SONY

Digital Scan Converter

DSC-1024

Sony's new Digital Scan Converter unit, the DSC-1024, heralds an important new advance in video and display standards.

Upward and downward conversions between all major video and display formats are made possible by combining transcoder and scan converter functions that apply innovative processing techniques.

Features of the versatile DSC-1024 open the field to a wide range of applications. Standard video formats and computer graphics can now be displayed in clear, high-resolution images on large screens. This is ideal for product shows, exhibitions, conferences and entertainment applications.

Convert with

Universal System and Format Conversion

Versatile Upward and Downward Conversions

The DSC-1024 combines the use of 4-line interpolation to convert vertical scan lines with variable offset sampling for horizontal scan lines, and is designed to lock on to and display images in various video formats. An input accepted in the 15.6 to 70kHz horizontal frequency range and the 50 to 120Hz vertical frequency range is output at an industry standard 15.6kHz, 31.5kHz, 37kHz, 48kHz or 64kHz frequency.

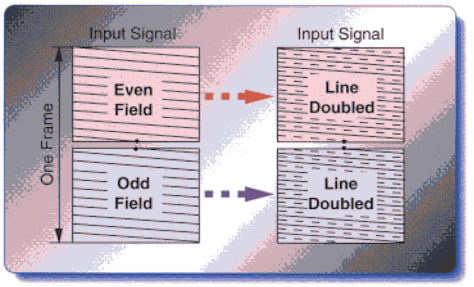
Built-in Transcoder

The high-quality video decoder's 3-line digital comb filter serves to minimize the dot interference visible on conventional television displays. And the three-dimensional comb filter reduces the random noise often visible when playing NTSC standard video tapes and laser discs.

The transcoding function provides universal conversions between video signal formats. The DSC-1024 offers the user complete freedom in changing to and from composite video, Y/C, Y/R-Y/B-Y and RGB formats.

Line Doubling

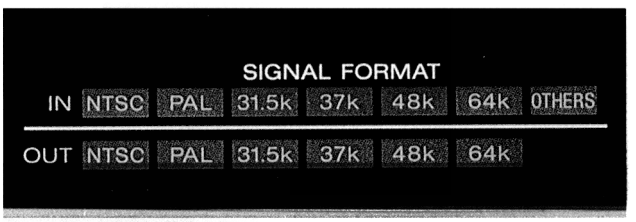
Line doubling significantly reduces the visible line structure and horizontal line flicker in video images. Doubling the number of scan lines, while preserving the vertical data for each field, ensures that even fast-moving images are naturally reproduced. This assures higher quality reproduction even when images are projected on large video screens.



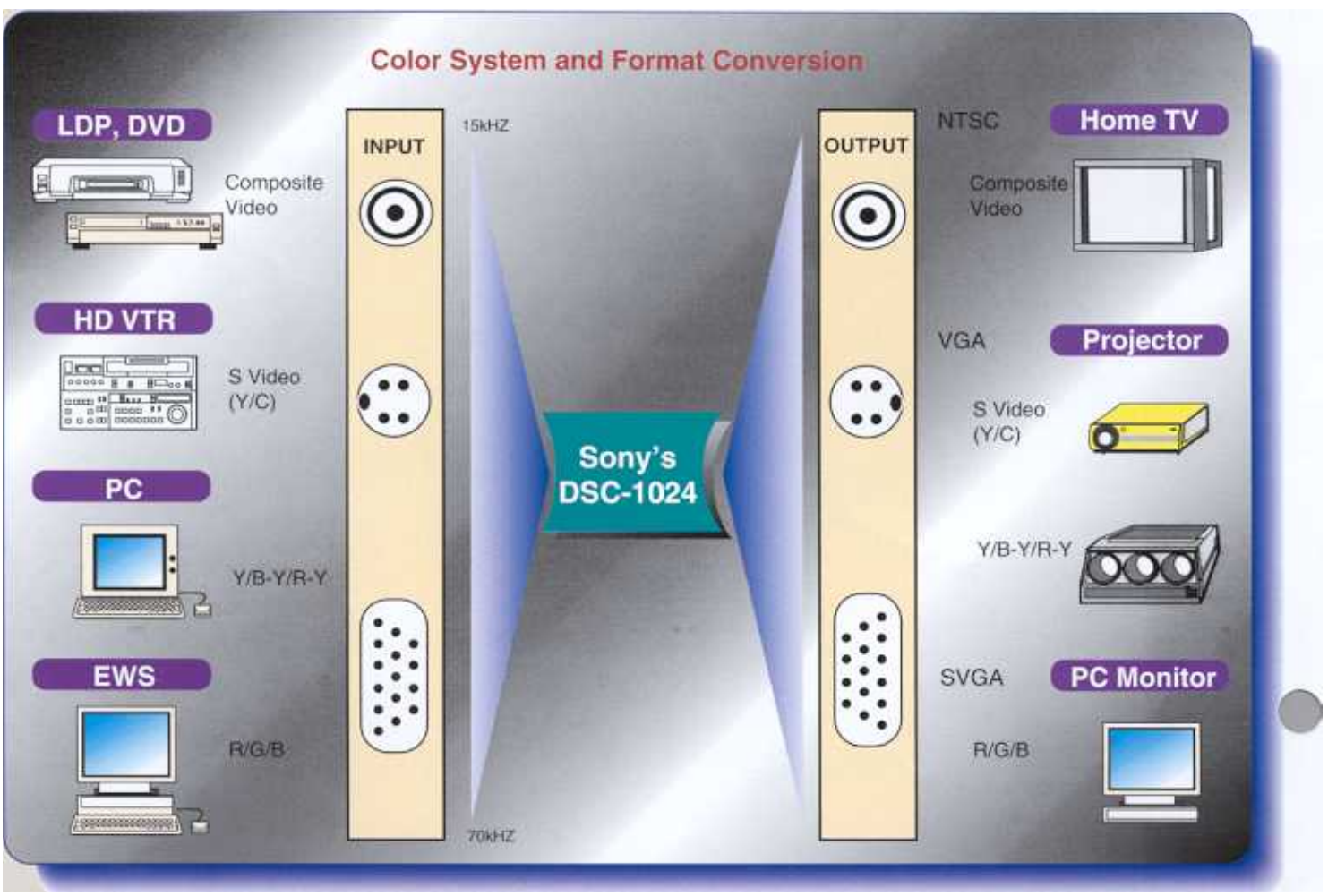
Automatic Input Signal Recognition

The DSC-1024 automatically recognizes the input signal and converts it to the selected output format, while indicating the input signal format. The OTHERS indicator lights up when the input signal has a non-standard line frequency.

Signal formats are listed in the table below.



Signal Format Indicator



Confidence

Sony Stays True to the Original

Variable and Offset Sampling

Compared to NTSC and PAL signal bandwidths of around 6 to 7MHz, computer video bandwidths range from around 15MHz for VGA to over 50MHz for SVGA. The DSC-1024 switches the sampling rate and low-pass filtering in 6 steps to provide the appropriate signal processing for each signal bandwidth over this entire range of source signals.

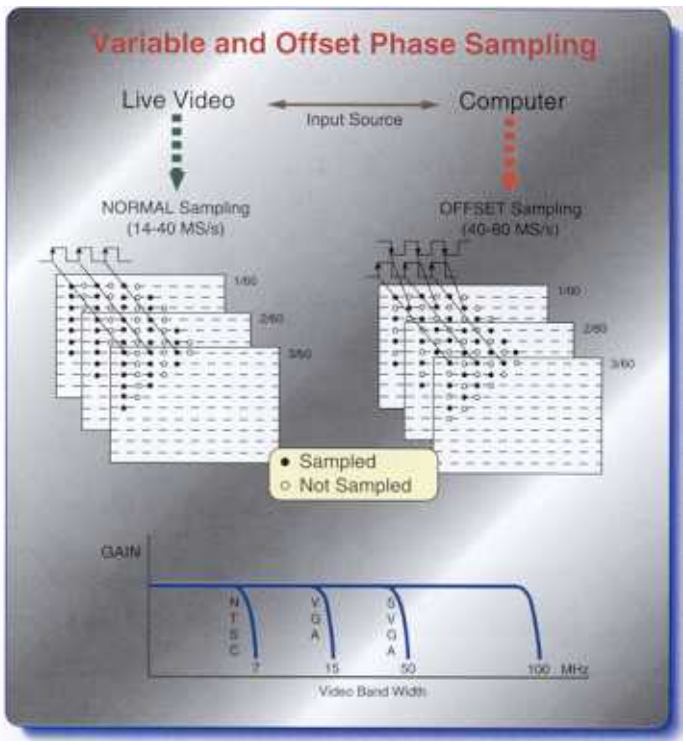
Variable offset sampling, which changes phase for each line, is used on very high-frequency bandwidths such as the SVGA. The result is 80MHz quality sampling performance at a 40MHz sampling rate, making video conversions that remain faithful and true to the original signal.

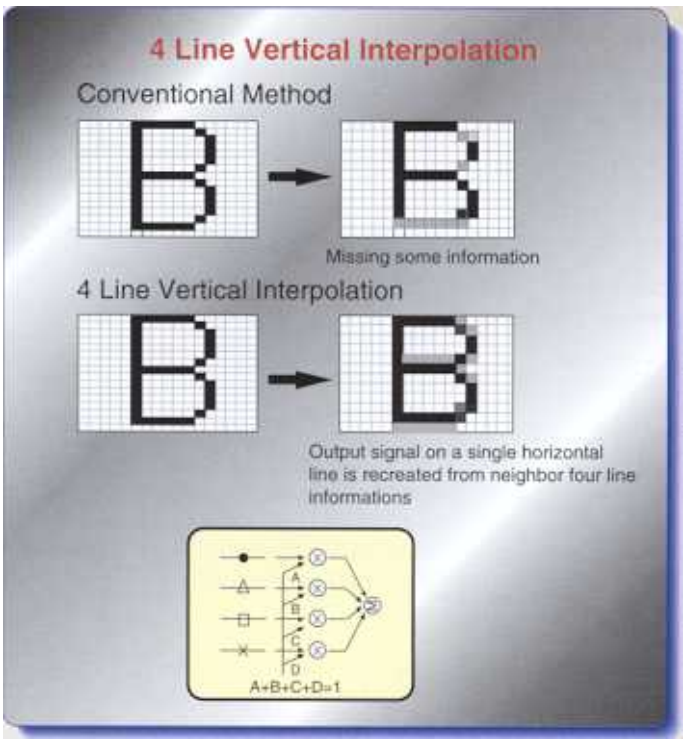
High-density Vertical Interpolation

Interpolation and compensation are used to increase and decrease the number of scan lines when converting between signals of different resolutions.

When down converting, the DSC-1024 uses 4-line interpolation to combine the original data of 4 lines to a single line. Interpolation is performed on the previous 3 lines and the next line using a system of weighted averages. The process is continued for the full screen. In contrast, the conventional scan methods simply leave out entire lines of information. This is why the DSC-1024 can create images with highly accurate detail.

When up converting, 2-line interpolation uses the data of adjoining lines to calculate the transitional area. This contrasts with the simple double scan technique of traditional methods. The result is image reproduction featuring high resolution.





Others

Aspect Ratios

The DSC-1024 can convert between a wide range of aspect ratios that include 4:3, 16:9, 2:1, 1.85:1 and 1.66:1. A special function also calculates the aspect ratio of the current signal and instantly displays the numbers on-screen.

Test Patterns

Test signals are generated in the current output format to allow users to adjust monitor and projector images. Test patterns include hatch, box, color bars and gray scale.

Zoom Function and Pan

Digital processing provides zoom ranges of ×2, ×3 and ×4. The Pan function lets the user move through the original image when in the zoom mode.

Freeze Frame

Users can freeze one frame of video at a time for closer viewing.

Remote Control

The DSC-1024 can be remotely controlled by a Sony standard television, monitor or video projector remote commander via an on-screen set-up menu. When this menu is displayed on monitors or projectors connected to the output of the DSC-1024, its built-in index system allows control from a single commander to be selected to set up the DSC-1024 or any of the displays via their own on-screen menus.

Aperture Correction

Aperture correction provides two advantages. Firstly, it removes the line-flicker and moire when non-interlaced images are converted to interlaced images or when down converting is performed for video signals. Secondly, it increases image detail by sharpening edge detail when displaying computer signals.

On-screen Display

All screen menus can be displayed in five different languages: English, German, French, Italian and Spanish.

Specifications

Input Connector

Video1:	Composite:	Loop-though BNC
	S Video:	Loop-though 4-pin mini DIN
Video2:	Composite:	Loop-though BNC
	S Video:	Loop-though 4-pin mini DIN
Video3:	Component(R/G/B, Y/R-Y/B-Y):	Loop-though D-sub 15-pin
Audio1/2/3:	L/R RCA jack	

Output Connector

	Composite:	BNC
	S video:	4-pin mini DIN
	Component(R/G/B, Y/R-Y/B-Y):	D-sub 15-pin
Audio:	L/R RCA jack	

Signal Level

	1Vp-p (typical), Automatic 75Ω termination	
	Y:1Vp-p (typical), sync negative	
	C:0.286Vp-p(NTSC)/0.3Vp-p(PAL)(typical)	
	Automatic 75Ω termination	
Component:	R/G/B Input:	0.714Vp-p(typical)(sync on G/external sync, switchable), 75Ω/Hi-Z
	R/G/B Output:	0.714Vp-p(typical)(with external sync), 75Ω(typical)
	Y/R-Y/B-Y Input:	0.7Vp-p(typical)(NTSC/PAL, sync on Y), 75Ω/Hi-Z
	Y/R-Y/B-Y Output:	0.7Vp-p(typical)(with sync on Y), 75Ω(typical)

Format Conversion:

Capture range:	fH: 15.6 to 70kHz, fV: 50 to 120Hz
Sampling rate:	14.3 to 40MHz offset phase max. (Equivalent to 80MHz sampling)
Output pixel clock:	14.3 to 50MHz
Line doubler:	Line doubled vertically for each field
Picture adjustment:	CONTRAST/PHASE (except for RGB/YBR/PAL)/CHROMA (except for RGB) SIZE/CENTER/ZOOM (×2, ×3, ×4)/APERTURE (ON/OFF)/STILL (ON/OFF)

General:

Power requirements:	100 to 120V, 0.4A (max.), 50/60Hz 200 to 240V, 0.25A (max.), 50/60Hz
Power consumption:	30W (max. power on), 3W (typical power off)
Operating temperature:	0 to 35°C (50 to 96°F)
Dimensions:	424 (W) × 44 (H) × 354 (D)mm (16 3/4 × 1 3/4 × 14 inches)
Mass:	4.1kg (9 lb 1 oz)

Regulation compliance:

USA:	UL mark (UL-1950)/FCC 15-J class B
Canada:	CSA mark (C22.2 No. 950)/IC class B
Europe:	GS mark (IEC-950, TÜV) CE mark (EN-60950/EN-50082/EN-55022 class B)
Nordic:	DEMKO/SEMKO/NEMKO/EI safety approvals

Accessories:

	AC power cord (for U/C model only)
	D-sub 15-pin to 5BNC cable (6 ft.)
	Operation manual
Optional accessories:	Rack mount bracket: MB-510
	D-sub 15-pin to 5 BNC cable: SMF-400
	D-sub 15-pin to D-sub 15-pin cable: SMF-401
	Remote commander: RM-854, RM-PJ1292, RM-1271, RM-PJ350, RM-PJC520, etc.

PRESET SIGNALS

INDICATOR		SIGNAL STANDARDS	
INPUT	OUTPUT	NAME	Line Rate/Field Rate
NTSC	NTSC	NTSC	15.73 kHz/59.94 Hz
PAL	PAL	PAL	15.63 kHz/59.94 Hz
OTHERS	–	HDTV(Japan)	33.75 kHz/59.94 Hz
31.5 K	–	VGA Text	31.47 kHz/59.94 Hz
31.5 K	31.5 K	VGA 640 × 480	31.47 kHz/70.11 Hz
OTHERS	–	Mac 13" mode	35.00 kHz/66.67 Hz
37 K	37 K	VESA 800 × 600	37.88 kHz/60.32 Hz
OTHERS	–	Mac 16" mode	49.08 kHz/60.00 Hz
48 K	48 K	VESA 1024 × 768	48.36 kHz/60.00 Hz
64 K	64 K	ATI 1280 × 1024	63.95 kHz/59.94 Hz

Front panel

Control section of the front panel

Rear panel

Design and specifications subject to change without notice.
The DSC-1024 Digital Scan Converter does not have a Motion Compensation feature.