C2-1000 Series
Video Switcher/Scalers

C2

tvONE

Down Converters
Models C2-1100 & C2-1155

Key Features of the C2-1100

- Automatic incoming resolution detection
- 2x Computer Inputs via HD-15 and 5-BNC
- Computer Resolutions to 2048x2048
- HDTV Resolutions to 1080p
- AutoSet® - Automatic picture sizing
- Multiple Worldwide Television Standards
- Composite, S-Video, YUV, YPbPr Outputs
- RS-232 Interface and Windows Control Panel
- IR Remote Control
- Variable Image Zoom to 10X and Shrink to 10%
- Optional Single/Dual Rackmount Kit
- Optional Input Expansion for additional inputs

Additional Features of the C2-1150

- Genlock with Subcarrier Phase Adjustment
- Picture-in-Picture
- Chromakey and Lumakey
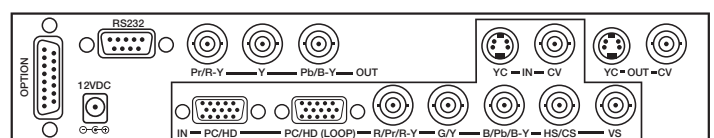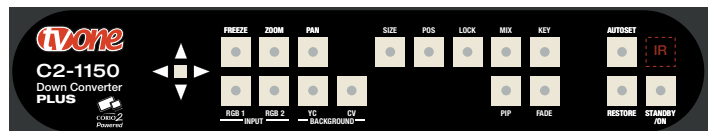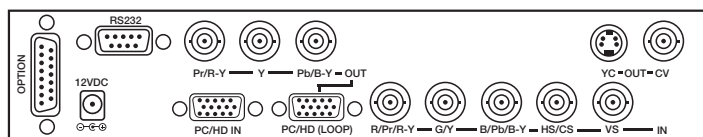- Composite and S-Video Input

C2-1100

C2-1100 Down Converter is based on TV One's exclusive CORIO2™ 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. In order to deal with PC, Mac and most Computer Workstation signals, a wide variety of computer signal formats can be accommodated. Video outputs are switchable between NTSC and PAL and are simultaneously provided in Composite, S-Video 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 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 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

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, Picture-In-Picture, Chromakey and Lumakey. The Key Mode allows computer graphics to be keyed over an external Composite or S-Video 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 Genlock feature insures precise synchronization of the incoming signals by providing a wide Subcarrier lock range with Subcarrier phase adjustment.

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Computer generated source overlayed onto a video input, using the C2-2155.

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
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
S-Video (YC)	1x via 4-Pin Mini-DIN Connector
Video Outputs	
Television Standards	NTSC and PAL
Impedance	75Ω
Composite Video	1x via BNC
S-Video (Y/C)	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
Conversion Technology	Proprietary – CORIO2™
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-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, CE, CSA, RoHS
Mechanical	
Size (H-W-D)	1.6"x8.6"x5.8" (41.5x218x147mm)
Weight (Net)	2.6 lbs (1.2 kg)
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
Power Requirement	
External Power Supply	12VDC@1A
Accessories Included	
1x C-Video Cable	6' (2m) BNC to BNC
1x VGA Cable	6' (2m) HD15 Male to Male
1x Serial Cable	6' (2m) D9 Male to Male
1x IR Remote	IRC-4
1x Operations Manual	C2-1000 Series
1x In-Plug Power Supply	US, UK or Euro
Product Item Numbers	
C2-1100	Down Converter
C2-1150	Down Converter PLUS
Optional Accessories	
RM-220	Single/Dual Rackmount Kit
S2 Series	Input Expansion Switcher

Video Switcher/Scalers

Models C2-1200 & C2-1250

Key Features of the C2-1200

- Automatic incoming resolution detection
- Inputs: 2x CV, 2x SV 1x YUV/YPbPr Component
- Computer Resolutions to 2048x2048
- HDTV Resolutions to 1080p
- Multiple Worldwide Television Standards
- Outputs: 2x RGB or YPbPr
- Integral 4x1 Stereo Audio Routing Switcher
- RS-232 Interface and Windows Control Panel
- IR Remote Control
- Variable Image Zoom to 10X and Shrink to 10%
- Optional Single/Dual Rackmount Kit
- Optional Input Expansion for additional inputs

C2-1200

C2-1200 Video Switcher/Scaler is based on TV One's exclusive CORIO2™ 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 2x Composite, 2x S-Video 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.

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 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.

Additional Features of the C2-1250

- Scaling of the RGB or YPbPr input signal
- Picture-in-Picture
- Chromakey and Lumakey
- Edge Blending
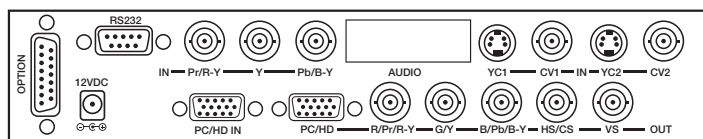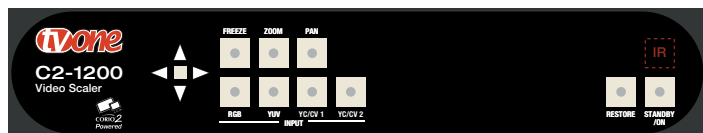- AutoSet® - Automatic picture sizing

C2-1250

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, Picture-In-Picture, Chromakey, Lumakey and Mixing. The **Key Mode** allows computer graphics to be keyed over an external Composite or S-Video 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 the computer inputs to be inset in a window over either of the video inputs or visa versa.
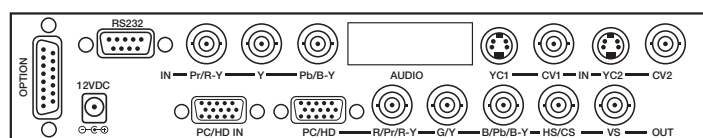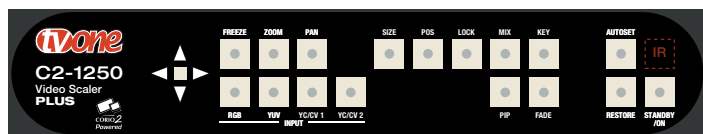
Our exclusive AutoSet® feature takes the hassle out of setup by automatically sizing and positioning the computer image to fit exactly on the video screen. All settings are stored in non-volatile memory and are retained even when power is switched off. Optional rackmount kits are available for all C2-1000 models

Edge Blending is a standard feature of the C2-1250. 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, there is no limit to the number of blended images. 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.

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Video Inputs

Television Standards	NTSC, PAL and SECAM
Composite Video	2x via BNC
S-Video (YC)	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
Max Horiz Scan Rate	150KHz
Computer Compatibility	PC, Macintosh, Workstations

Computer Output

Format - Analog	RGBHV, RGBS, RGsB, YPbPr
Connectors	1x HD-15 Female and 1x 5-BNC
R-G-B Level	1.0 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 – CORIO2™
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-4 Remote Unit

Warranty

Limited Warranty	2 Years Parts and Labor

Regulatory Compliance

Main Units	FCC, CE, RoHS
Power Supplies	UL, CE, CSA, RoHS

Mechanical

Size (H-W-D)	1.6"x8.6"x5.8" (41.5x218x147mm)
Weight (Net)	2.6 lbs (1.2 kg)

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

Power Requirement

External Power Supply	12VDC@1A

Accessories Included

1x C-Video Cable	6' (2m) BNC to BNC
1x VGA Cable	6' (2m) HD15 Male to Male
1x Serial Cable	6' (2m) D9 Male to Male
1x IR Remote	IRC-4
1x Operations Manual	C2-1000 Series
1x In-Plug Power Supply	US, UK or Euro

Product Item Numbers

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

Optional Accessories

RM-220	Single/Dual Rackmount Kit
S2 Series	Input Expansion Switcher

Chromakeyed video input overlayed on a computer generated source, using the C2-1250.

Universal Video Switcher/Scaler

Models C2-1350

- Inputs: RGB/YPbPr via HD-15, YUV/YPbPr via 3-BNC, Composite Video via BNC, YC via 4-Pin
- All Input Signals are Scalable
- Automatic incoming resolution detection
- AutoSet® - Automatic picture sizing
- Computer Resolutions to 2048x2048
- HDTV Resolutions to 1080p
- Multiple Worldwide Television Standards
- 3:2 Pulldown for NTSC Film Mode
- Video signal parameter adjustments
- Outputs include: 2x RGB/YUV/YPbPr via HD15 and 5-BNC, Composite via BNC and S-Video
- Integral 4x1 Stereo Audio Routing Switcher
- RS-232 Interface and Windows Control Panel
- IR Remote Control
- Variable Image Zoom to 10X and Shrink to 10%
- Genlock With Subcarrier Phase Adjustment
- Picture-in-Picture
- Chromakey and Lumakey
- Edge Blending
- Optional Single/Dual Rackmount Kit
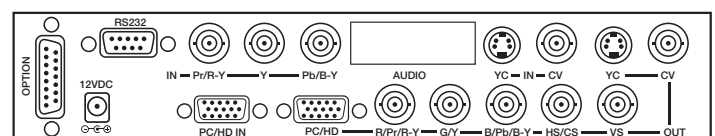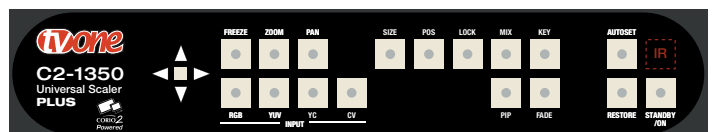- Optional Input Expansion with S2 Switchers

C2-1350

C2-1350 Universal Video Scaler is based on TV One's exclusive CORIO2™ 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, S-Video, 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, S-Video and YUV Component.

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 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. Motion compensation and a 3:2 Pulldown feature for NTSC greatly improves image quality.

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.

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 S-Video 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 C2-1350 is housed in a desktop case with an optional rackmount kit

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Edge Blending is a standard feature of the C2-1250 and 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, there is no limit to the number of blended images. 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.

Input Expansion to add additional RGB, YPbPr, YUV, Composite or S-Video inputs is easy by using any of the optional S2 Series Input Expansion Switchers. The S2 unit links to any C2-1000 series unit via an Options Interconnect Cable and becomes an integral part of scaler from a control and operational standpoint. The routing of these additional inputs is controlled directly from the control system of the C2. Multiple different S2 models may be simultaneously connected to a single C2, providing virtually unlimited input flexibility.

Edge Blending with computer generated overlays

Video Inputs			
Television Standards	NTSC and PAL	Film Mode (NTSC)	3:2 Pulldown
Composite Video	1x via BNC	Video Adjustments	Contrast, Brightness, Saturation,
S-Video (YC)	1x via 4-Pin Mini-DIN Connector	Hue (NTSC), R-G-B Levels	
YUV /YPbPr	1x via 3-BNC	**Audio Input/Output**	
Computer Input		Inputs	4x Unbalanced via Terminals
RGB/YPbPr	1x via HD15	Output	Unbalanced via Terminals
Format - Analog	RGBHV, RGBS, RGsB, YPbPr	**Operational Modes**	
Sync	TTL Level, 10KΩ, Pos or Neg	Key	Chromakey or Lumakey
Termination	Auto-terminating into 75Ω	Mix	PC to/from Video
R-G-B Level Range	0.5-2.0 Vp-p	PIP	Variable Window Size & Position
Scan Rate Detection	Automatic	**Genlock Adjustments**	
PC Resolutions	Any up to 2048x2048	Subcarrier Lock Range	+/- 200Hz for NTSC Operation
HDTV Resolutions	Any up to 1080p		(+/- 250Hz for PAL Operation)
Max Horiz Scan Rate	150KHz	Subcarrier Phase	+/- 180° Adjustment
Computer Compatibility	PC, Macintosh, Workstations	**Control Methods**	
Video Outputs		Local	via Front Panel Buttons & OSD
Television Standards	NTSC and PAL	RS-232 Interface	via D9 Female Connector
Impedance	75Ω	Infrared Remote	via IRC-4 Remote Unit
Composite Video	1x via BNC	Input Expansion Control	via D-15 Options Connector
S-Video (Y/C)	1x via 4-PIN Mini-DIN	**Warranty**	
YUV, YPbPr	1x via 3-BNC (shared w RGB Out)	Limited Warranty	2 Years Parts and Labor
Computer Outputs (2x)		**Regulatory Compliance**	
Format - Analog	RGBHV, RGBS, RGsB, YPbPr	Main Units	FCC, CE, RoHS
Connectors	1x HD-15 Female and 1x 5-BNC	Power Supplies	UL, CE, CSA, RoHS
R-G-B Level	1.0 Vp-p	**Mechanical**	
PC Resolutions	Any up to 2048x2048	Size (H-W-D)	1.6"x8.6"x5.8" (41.5x218x147mm)
HDTV Resolutions	Any up to 1080p	Weight (Net)	2.6 lbs (1.2 kg)
Vertical Refresh Rate	Any to 250Hz	**Environmental**	
General		Operating Temperature	+4° to +45° C (+40° to +113° F)
Size and Position	Automatic via AutoSet or Manual	Operating Humidity	10% to 85%, Non-condensing
Image Size	User-Definable Presets	Storage Temperature	0° to +60° C (+32° to +140° F)
Image Freeze	One Video Frame	Storage Humidity	10% to 85%, Non-condensing
Settings Memory	Non-Volatile	**Power Requirement**	
Zoom Range	Variable to 10X Zoom	External Power Supply	12VDC@1A
Shrink Range	Variable to 10%	**Accessories Included**	
Image Mirroring	Horizontal and/or Vertical	1x C-Video Cable	6' (2m) BNC to BNC
Horizontal Filtering	Full Digital	1x VGA Cable	6' (2m) HD15 Male to Male
Conversion Technology	Proprietary – CORIO2™	1x Serial Cable	6' (2m) D9 Male to Male
Color Resolution	24-bit (16.8 Million Colors)	1x IR Remote	IRC-4
Sampling Rate	108MHz	1x Operations Manual	C2-1000 Series
Digital Sampling	24-bit, 4:4:4 format	1x In-Plug Power Supply	US, UK or Euro
Firmware Memory	Flash, Upgradeable via RS-232	**Product Item Numbers**	
Video Encoder	8-bit Digital	C2-1350	Universal Video Switcher/Scaler
Video Decoder	9-bit Digital	**Optional Accessories**	
De-Interlacing (NTSC-PAL)	Pixel-level Motion Adaptive	RM-220	Single/Dual Rackmount Kit
Comb Filter Decoding	Adaptive	S2 Series	Input Expansion Switchers

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This symbol on a product indicates that it is powered by CORIO2™ technology, the most flexible video processing engine now available Unlike most manufacturers, who use third party chipsets to provide video conversion, TV One has developed its own proprietary technology known as CORIO2™. This frees TV One products from the constraints imposed by third parties and results in an unsurpassed degree of flexibility. Products based on third party chipsets have a feature set frozen at the introduction of the product. Since the CORIO2™ video processing engine is entirely firmware based, it can be upgraded at any time by downloading the latest firmware version form the support website and flash upgrading the unit in the field. This enables new features to be added to units many years after the initial purchase. This "obsolescence insurance" means that a CORIO2™ based product can always be upgraded to the latest version of that model.

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