

# SONY®

## Digital Scan Converter **DSC-1024HD**

**T**ranscoding and up/down conversion makes it easy to turn any video format into any format your system requires.

The new Sony DSC-1024HD Digital Scan Converter is ready to output HD video in 1080i format.

It also provides two PC RGB inputs so that two PCs can be connected simultaneously. With these capabilities, the Sony Digital Scan Converter DSC-1024HD is a perfect solution for the multi video format environment in the digital TV era:

- Video format conversion between PAL and NTSC
- High resolution PC RGB signals recorded on any NTSC/PAL video recorders
- High resolution PC RGB signals played back on NTSC, PAL or 1080i monitors/projectors
- PAL/NTSC video played back on high resolution RGB monitors/projectors and 1080i monitors/projectors
- High resolution RGB signals played back on lower resolution RGB monitors/projectors
- Low resolution RGB signals played back on higher resolution RGB monitors/projectors



# Convert with

## Universal System and Format Conversion

### Versatile Upward and Downward Conversions

The DSC-1024HD combines the use of four 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 70 kHz horizontal frequency range and the 50 to 120 Hz vertical frequency range is output at an industry standard 15.6 kHz, 31.5 kHz, 33.75 kHz (1080i\*), 37 kHz, 48 kHz or 64 kHz frequency.

\* When a 1080i signal is output, a fV (60 Hz/59.94 Hz) is selectable on the on-screen display menu.

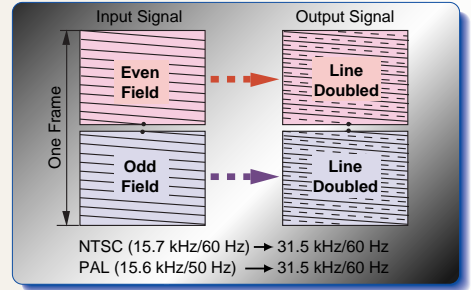
### Built-in Transcoder

The high-quality video decoder's three 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-1024HD offers the user complete freedom in changing to and from composite video, Y/C, Y/B-Y/R-Y and G/B/R 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, permits even fast moving images to be naturally reproduced. This provides higher quality reproduction even when images are projected on large video screens.



### Automatic Input Signal Recognition

The DSC-1024HD 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.



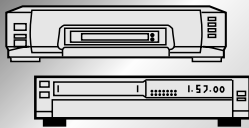
Signal Format Indicator

### Genlock

When an NTSC or PAL signal is output, a genlock function is available. This function synchronizes the NTSC or PAL output signal to a black/burst signal input to the DSC-1024HD as a reference signal.

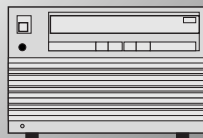
## Color System and Format Conversion

LDP, DVD



15 kHz

HD VTR



PC



EWS



70 kHz

INPUT

DSC-1024HD



OUTPUT

NTSC

PAL

Line Doubler

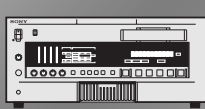
VGA

SVGA

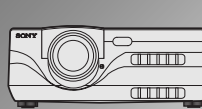
1080i



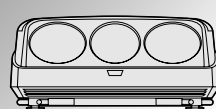
Home TV



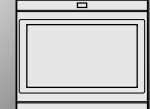
VTR



Projector



PC Monitor



HD Monitor

# Confidence

## Sony Stays True to the Original

### Variable and Offset Sampling

Compared to NTSC and PAL signal bandwidths of around 6 to 7 MHz, computer video bandwidths range from around 15 MHz for VGA to over 50 MHz for SVGA. The DSC-1024HD 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 SVGA. The result is 80 MHz

quality sampling performance at a 40 MHz sampling rate, making video conversions that remain faithful and true to the original signal.

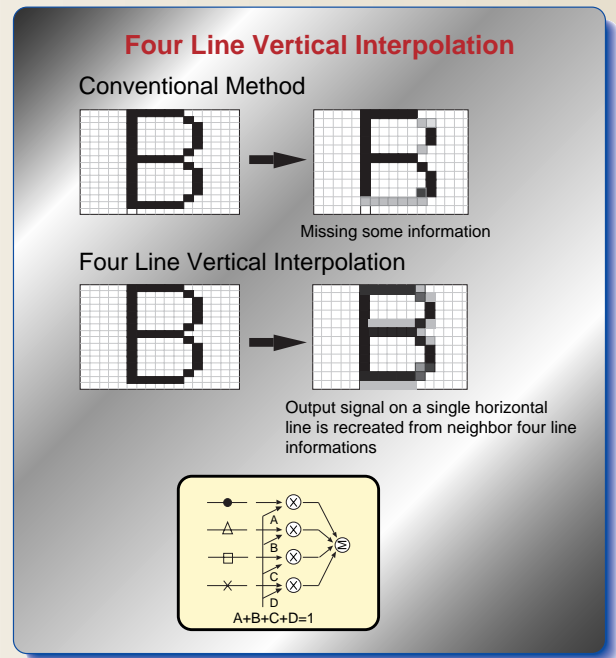
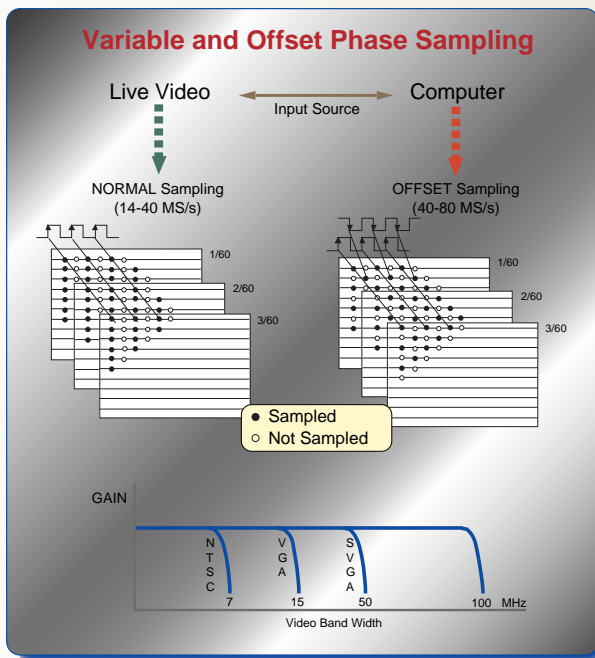
### High-density Vertical Interpolation

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-1024HD uses four line interpolation to combine the original data of four lines to a single line. Interpolation is

performed on the previous three 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-1024HD can create images with highly accurate details.

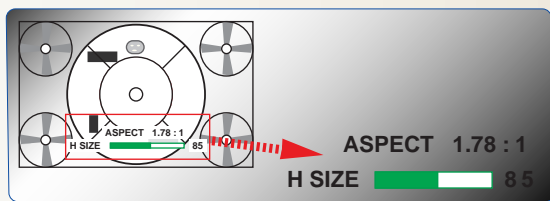
When up converting, two line interpolation uses the data of adjoining lines to calculate the transitional area. This contrasts with the simple double scan technique of traditional methods. The result is image reproduction featuring high resolution.



## Others

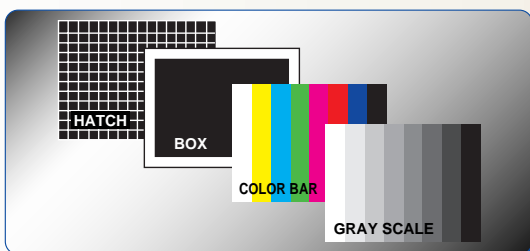
### Aspect Ratios

The DSC-1024HD 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.



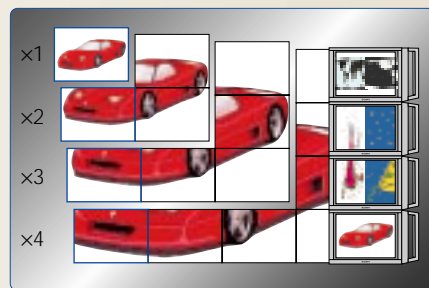
### Test Patterns

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  $\times 2$ ,  $\times 3$  and  $\times 4$ . 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-1024HD can be remotely controlled by a Sony standard television, monitor or video projector remote control unit via an on-screen set-up menu. When this menu is displayed on monitors or projectors

connected to the output of the DSC-1024HD, its built-in index system allows control from a single remote control to be selected to set up the DSC-1024HD or any of the displays via their own on-screen menus.

### Aperture Correction

Aperture correction provides two advantages. First, 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

<b>Video 1:</b>	Composite:	Loop-through BNC
	S Video:	Loop-through 4-pin mini DIN
<b>Video 2:</b>	Composite (Composite/-/-),	
	Component (G/B/R, Y/B-Y/R-Y):	Loop-through D-sub 15-pin
<b>Video 3:</b>	Component (G/B/R, Y/B-Y/R-Y):	Loop-through D-sub 15-pin
<b>Audio 1/2/3:</b>	L/R RCA jack	

## Output Connector

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

## Signal Level

<b>Composite:</b>	1 Vp-p (typical), (Video 1: Automatic 75 Ω termination, Video 2: 75 Ω/Hi-Z)
<b>S video:</b>	Y: 1 Vp-p (typical), sync negative C: 0.286 Vp-p (NTSC)/0.3 Vp-p (PAL) (typical) Automatic 75 Ω termination
<b>Component:</b>	G/B/R Input: 0.714 Vp-p (typical) (Video 2: auto sync, Video 3: sync on G/auto sync, switchable), 75 Ω/Hi-Z HV. sync/c. sync: 1~5 Vp-p G/B/R Output: 0.714 Vp-p (typical) (with external sync), 75 Ω (typical) HV. sync/c. sync: TTL Y/B-Y/R-Y Input: 0.7 Vp-p (typical) (NTSC/PAL, sync on Y), 75 Ω/Hi-Z Y/B-Y/R-Y Output: 0.7 Vp-p (typical) (with sync on Y), 75 Ω (typical)

## Format Conversion:

Capture range:	fH: 15.6 to 70 kHz, fV: 50 to 120 Hz
Sampling rate:	14.3 to 40 MHz offset phase max. (Equivalent to 80 MHz sampling)
Output pixel clock:	14.3 to 50 MHz
Line doubler:	Line doubled vertically for each field
Genlock:	Reference: Black/burst signal on Video1 input Applicable to NTSC/PAL outputs only Genlock ON/OFF, SCH adjustment
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 120 V, 0.4 A (max.), 50/60 Hz 200 to 240 V, 0.25 A (max.), 50/60 Hz
Power consumption:	30 W (max. power on), 3 W (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:	4.1 kg (9 lb 1 oz)

## Regulation compliance:

USA:	UL mark (UL-1950)/FCC 15-J class B
Canada:	cUL mark (C22.2 No. 950)/IC class B
Europe:	GS mark (EN 60 950/1992) CE mark (EN 55 022/1994 class B, EN 50 082-1/1992, EN 61000-3-2/1995)
Nordic:	DEMKO/SEMKO/NEMKO/FIMKO safety approvals

## Accessories:

Supplied accessories:	AC power cord (for U/C model only) D-sub 15-pin to 5 BNC 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-PJ1001, etc.

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Macintosh and Mac are registered trademarks of Apple Computer, Inc..

## 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/50.00 Hz
OTHERS	–	HDTV(Japan) 1920 × 1035	33.75 kHz/59.94 Hz
31.5 K	–	VGA Text	31.47 kHz/70.11 Hz
31.5 K	31.5 K	VGA 640 × 480	31.47 kHz/59.94 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	49.73 kHz/74.55 Hz
48 K	48 K	VESA 1024 × 768	48.36 kHz/60.00 Hz
64 K	64 K	VESA 1280 × 1024	63.95 kHz/59.94 Hz
–	1080i	HDTV 1920 × 1080	33.75 kHz/60.00 Hz, 59.94 Hz



Front panel



Control section of the front panel



Rear panel

The DSC-1024HD Digital Scan Converter does not have a Motion Compensation feature.

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