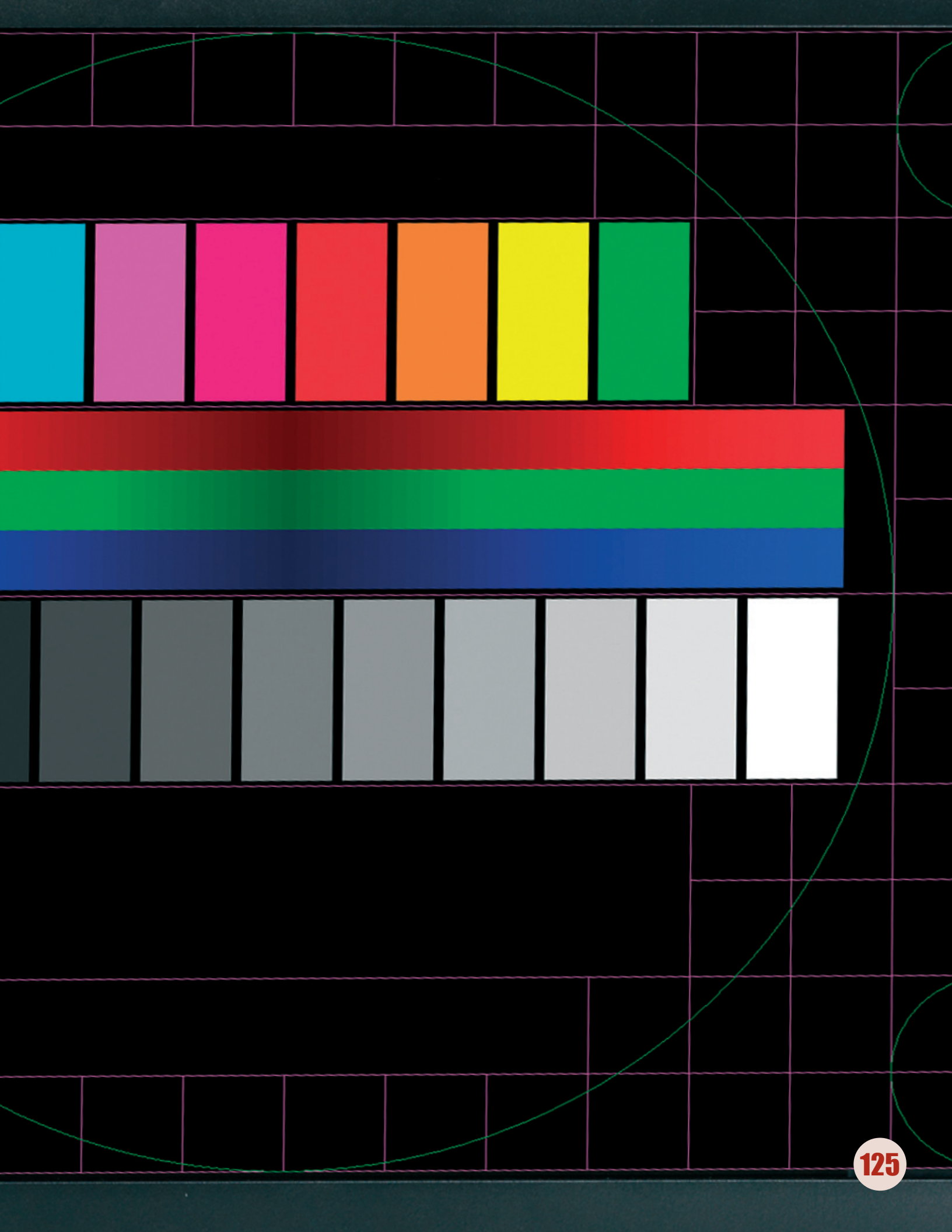
1T-CT-621	Transmitter
1T-CT-624	Receiver – Up to 150m (450 ft)
1T-CT-628	Receiver – Up to 250m (750 ft)



Video Test Pattern Generators

TV One's Test Pattern Generators are ultra compact, high performance products designed to meet the most demanding requirements. The output resolution and refresh rate can be selected from a wide variety of presets.



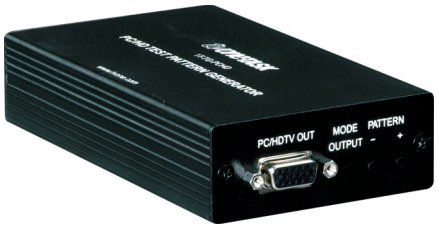


1T-TG-PCHD, 1T-TG-DVI

RGB/YPbPr Test Pattern Generators

Key Features 1T-TG-PCHD, 1T-TG-DVI

- Ultra Compact, High Performance Units
- Analog or DVI Versions
- PC up to 1280x1024 & HDTV Resolutions
- 25 Test Patterns



1T-TG-PCHD and **1T-TG-DVI** are ultra compact DVI and Analog RGB Test Pattern Generators designed for portable applications. The output resolution and refresh rate can be selected from a wide variety of presets. Model 1T-TG-PCHD provides an Analog output via an HD-15 Connector. Model 1T-TG-DVI provides a DVI-D output via a DVI-I Connector. The 25 test patterns provided were selected as the most useful for video reference and troubleshooting applications.

Both models are 5VDC powered and the Power Adapters are included. Locking DC Connectors are provided for security.

1T-TG-PCHD, 1T-TG-DVI Specifications

Output Resolutions (Note 1)

VESA	Resolution	Format / Refresh Rates
VGA	640x480	RGBHV 50, 60, 72, 75, 85Hz
SVGA	800x600	RGBHV 50, 60, 72, 75, 85Hz
XGA	1024x768	RGBHV 50, 60, 70, 75, 85Hz
WXGA	1280x768	RGBHV 50, 60Hz
SXGA	1280x1024	RGBHV 50, 60Hz
480p	852x480	RGBHV 50, 60Hz
576p	852x576	RGBHV 50, 60Hz
720p	1280x720	RGBHV 50, 60Hz
1080i	1920x1080 (i)	RGBHV 50, 60Hz (Note 2)

Output Format

1T-TG-PCHD	Analog: RGBHV, YPbPr via HD15
1T-TG-DVI	DVI-I: RGBHV via DVI-I Connect

Test Patterns

Color Bars	Color Bars/Multi-Burst (2 types)
Grayscale-Light>Dark	Multi-Burst (Note 3)
Grayscale-Dark>Light	Checkerboard
Fade - Black to White	White, Yellow or Cyan Field
Cross Hatch - Standard	Green, Magenta or Red Field
Cross Hatch - Small	Blue or Black Field
Alt. 1 Pixel B/W Lines	H or E Pattern
Alt. 2 Pixel B/W Lines	Large Circle
Alt. 3 Pixel B/W Lines	Circles - Repeating
Alt. 4 Pixel B/W Lines	Chinese Characters (3x)

Mechanical

1T-TG-PCHD (H-W-D)	30x133x76mm (1.2"x5.25"x3")
1T-TG-DVI (H-W-D)	30x146x76mm (1.2"x5.75"x3")
Weight (Net)	280 g (0.63 lbs)

Environmental

Operating Temperature	0° to +50° C (+32° to +122° F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-10° to +60° C (+14° to +140° F)
Storage Humidity	10% to 90%, Non-condensing

Power Requirement

External Power Supply	5VDC@2A - Locking DC

Regulatory Approvals

Amplifier Units	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Warranty

Limited Warranty	2 Years Parts and Labor

Accessories Included

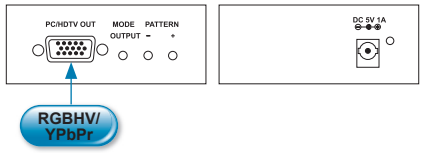
1x Power Adapter	US, UK or Euro
1x Operations Manual	

Notes

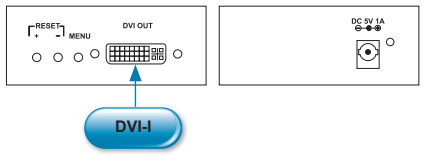
(1) 1T-TG-PCHD also has YPbPr out for HDTV Resolutions.
(2) The 1080i is actually a doubled 540p signal, which is recognized as a 1080i by most HDTV Displays.
(3) Not a true Multi-Burst. Alternating B/W Vertical Lines.

Control Interface | Input | Output | Input/ Output

1T-TG-PCHD



1T-TG-DVI



LCD Monitors

TV One's LCD Monitors are available in a wide variety of screen sizes and configurations to satisfy most applications. All LCD panels used are top grade, professional products. High brightness and contrast ratios are standard features, along with wide viewing angles.

LCD Panel Comparison Chart

Model	LM-1750HD	LM-1911R	LM-1511R	LM-1042R	LM-701M	LM-401M
LCD PANEL						
Screen Size (Diagonal)	17.1" (434mm)	19" (482mm)	15" (381mm)	10.4" (264mm)	7.0" (178mm)	4.0" (100mm)
Number of Screens	1	1	1	2	1	1
Aspect Ratio	16:9	5:4	4:3	4:3	4:3	16:9
Panel Resolution	1400x900	1280x1024	1024x768	800x600	480x234	1440x234
Color Resolution	16.7 million	256K	256K	256K	256K	256K
Contrast Ratio	800:1	500:1	450:1	400:1	200:1	200:1
Brightness	250cd/m²	250cd/m²	330cd/m²	230cd/m²	250cd/m²	250cd/m²
View Angle - Horizontal	160°	160°	130°	110°	90°	90°
View Angle - Vertical	160°	160°	100°	80°	40°	40°
VIDEO INPUTS						
Composite Video	2 via BNC	2 via BNC	2 via BNC	1 via BNC	2 via RCA	2 via RCA
YC (S-Video)	1 via 4-Pin	1 via 4-Pin	1 via 4-Pin	1 via 4-Pin		
Analog RGBHV (PC)	1 via HD15	1 via HD15	1 via HD15	1 via HD15		
Component (YUV/YPbPr)	1 via 3-BNC					
HDMI	1 via HDMI					
SD/HD-SDI	1 via BNC					
VIDEO OUTPUTS						
Composite Loop-thru		1 via BNC	1 via BNC	2 via BNC	1 via RCA	1 via RCA
Reclocked SD/HD-SDI	1 via BNC					
VIDEO RESOLUTIONS						
SDTV	480i, 576i					
HDTV - Maximum	1080p					
PC - Maximum	1400x900	1280x1024	1024x768	800x600		
TV Standards	PAL-NTSC-SECAM	PAL-NTSC	PAL-NTSC	PAL-NTSC	PAL-NTSC	PAL-NTSC
VIDEO ADJUSTMENTS						
Contrast	✓	✓	✓	✓	✓	✓
Brightness	✓	✓	✓	✓	✓	✓
Sharpness	✓	✓	✓	✓		
Color	✓	✓	✓	✓	✓	✓
Hue	✓	✓	✓	✓	✓	✓
Black Stretch	✓					
AUDIO INPUTS						
Analog	5 Stereo	4 Stereo	4 Stereo		1 Mono	1 Mono
AUDIO ADJUSTMENTS						
Volume	✓	✓	✓			
Balance	✓					
Bass	✓					
Super Bass	✓					
Treble	✓					
FEATURES						
Rack Mount	7RU	9RU	8RU	5RU	No	No
Wall Mount (or other)	VESA	VESA	VESA	No	VESA	Tripod
Power	12VDC	86-256VAC	86-256VAC	12VDC	12VDC	12VDC

LM-1750HD

LCD Color Monitor

Key Features of the LM-1750HD

- Inputs: SD/HD-SDI, HDMI, Analog RGBHV, Component, Composite and YC
- Resolutions up to 1400x900, 1080p
- High Brightness, Pro Grade LCD Panels
- 16.7 Million Colors
- 5x Stereo Audio Inputs
- Blue Only & Sync Delay modes for setup
- Tally LED's
- 160° Left/Right & Up/Down Viewing Angles
- Vertically Tiltable Rackmount Housing
- Locking External DC Power Supply

LM-1750HD is a high performance Multi-format 17" Color LCD Monitor for the broadcast and professional market. A multitude of video signal formats may be accurately monitored. The high brightness, wide viewing angle, excellent contrast ratio and high definition color result in an outstanding image. The unit features inputs for SDI (either SD or HD) with an active output, HDMI, Analog RGBHV, YUV or YPbPr Component Video and 2x Composite Video. An YC input is available and can be used in lieu of one of the Composite inputs. NTSC and PAL Television Standards are supported and automatically detected. Five Stereo inputs are also provided and dual internal speakers driven by a 3 watt amplifier provide stereo audio monitoring capability. Front panel Tally LED's can be activated external via the DB9 connector.

The Menu contains all the necessary controls to adjust Contrast, Brightness, Sharpness, Color, Hue, Black Stretch and other parameters necessary for optimum monitor performance. Results of these adjustments can be viewed via the On Screen Display. A Sync Delay (Pulse Cross) mode allows viewing of the vertical and horizontal sync and vertical blanking intervals. A Blue Only mode facilitates accurate monitor setup when viewing color bars.

The metal case has a standard VESA mount on the rear panel. A rackmount kit is included that can tilt up or down. Although the monitor has excellent viewing angles, the tilt feature can be beneficial when circumstances necessitate mounting the monitor considerably above or below normal eye level.

LM-1750HD Specifications

LCD Panel

Display Size - Diagonal	17.1" (434mm)
Display Area	14.45"x 9" (367.2 x 229.5mm)
Panel Resolution	1440x900
Dot Pitch	0.255mm
Color Resolution	16.7 Million Colors
Contrast Ratio	800:1
Brightness	250 cd/m2
Respone Time	8 msec
Left/Right View Angle	160°
Up/Down View Angle	160°
Aspect Ratio	16:9

Video Inputs

SD/HD-SDI	1x via BNC with Active Output
HDMI	1x via HDMI Type A
Analog RGBHV	1x via HD-15 Female
Composite Video	2x via BNC Connectors
YC (S-Video)	1x via 4-Pin Mini-DIN Connector
YUV/YPbPr Component	1x via 3 BNC Connectors

SD/HD-SDI Input Range

SDTV	480i, 566i
HDTV	480p, 576p, 720p, 1080i, 1080p/30
625i	720x625i @ 50Hz
525i	720x525i @ 59.94Hz
	720x525i @ 60Hz ,
720p	1920x720P @ 50Hz
	1920x720P @ 59.94Hz
	1920x720P @ 60Hz
1035i	1920x1035i @ 59.94Hz
1080i	1920x1035i @ 60Hz
	1920x1080i @ 50Hz,
	1920x1080i @ 59.94Hz
	1920x1080i @ 60Hz
1080p	1920x1080PSF @ 23.98Hz
	1920x1080PSF @ 24Hz
	1920x1080P @ 23.98Hz
	1920x1080P @ 24Hz
	1920x1080P @ 25Hz
	1920x1080P @ 29.97Hz
	1920x1080P @ 30Hz

HDMI Input Range

SDTV	480i, 576i
HDTV	480p, 576p, 720p, 1080i, 1080p

Analog Component Input Range

SDTV – YUV	480i, 576i
HDTV - YPbPr	480p, 576p, 720p, 1080i, 1080p

Analog RGBHV Input Range

640x350	70, 85Hz
720x350	70, 85Hz
640x400	56, 70, 85Hz
720x400	70, 85Hz
640x480	60, 66, 72, 75, 85Hz
800x600	56, 60, 70, 72, 75, 85Hz
1024x768	60, 70, 72, 75, 85Hz
1152x864	60, 70, 72, 85Hz
1440x900	60, 70, 72, 85Hz

Composite & S-Video Input Range

Vert. Frequency	NTSC 60Hz, PAL 50Hz
Horiz. Frequency	NTSC 15.75KHz, PAL 15.625KHz

Audio Inputs

Stereo Audio	4x via 2 RCA Connectors (R/L)
Computer Audio	1x via 3.5mm Mini-Stereo Jack

Tally Control

Tally Input	1x via DB9 Connector

General

Display Element	Active Matrix TFT
Video Adjustments	Brightness, Contrast, Sharpness, Color, Hue, Black Stretch
Menu Languages	English, French, German, Portuguese
TV Standards	NTSC/ PAL/SECAM Auto-detect
Color Depth	24 bit
Aspect Ratio Modes	16:9, 4:3, 1:1
HDMI Compliance	Version 1.2
SD-SDI	270Mbps (525/625 Line)
HD-SDI	1.485, 1.4835Gpbs
Blue Only Mode	For Setup with Color Bars
Sync Delay Mode	For Checking Sync
Speakers	Internal – Right & Left Channel
Audio Controls	Volume, Balance, Bass, Treble, Super Bass

Front Panel Control Buttons

Menu Navigation	Menu, Left, Right, Up, Down
Input Select	HDMI, PC, YPbPr, SDI, AV1, 2
Power	On/Off

Limited Warranty

Unit, except LCD	1 Year Parts and Labor
LCD Panel	Panel Manufacturer's Terms

Mechanical – With Rackmount

Size (H-W-D)	483.5x310x59.7mm(19"x12.25"x2.33")
Weight (Net)	9.0 kg (19.8 lbs)
Rackmount	7RU - Tilt Up/Down

Mechanical – Without Rackmount

Size (H-W-D)	437x300x59mm(17.2"x11.8"x2.3")
Weight (Net)	8.0 kg (17.6 lbs)
Wall Mount	VESA Standard

Environmental

Operating Temperature	-10° to +50° C (+14° to +122° F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-10° to +60° C (-14° to +140° F)
Storage Humidity	10% to 90%, Non-condensing

Power Requirement

External Power Supply	12VDC @ 4A

Regulatory Approvals

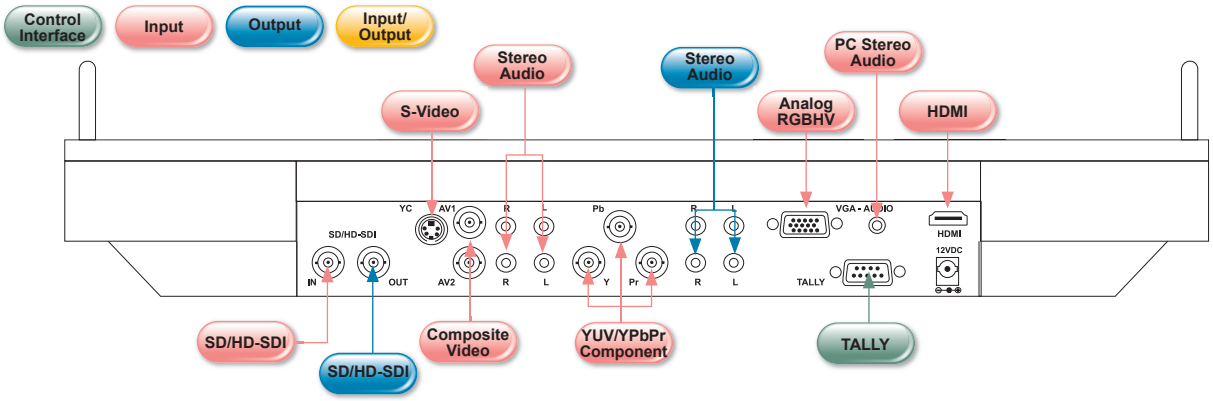
Monitors	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Accessories Included

1x Power Adapter	US, UK or Euro
1x Operations Manual	
4x Rackmount Screws	
1x Set Rackmount Ears	Tiltable Configuration

Product Item Numbers

LM-1750HD	17" Rackmount Monitor



LM-1911R, LM-1511R

LCD Color Monitors

Key Features LM-1911R, LM-1511R

- Computer Input up to SXGA for LM-1911R
- Computer Input up to XGA for LM-1511R
- High Brightness, Pro Grade LCD Panels
- Dual Composite, YC & Stereo Inputs
- Built in Power Supply
- Wide Left/Right & Up/Down Viewing Angles
- Vertically Tiltable Rackmount Housing
- Integrated Swivel Stand for Table Top Use

LM-1911R and **LM-1511R** are high performance Color LCD Monitors for the professional market. Their respective sizes are 19" and 15" diagonally and they are housed in unique rackmount housings that tilt up or down to optimize the viewing angle. This is particularly beneficial when circumstances necessitate that the monitors be mounted above or below normal eye level. Also included is an integrated swivel stand on the rear of both units to allow table top use if desired. Both models feature high brightness, Active Matrix LCD Displays with wide viewing angles and excellent contrast ratios. They are flicker-free, low radiation, space saving and feature low power consumption. NTSC and PAL Television Standards are supported and automatically detected.

Both models have two Composite Video, one YC and two Stereo Audio Inputs. The Composite Video Inputs are automatically terminated. Also, a PC input is provided and can accommodate resolutions up to SXGA for the LM-1911R and XGA for the LM-1511R. Dual built in speakers are driven by 2 watt amplifiers to provide stereo audio monitoring capabilities. The unit's Menu contains all the necessary controls to adjust Contrast, Brightness, Color, Hue and other parameters necessary for optimum monitor performance. Results of these adjustments can be viewed via the OSD

LM-1911R, LM-1511R Specifications

LCD Panel	LM-1911R	LM-1511R
Display Size - Diagonal	19" (48.2cm)	15" (38.1cm)
Panel Resolution	1280x1024	1024x768
Contrast Ratio	500:1	450:1
Brightness	250 cd/m2	330 cd/m2
Left/Right View Angle	160°	130°
Up/Down View Angle	160°	100°
Aspect Ratio	5:4	4:3
PC Input Range	**SXGA (LM-1911R)**	**XGA (LM-1511R)**
Maximum Resolution	1280x1024	1024x768
Vertical Freq Range	60~75Hz	56~75Hz
Horizontal Freq Range	31.5-80KHz	31.5-80KHz

Inputs	
Composite Video	2x via Looping BNC Connectors
YC (S-Video)	1x via 4-Pin Mini-DIN Connector
Stereo Audio	2x via 2 RCA Connectors (R/L)
Computer	1x via HD-15 Female
Computer Stereo Audio	1x via 3.5mm Mini-Stereo Jack

Video Input Range	NTSC	PAL
Vertical Frequency	60Hz	50Hz
Horizontal Frequency	15.75KHz	15.625KHz

General	
Display Element	Active Matrix TFT
Video Adjustments	Brightness, Contrast, Color, Hue
Speakers	Internal – Right & Left Channel
TV Standards	NTSC/ PAL/SECAM Auto-detect

Front Panel Controls	
Left, Right Buttons	Menu Navigation and Control
Audio Volume	Increase/Decrease (Note 1)
Source Select Button	Toggle thru inputs
Power Button	On/Off Switch

Limited Warranty	
Unit, except LCD Panel	1 Year Parts and Labor
LCD Panel	Panel Manufacturer's Terms

Mechanical – In Rackmount		
LM-1911R	Size (H-W-D)	400x482x65mm (15.75"x19"x2.5")
	Weight (Net)	6.5 kg (14.2 lbs)
	Rackmount	9RU - Tilt Up/Down
LM-1511R	Size (H-W-D)	355x482x59mm (14"x19"x2.3")
	Weight (Net)	5.3 kg (11.6 lbs)
	Rackmount	8 RU - Tilt Up/Down

Mechanical – Without Rackmount		
LM-1911R	Size (H-W-D)	424x404x65mm(15.7"x16.7"x2.5")
	Weight (Net)	6.6 kg (13.6 lbs)
	Wall Mount	VESA Standard
LM-1511R	Size (H-W-D)	284x380x59mm(11.2"x14.9"x2.3")
	Weight (Net)	4.9 kg (10.8 lbs)
	Wall Mount	VESA Standard

Environmental	
Operating Temperature	-10° to +60° C (+14° to +140° F)
Operating Humidity	20% to 80%, Non-condensing
Storage Temperature	-20° to +70° C (-4° to +158° F)
Storage Humidity	20% to 80%, Non-condensing

Power Requirement	
Internal Power Supply	86-256 Volts AC, 50~60Hz

Regulatory Approvals	
Monitors	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Accessories Included

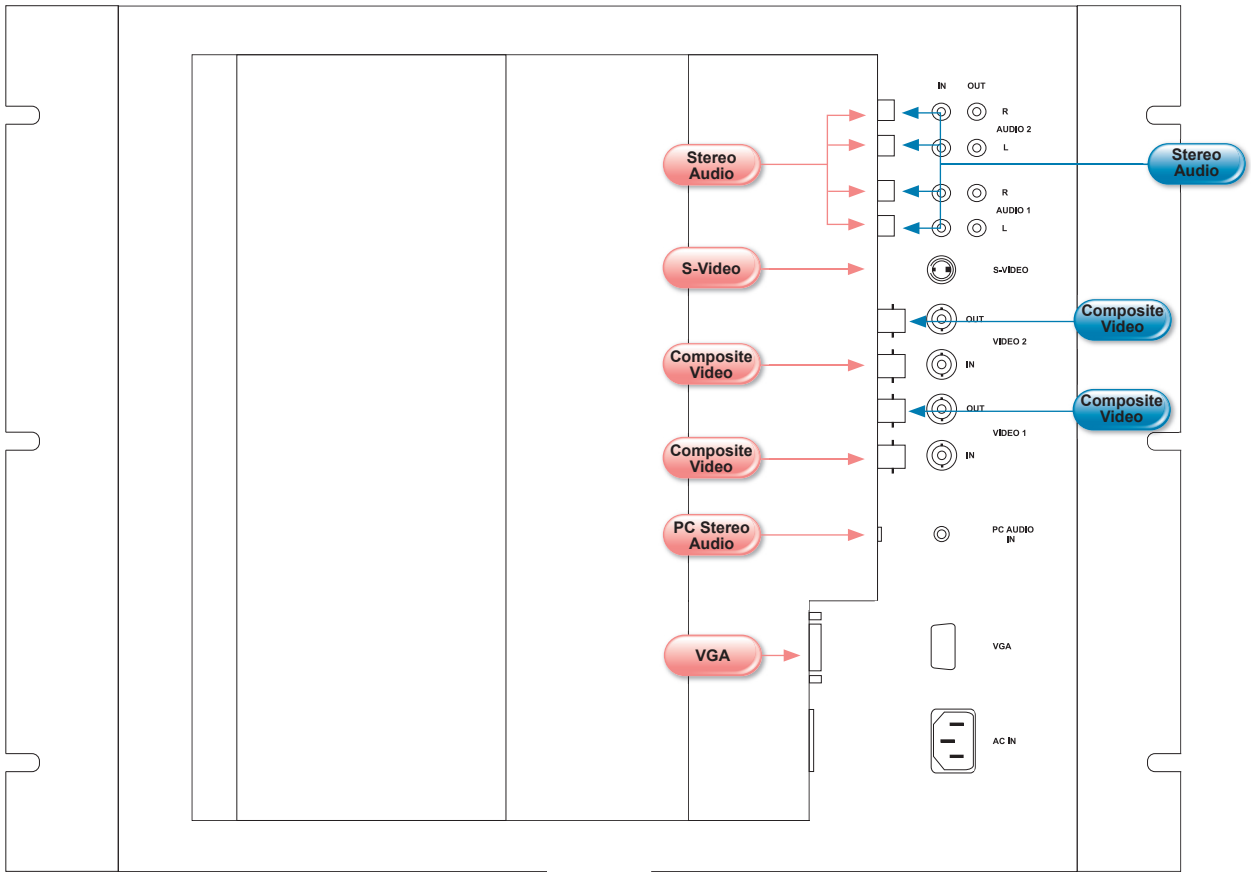
1x Operations Manual
4x Rackmount Screws
1x Set Rackmount Ears — Tiltable Configuration

Product Item Numbers	
LM-1901R	19" Rackmount Monitor
LM-1501R	15" Rackmount Monitor

Notes

(1) When not in the Menu Mode, the L/R Buttons are used.

Control Interface | Input | Output | Input/ Output



LM-1511R Panel illustrated - LM-1911R has same I/O configuration

LM-1042R

LCD Color Monitor

LM-1042R is a high performance Dual 10.4" Color LCD Multimedia Monitor in a rackmount housing, occupying only five RU of vertical space. The high Active Matrix Display features wide viewing angles, an excellent contrast ratio and high brightness. NTSC and PAL TV Standards are automatically detected. Each display has a looping Composite Video input on BNC connectors and a Computer input via HD15 that handles PC resolutions up to SVGA. A Universal AC Adapter is provided and is fitted with a Locking DC Plug for security of connection. For convenience, the Power Adapter can mount on the rear of the monitor housing with the bracket provided.

Input Expansion Modules provide greater input signal flexibility by increasing the range of PC resolutions, adding YPbPr HDTV or DVI inputs. The modules can be added to either or both displays. The modules automatically detect the input resolution and format and each has its own integral video processor to provide additional control over many signal parameters. The module's output is connected to either the monitor's PC input or the Composite Video input. Input Expansion Modules are DC powered and a small In-Plug Power Adapter is included.

Key Features LM-1042R

- Composite Video In on BNC Looping
- PC In - up to SVGA
- Optional Input Range Extension Modules
- High Brightness, Pro Grade LCD Panels
- Wide Viewing Angle
- Universal Power Adapter
- Locking DC Power Plug

Key Features of the LM-1042-EXP1

- PC-HD Input Range Extension Module
- Automatic Input Signal Alignment
- PC up to WUXGA, 1080p
- All HDTV Resolutions
- RGBHV, YPbPr, YCbCr Formats In

Key Features of the LM-1042-EXP2

- DVI Input Range Extension Module
- Automatic Input Signal Alignment
- PC up to SXGA, including WXGA
- All HDTV Resolutions
- RGBHV, YPbPr Formats In

LM-401M, LM-701M

LCD Color Monitors

LM-401M and **LM-701M** LCD Color Monitors feature 4" and 7" diagonal Active Matrix Liquid Crystal Displays, offering high brightness and wide viewing angles. They have two Composite Video Inputs and NTSC or PAL standards are automatically detected. The image on the screen can be reversed with switches provided on the units. A Mono Audio Input is provided and a Headphone Jack on the front panel allows for audio monitoring. Both units feature Audio and Video line outputs. Both models are housed in metal cases for field work, making them highly portable. They are powered by 12VDC and an AC Adapter is included. Standard VESA mounting holes are provided on the rear panel of the LM-701M. Both models are flicker-free, low radiation, light weight, space saving monitors that feature low power consumption. The LM-701M includes a tiltable sunshade for improved viewing in bright areas and for desk mount.

LM-1042R Monitor Specifications

LCD Panels

Number of Displays	2x
Display Element	Active Matrix TFT
Aspect Ratio	4:3
Display Size	2x 10.4" (26.4cm) Diagonal
Panel Resolution	800x600
Contrast Ratio	400:1
Brightness	230 cd/m2
Response Time	45ms
Left/Right View Angle	110°
Up/Down View Angle	80°

Inputs – Per Display

Composite Video	1x via BNC Connector (Looping)
Computer	1x via HD-15F Connector

PC Input Range

Maximum Resolution	800x600 (w/o Input Exp Module)
Vertical Freq Range	50-75Hz
Horizontal Freq Range	31-75KHz

Controls – Per Display

Video Adjustments	Brightness, Contrast, Color
Source Selection	Composite or PC
Power	On/Off Switch

General

TV Standards	NTSC - PAL Auto-detect
Vertical Frequency	NTSC:60Hz, PAL:50Hz
Horizontal Frequency	NTSC:15.75KHz, PAL:15.625KHz

Limited Warranty

Unit, except LCD Panel	1 Year Parts and Labor
LCD Panel	Panel Manufacturer's Terms

Mechanical

Size (H-W-D)	222x482x76mm (8.75"x19"x3")
Weight (Net)	4.3 kg (9.5 lbs)
Rackmount Type	5 RU - Fixed

Environmental

Operating Temperature	-10° to +50° C (+14° to +122° F)
Operating Humidity	20% to 80%, Non-condensing
Storage Temperature	-20° to +60° C (-4° to +140° F)
Storage Humidity	20% to 80%, Non-condensing

Power Requirement

External Power Supply	12VDC@ 2A - Locking DC (Common PS for both Displays)

Regulatory Approvals

Monitors	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Product Item Number

LM-1042R	Dual 10.4" Rackmount Monitor

Accessories Included

1x Operations Manual	
4x Rackmount Screws	
1x Power Adapter	US, UK or Euro
1x PS Mounting Bracket	Power Adapter to Back of Unit

LM-401M, LM-701M Specifications

Display	LM-401M	LM-701M
Display Size	4.0" (10cm)	7.0" (17.8cm)
Panel Resolution	480x234	1440x234
Active Area	82.1x61.8mm	154.1x86.58mm
Left/Right View Angle	45°	45°
Up/Down View Angle	10°/30°	10°/30°

Inputs

Composite Video	2x via RCA Connectors
Mono Audio	1x via RCA Connector

General

Display Element	Active Matrix TFT
Brightness	250 cd/m2
Contrast Ratio	200:1
TV Standards	NTSC-PAL Auto-detect
Vertical Frequency	NTSC:60Hz, PAL:50Hz
Horizontal Frequency	NTSC:15.75KHz, PAL:15.625KHz
Video Monitoring	Via RCA Connector
Audio Monitoring	Via 3.5mm Jack (LM-401M)

Controls

Image Reverse	Via Switch
Image Adjustments	LM-401M=Knobs, LM-701M=Menu
OSD Menu Display	Switch (LM-701M Only)
Video Input	Video 1-Video 2 Switch
Power	On/Off Switch

Mechanical

LM-401M	Size (H-W-D)	115x139x36mm (4.5"x5.5"x1.4")
	Weight (Net)	450 g (1 lb)
LM-701M	Size (H-W-D)	136x195x36mm (5.3"x7.6"x1.4")
	Weight (Net)	780 g (1.7 lbs)
LM-401 Mounting		Tripod Thread Hole
LM-701 Mounting		VESA Standard

Environmental

Operating Temperature	0° to +60° C (+32° to +140° F)
Operating Humidity	10% to 85%, Non-condensing
Storage Temperature	-20° C to +70 ° C (-4° to +158° F)
Storage Humidity	10% to 85%, Non-condensing

Power Requirement

External Power Supply	+12VDC

Regulatory Approvals

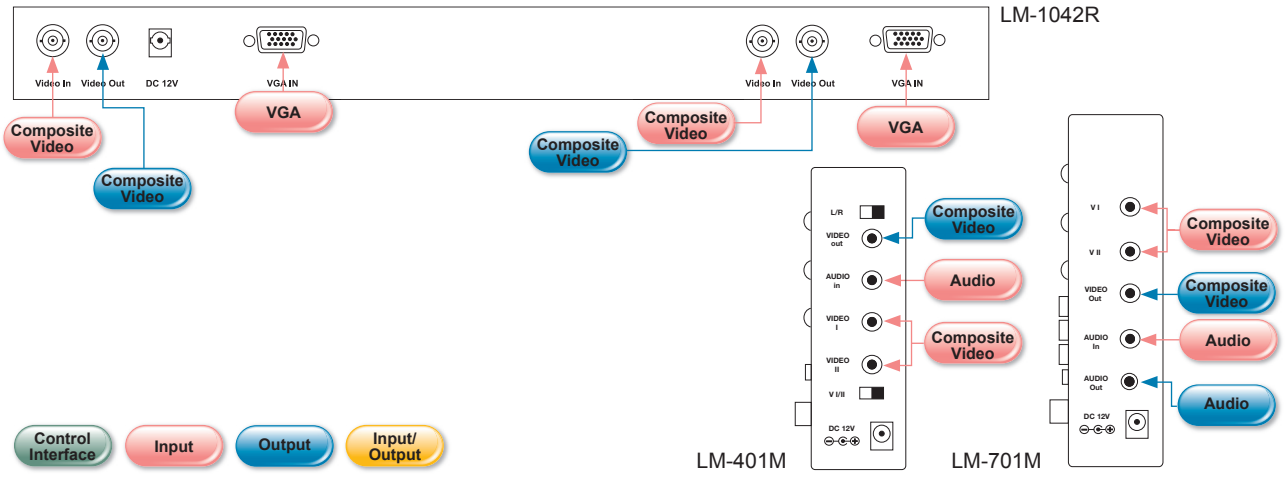
Monitors	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Accessories Included

1x Operations Manual	
1x Sunshade, Stand	LM-701M Only
1x Power Adapter	US, UK or Euro

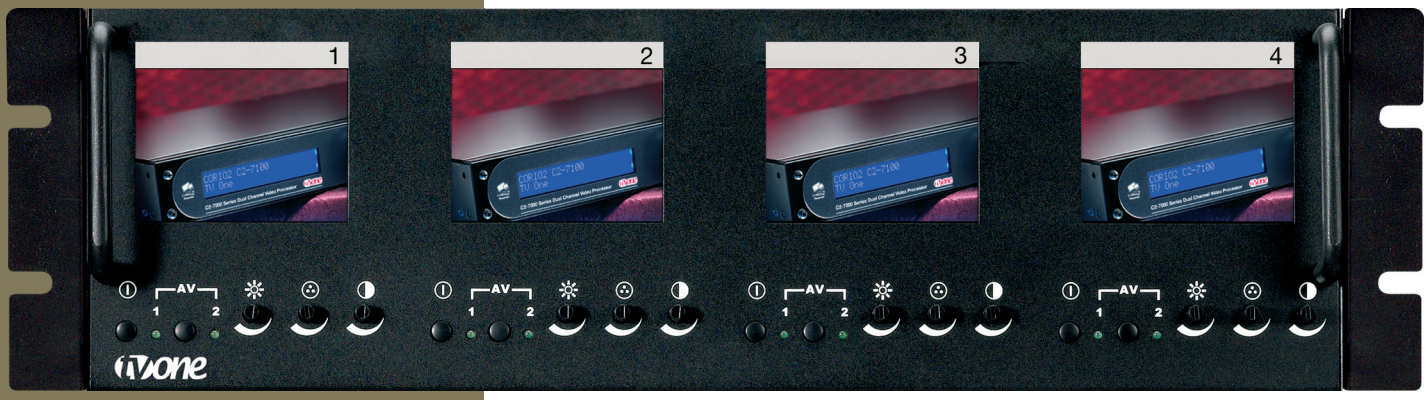
Limited Warranty

Unit, except LCD Panel	1 Year Parts and Labor
LCD Panel	Panel Manufacturer's Terms



LM-563R, LM-404R

LCD Color Monitors



Key Features LM-563R and LM-404R

- Vertically Tiltable Rackmount Housing
- Multiple Display Sizes and Configurations
- Composite (via BNC) & YC(S-Video) Inputs
- High Brightness, Professional Grade LCDs
- Wide Horizontal Viewing Angle
- Rear Mounting Universal AC Power Adapter
- Locking DC Power Plug for Security

LM-563R and **LM-404R** are high performance Color LCD Monitors in unique rackmount housings that tilt up or down to optimize the viewing angle. This is particularly beneficial when circumstances necessitate that the monitors be mounted above or below normal eye level. All models feature high brightness, Active Matrix LCD Displays with wide viewing angles and excellent contrast ratios. They are flicker-free, low radiation, light weight, space saving and feature low power consumption. Each model is powered by a single 12VDC power source. A Universal AC Adapter is provided and is fitted with a Locking DC Plug for security of connection. For convenience, the Power Adapter can mount on the rear of the monitor housing with the bracket provided. NTSC and PAL TV Standards are automatically detected. A Mirror Image Switch to horizontally reverse the image is provided on the rear panel for each individual display.

LM-563R is a high performance Triple Color LCD Monitor featuring three 5.6” displays, each with a Composite Video and an YC input.

LM-404R is a high performance Quad Color LCD Monitor featuring four 4.0” displays, each with a Composite Video and an YC input.

LM-563R, LM-404R Specifications

Video Inputs – Per Display

Composite Video	1x via BNC Connector
YC (S-Video)	1x via 4-Pin Mini-DIN Connector

Controls – Per Display

Mirror Image Switch	Right to Left Reverse
Video Adjustments	Brightness, Contrast, Color
Source Selection	Composite or S-Video Input
Power	On/Off Switch

General

Aspect Ratio	4:3
Display Element	Active Matrix TFT
TV Standards	NTSC - PAL Auto-detect
Vertical Frequency	NTSC:60Hz, PAL:50Hz
Horizontal Frequency	NTSC:15.75KHz, PAL:15.625KHz

Limited Warranty

Unit, except LCD Panel	1 Year Parts and Labor
LCD Panel	Panel Manufacturer's Terms

Mechanical

Size (H-W-D)	133x482x76mm (5.25"x19"x3")
Weight (Net)	2 kg (4.4 lbs)
Rackmount Type	3 RU - Tilt Up/Down

Environmental

Operating Temperature	0° to +48° C (+32° to +120° 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

Power Requirement

External Power Supply	12VDC@1A - Locking DC (Common PS for all Displays)

Regulatory Approvals

Monitors	FCC, CE, RoHS
Power Supplies	UL, CUL, CE, PSE, GS, RoHS

Accessories Included

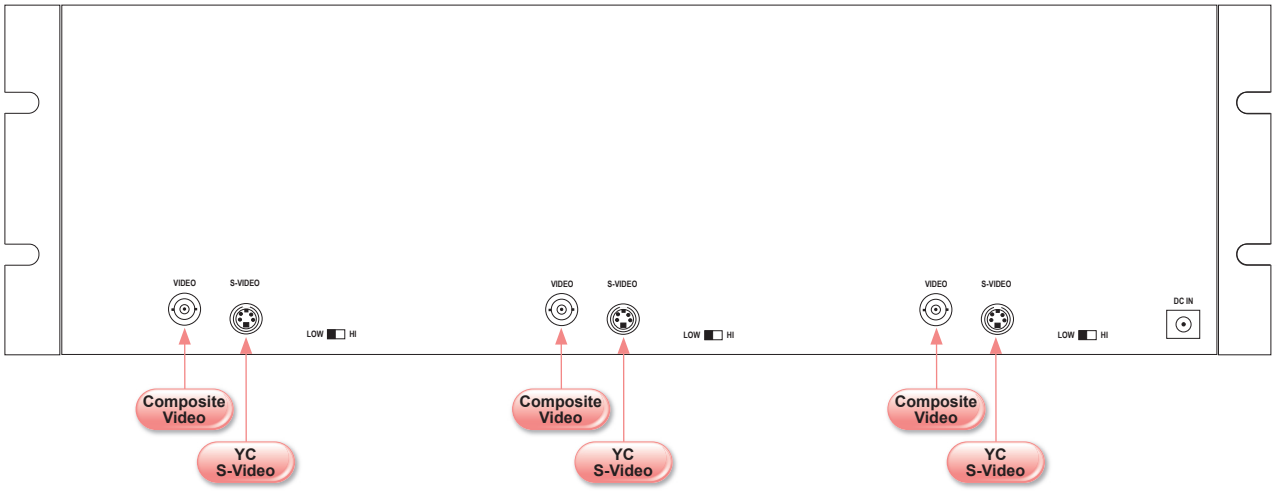
1x Operations Manual	
4x Rackmount Screws	
1x Set Rackmount Ears	Tiltable Configuration
1x Power Adapter	US, UK or Euro
1x PS Mounting Bracket	Power Adapter to Back of Unit

Product Item Numbers

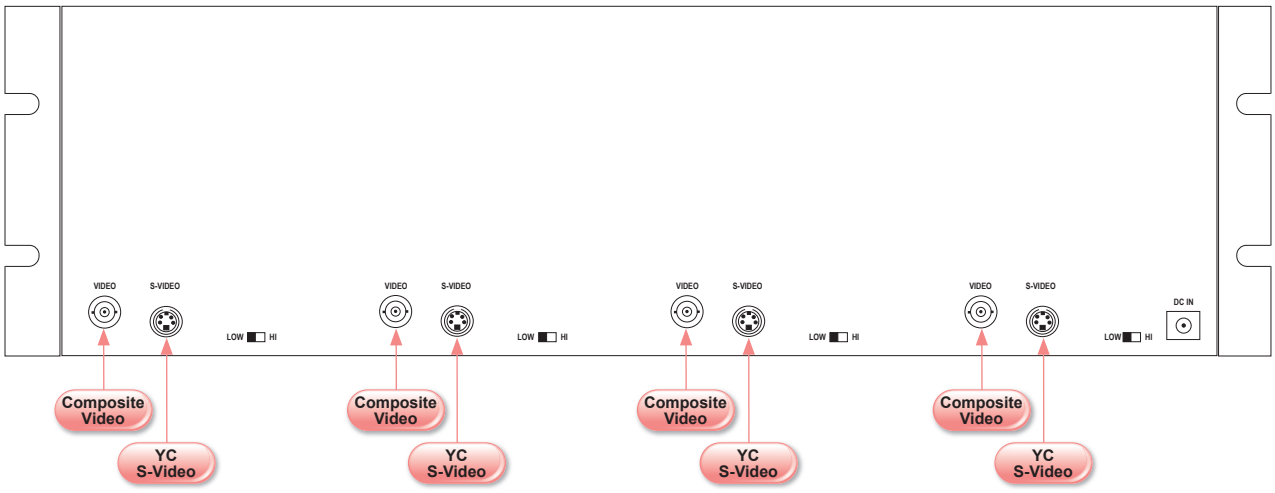
LM-563R	Triple 5.6" Rackmount Monitor
LM-404R	Quad 4.0" Rackmount Monitor

Control Interface | Input | Output | Input/ Output

LM-563R

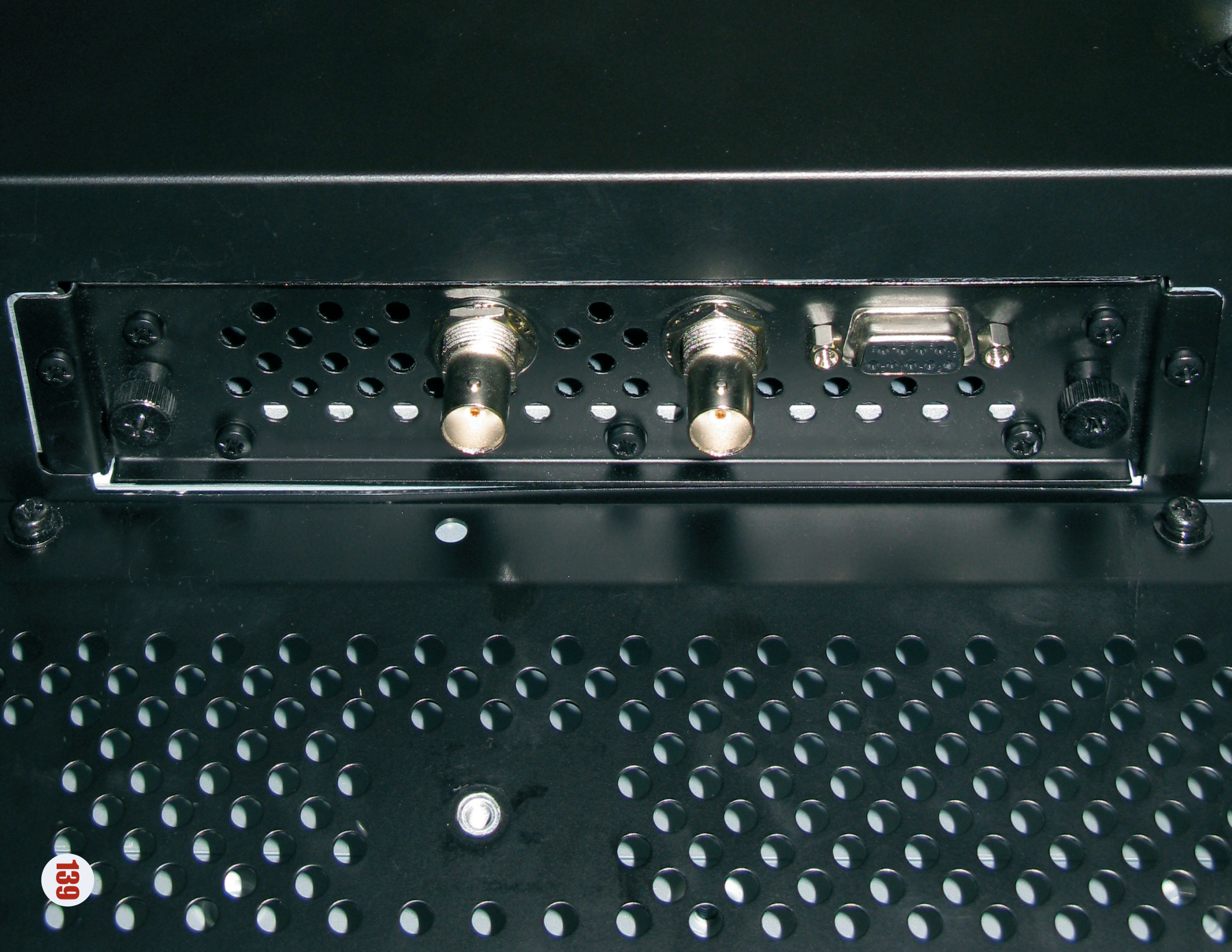


LM-404R



Custom and OEM Products

If your company has a unique application or requires somewhat different features than are available in our standard scan converter or video scaler models, we are experienced in providing custom products. TV One has developed custom solutions for a large number of clients, for both high and modest quantity requirements. Past projects have ranged from providing minor software modifications to an existing model to designing and manufacturing completely new products for the mass market.



General Information

LIMITED WARRANTY – With the exceptions noted in the next paragraph, TV One warrants the original purchaser that the equipment it manufactures or sells will be free from defects in materials and workmanship for a period of two years from the date of purchase. Should this product, in TV One's opinion, prove defective within this warranty period, TV One, at its option, will repair or replace this product without charge. Any defective parts replaced become the property of TV One. This warranty does not apply to those products which have been damaged due to accident, unauthorized alterations, improper repair, modifications, inadequate maintenance and care, or use in any manner for which the product was not originally intended.

Items integrated into TV One products that are made by other manufacturers, notably computer hard drives and liquid crystal display panels, are limited to the term of the warranty offered by the respective manufacturers. Such specific warranties are available upon request to TV One.

If repairs are necessary under this warranty policy, the original purchaser must obtain a Return Authorization Number from TV One and return the product to a location designated by TV One, freight prepaid. After repairs are complete, the product will be returned, freight prepaid.

LIMITATIONS - All products sold are "as is" and the above Limited Warranty is in lieu of all other warranties for this product, expressed or implied, and is strictly limited to two years from the date of purchase. TV One assumes no liability to distributors, resellers or end-users or any third parties for any loss of use, revenue or profit.

TV One makes no other representation of warranty as to fitness for the purpose or merchantability or otherwise in respect of any of the products sold. The liability of TV One with respect to any defective products will be limited to the repair or replacement of such products. In no event shall TV One be responsible or liable for any damage arising from the use of such defective products whether such damages be direct, indirect, consequential or otherwise, and whether such damages are incurred by the reseller, end-user or any third party.

PRODUCT RETURN POLICY – TV One strives for total customer satisfaction and will provide the best technical support available in the industry. We also understand that occasionally a customer may wish to return a product because it does not function in the manner desired, even though it is functioning according to specification. If the item has been purchased within 30 days and returned in original condition, we will either issue full credit for the original product to be used against the purchase of another product or refund the purchase price excluding shipping charges. If the item does not arrive to us in original condition, it will be returned to the customer without credit or refund. To return a product, contact our sales support staff for a Return Authorization number. No products will be accepted without a valid Return Authorization number.

RoHS

RoHS STATEMENT OF COMPLIANCE - Since 1 July 2006, the European Union (EU) directive 2002/95/EC, known as the "Restrictions on the use of Hazardous Substances in electronic equipment" or RoHS for short, has banned the sale of new electrical and electronic equipment containing more than agreed levels of lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE) flame retardants. TV One has invested heavily in modern state of the art manufacturing facilities to meet and exceed the requirements of RoHS and all TV One and One-task products comply with the RoHS Directive.

ISO 9001 Registered Firm	International Accreditation Board
Certificate No. GB2002138	Registration No. 0044/1

ISO 9001:2000 CERTIFICATION - TV One Ltd is ISO 9001:2000 certified for the Design, Manufacture, Test and Distribution of Audio Video products. TV One's ISO 9001:2000 certificate number is GB2002138.

ISO (International Organization for Standardization) is the source of the ISO 9000 and ISO 14000 families of quality and environmental management standards and it has also developed some 15,000 International Standards for business, government and society. These strict guidelines that TV One Ltd adhere to, insure that the processes that influence product and service quality are of the highest possible standard.

RESOLUTION TABLE

Name	Resolution	Aspect Ratio
QUXGA	3200 x 2400	4:3
QSXGA+	2800 x 2100	4:3
QSXGA	2560 x 2048	5:4
QXGA	2048 x 1536	4:3
WUXGA	1920 x 1200	16:10
WSXGA+	1680 x 1050	16:10
UXGA	1600 x 1200	4:3
SXGA+	1400 x 1050	4:3
SXGA	1280 x 1024	5:4
QVGA	1280 x 960	4:3
WXGA	1280 x 800	16:10
XGA	1024 x 768	4:3
SVGA	800 x 600	4:3
VGA	640 x 480	4:3
1080i	1920 x 1080	16:9
1080p	1920 x 1080	16:9
720p	1280 x 720	16:9
EDTV	852 x 480	16:9
576i	720 x 576	4:3
576p	720 x 576	4:3
480i	720 x 480	4:3
480p	720 x 480	4:3

Glossary

4:4:4 - means that the three component signals (luminance Y and the two difference signals U and V, also known as Pb and Pr) are sampled at the same rate as each other.
4:2:2 - means that the three component signals (luminance Y and the two color-difference signals U and V, also known as Pb and Pr) are sampled differently, with U and V sampled at half the rate of the Y signal. Generally this is done to reduce the amount of data required to transmit/store/process the signal by 33%.
4:1:1 - means that the three component signals (luminance Y and the two color-difference signals U and V, also known as Pb and Pr) are sampled differently, with U and V sampled at a quarter the rate of the Y signal. Generally this is done to reduce the amount of data required to transmit/store/process the signal by 50%.
AES3-id - An AES Audio subset for broadcast applications and long distance runs using unbalanced coaxial cable
AES Audio - AES (Audio Engineering Society) is the name of a digital audio transfer standard
Alpha Channel - An extra video layer channel sometimes used in the keying process
Analog - A system whereby brightness, loudness or color is represented by a varying voltage with no limits to resolution
Ancillary Data - Non-video content within an SDI signal used for embedded audio, closed captions, etc.
Artifacts - Spurious bits of unwanted information resulting from analog to digital conversion
Aspect Ratio - The width-to-height ratio of an image
ATSC - Advanced Television Systems Committee, an over-the-air broadcast system for digital television in the US and Canada
Audio Breakaway - The ability to separate audio signals for switching independently of video
Audio Follow Video - A term used when audio is tied to a video signal and then switched together
AutoSet - TV One's proprietary technology that automatically sizes and positions the computer image to fit exactly on the display
AV, A/V - Audio Visual or Audio Video
Balanced Audio - A method of interconnecting audio equipment using impedance-balanced lines
Bandwidth - A measure of the width of a range of frequencies a device will pass, measured in Hertz: or a rate of data transfer, measured in bits per second
Blackburst - An analog video signal with no video information above the black level, often used to genlock signals
Black Level - a DC voltage component of the video signal that corresponds to a black picture
BNC Connector - A twist and lock type of connector used for coaxial cable
Cat.5, Cat.5E, Cat.6 - A twisted pair cable type designed for high signal integrity: See also UTP
Chroma Key - A technique for mixing two images together, in which a color (or a small color range) from one image is removed (or made transparent), revealing another image behind it
Chrominance Channel - The element of a video signal containing the color information
Closed Captioning - A means of transporting text information within the video signal
Coaxial Audio - Digital audio transmission that uses an electrical cable consisting of an inner conductor and outer screen
Color Subcarrier - The color reference signal that is part of the analog video signal
Communications Protocol - The set of standard rules for data transmission
Comb Filter - A sophisticated filtering method used in decoding a composite video signal to separate its Luminance and Chrominance components
Component Video (YUV, YPbPr, YCbCr, YC) - A video signal in its component form with Luminance and Chrominance seperated
Composite Video - An all in-one video signal comprised of the luma (black and white), chroma (color), blanking pulses, sync pulses, and color burst
CORIO®, CORIO®2 - TV One's proprietary engineering technology
Cross Conversion - A method of scaling between resolutions of the same format, i.e. XGA to WUXGA
DA (Distribution Amplifier) - A device that provides multiple outputs from a single input
DARS - Digital Audio Reference Signal, used to synchronize audio to a common reference
db (Decibel) - A logarithmic unit of measure for expressing signal level
Desktop - A size reference of products meaning they are small enough to fit on a desk top
De-interlacing - Converting an interlaced signal to progressive scan
Delay - An expression of the different arrival time of signal components transmitted together
Differential Gain and Phase - Measures of non-linearity in video signals
Digital - A system of data or image values in the form of discrete, non-¬continuous codes, such as binary
DLP - Digital Light Processing, a technology used in light projection
Down Conversion - The process of decreasing the resolution of an image
Dual Channel - Two processing engines that allow two sources to be scaled within one unit
Dual Link DVI - A method of transmitting double the data for higher resolutions
Dual Link HD-SDI - SMPTE 424M standard (2.970Gbps) capable of 1080p
DV (Digital Video) - A format popular with camcorders, also called IEEE1394
DVI - Digital Video Interface, a standard designed to maximize the visual quality of digital display devices by transmitting a digital signal of four twisted pairs of wire (R, G, B and Clock) to transmit 24 bits per pixel
DVI-A - Digital Video Interface-Analog, a DVI standard containing only analog information
DVI-D - Digital Video Interface-Digital, a DVI standard containing only digital information
DVI-I - Digital Video Interface-Integrated, a DVI standard containing both analog and digital information
Edgeblending - A method used to create brighter, wider, taller or larger displays using multiple video/data projectors to create a single image
Embedded Audio - Audio enclosed with in the video stream, primarily in HDMI and SDI
EQ (Equalization) - A method of compensating for high frequency loss in long cable runs
Firmware - Digital data that is embedded in a hardware device
Format Conversion (Transcoding) - A method of converting one signal type to another without increasing or decreasing the image resolution
Genlock - A technique of synchronizing separate video sources together
GHz - Gigahertz, a unit for frequency measurement; 1GHz=1,000,000,000Hz
Gbps - Gigabits per second, a unit of data transfer rate; 1Gbps=1,000,000,000 bits per second
HD, High Definition - Video system of higher resolution than standard definition video, most commonly at display resolutions of 1280×720 (720p) or 1920×1080 (1080i or 1080p)
HD-SDI - High Definition Serial Digital Interface, a high definition digital video interface used for broadcast-grade video - 1.485Gbps
HDMI - High-Definition Multimedia Interface, a compact audio/video connector interface for transmitting uncompressed digital streams
HDCP - High Definition Content Protection, a digital video encryption method to prevent unauthorized duplication of copyrighted video material
HDTV - High-definition Television, a digital television broadcasting system with greater resolution than traditional television systems
Interlaced - A method of doubling the vertical resolution on a display by alternately displaying the odd and even scan lines
IP - Internet Protocol
Jitter - A term referring to instability in a signal
Keying - A term for compositing two full frame images together, by discriminating the visual information into values of color and light: See also Chroma Key and Luma Key
Layer - Referring to each individual image when multiple images are placed on one screen, such as a background video input, two windows containing video and logos etc.
LCD - Liquid Crystal Display, a is a thin, flat display device made up of any number of color or monochrome pixels arrayed in front of a light source or reflector
Locksource - Defines the source used while Genlocking
Loop-thru - A feature that allows the video signal to be passed through a device unprocessed and sent to a local monitor or other device
Luma Key - Applies transparency to regions (pixels) in an image which fall into a particular range of brightness
Luminance Channel – The component of a video signal carrying the black and white information
Matrix Switcher - An electronic device that accepts and distributes video (and/or audio) signals selected from multiple inputs and multiple outputs
Mbps - Megabits per Second, a unit of data transfer rate; 1Mbps=1,000,000 bits per second
MHz - Megahertz, a unit for frequency measurement; 1MHz=1,000,000Hz
Mix - The combining of two images on a single output, i.e. Picture in Picture
Multimedia - Any combination of multiple visual and aural media
Multi-viewer - A term use for a device that allows viewing of multiple images in windows on a single screen
Non-volatile Memory – A chip within a piece of hardware that can store and retain settings even when the unit is switched off
NTSC, PAL, SECAM - Analog television video standards used in various countries
Ohm - A measure of impedance in connectors or cables
Operating Temperature Range - The prescribed ambient temperature range for proper equipment operation
Operating Humidity Range - The prescribed relative humidity range for proper equipment operation
Overlay - A computer image is placed on top of a video picture or a video image is placed on top of a computer image and the top image is partly Keyed to reveal the source in the background
PC - Personal Computer
PCI/ISA - A computer bus for attaching peripheral devices or cards to a computer motherboard
PIP - Picture-in-Picture, when one image is displayed as full screen at the same time as another image is displayed in an inset window
Progressive Scan - A method of capturing and displaying an image on a screen in a path similar to text on a page: line by line, from top to bottom
Resolution - The number of horizontal and vertical pixels within an image. See chart on page 140
RF - Radio Frequency, Frequencies high enough to be transmitted in free space
RGB, RGBHV, RGBS, RGsB – An analog video signal containing separate chroma information (Red, Green and Blue) and sometimes separate sync information
RS-232 - Recommended Standard 232, a standard for serial binary data signals connecting between a DTE (Data terminal equipment) and a DCE (Data Circuit-terminating Equipment)
RU- Rack Units, a unit of measure for vertical space in equipment racks; 1 RU = 1.75" (44.5mm)
S-Video, (YC) - An analog video format that keeps luminance and chrominance separate
Sample Rate Conversion - Increasing or decreasing the number of samples per second taken from a continuous signal to make a discrete signal
Scaling - The process of changing the resolution or size of an image
Scan Conversion - A technique for changing or decreasing the vertical/horizontal scan frequency of a video signal
SD - Standard Definition
SDI - Serial Digital Interface, a digital video interface used for broadcast-grade video
SDTV - Standard Definition Television, a legacy television system that has normal resolution as opposed to newer HDTV (High Definition Television) or other forms of enhanced definition formats
Seamless Switching - A feature that causes a switcher to wait until the vertical interval to switch between sources avoiding glitches which can sometimes be seen when switching between sources
Signal-to-Noise Ratio (S/N) - A unit of measure comparing the level of the desired signal to the level of noise; generally, the higher the S/N, Ratio expressed in dB, the better
Single Link DVI - A digital transmission system of four twisted pairs of wire (R, G, B and Clock) to transmit 24 bits per pixel
SMPTE 259M - Standard Definition SDI (Serial Digital Interface) standard
SMPTE 292M - High Definition SDI standard
Storage Temperature Range - The prescribed ambient temperature range for safe storage
Storage Humidity Range - The prescribed relative humidity range for safe storage
Terminals (Terminal Blocks) - A convenient means of connecting individual electrical wires
THD - Total Harmonic Distortion, a measure of audio quality
TOSLINK / SPDIF Audio - Digital audio transmission that uses an optical cable to pass audio information between devices
Transitions - One image is replaced by another with a distinct edge that forms a shape
Tri-Level Sync - Describes the synchronization signal type present on HDTV YPbPr signals. It is used to provide a more accurate synchronization when decoding HDTV signals.
Unbalanced Audio - An audio signal that is carried on two wires (or three wires for stereo pair) with one wire at ground potential
Up Conversion - The process of increasing the resolution of an image
UTP - Unshielded Twisted Pair, also referred to as Cat.5/5E or Cat.6
Vertical Interval - The beginning lines of the video signal that is not visible on the screen
Vertical Interval Switching - Changing video sources in the vertical interval to avoiding visual glitches
Video Wall - An array of displays configured to show a single image spread over all displays
Widescreen - The general term used for aspect ratios greater than 4:3; usually 16:9 or greater
Window - An inset area within a display that can show a separate image
XLR Connector - An electrical connector design that are used mostly in professional audio and video electronics cabling applications
YPbPr - Progressive Scan Component video signal
YUV - Interlaced Scan Component video signal

Contact Information

Websites

www.tvone.com

www.tvone.eu

www.tvonela.com

www.tvoneasia.com

The TV One websites are designed with our customers in mind and are essentially virtual catalogs, always up to date with the latest product information. They are currently available in eight languages, with more being added regularly. But the differences in the websites goes beyond language, because content is tailored to location. There is a navigation bar at the top to facilitate finding the appropriate website for your country. Navigation is simple and follows the catalog's format and product section breakdown. The Product Selector Tool is invaluable in choosing the right product for the task. TV One websites are updated frequently and always contains the latest products, tradeshow locations, company news, installations and more.

Technical Support

www.tvone.com/tech_support.shtml

TV One has dedicated technical support staff in offices in the US, Europe and China. Our web based support system allows customers to raise technical issues and then track their progress automatically through the appropriate office. Our technical support has a close working relationship with our Research and Development team allowing quick and efficient resolution of technical issues. Because of this close relationship Customer Feedback goes directly to Research and Development allowing continuous improvements to our products to be made.

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