NTSC/PAL | Digital Videocassette Recorder

SONY

DVCAM™

DSR-1500
DSR-1500P

For

Professional

Results

Superb Multi-Environment Application Flexibility in a Compact Unit

The DSR-1500* is a new DVCAM™ Editing Recorder that offers many significant advantages in professional video applications.

With its full range of optional interface boards, the DSR-1500 can be configured to meet a broad range of user requirements. Its applications range from simple source playback for viewing purposes to high-quality source feeding for linear or nonlinear editing. Especially, the availability of digital interfaces ensures a migration path to the SDI-based systems.

The DSR-1500 is contained in a compact, space saving, half-rack design, making it ideal for installation in OB vehicles and in desktop editing systems.

A key advantage is its playback compatibility with DV (25 Mb/s) family format, including consumer DV (SP mode) and DVCPRO. This capability enables the DSR-1500 to be used in a broad range of applications.

Filled with professional features and offering great flexibility, the DSR-1500 is the perfect choice for today's demanding video applications.

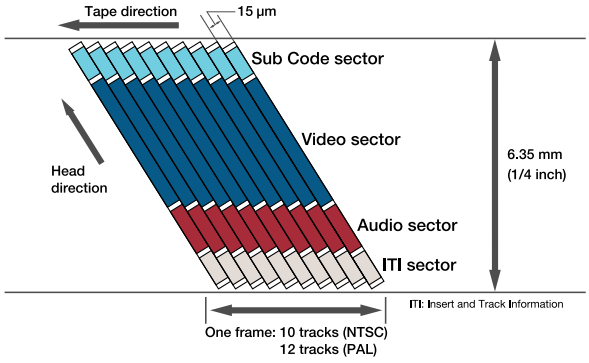
* In the following text, 'DSR-1500' refers to both the DSR-1500 (NTSC model) and the DSR-1500P (PAL model).

DSR-1500

Main Features

The DVCAM Format for Professional Performance

The DSR-1500 employs the DVCAM format, the professional extension of the worldwide standard DV format. The DVCAM format uses 8-bit digital component recording with a 5:1 compression ratio and a sampling rate of 4:1:1 (for NTSC) / 4:2:0 (for PAL). The unique compression algorithm provides excellent picture quality and superb multi-generation performance. The DVCAM format has a wider track pitch of 15 µm (compared with 10 µm for the DV format) which gives higher reliability for professional editing.



It also offers superior digital audio performance, providing a wide dynamic range and excellent signal-to-noise ratio, comparable to CD quality. Alternative audio channel modes can be selected: a two-channel mode with 48 kHz/16-bit recording or a four-channel mode with 32 kHz/12-bit recording.

DVCAM cassette tapes are available in two sizes: standard and mini. The standard-size cassette provides a recording time of up to 184 minutes while the mini-size cassette provides up to 40 minutes.

Playback Compatibility with DV (25 Mb/s) Family Formats

For maximum versatility, the DSR-1500 is designed to playback DV (25 Mb/s) format recorded tapes without a mechanical adaptor – and without requiring menu switching of playback modes before use. This playback versatility includes consumer DV recorded tapes (SP mode) and even DVCPRO* recorded tapes. Moreover, it is possible to use these tapes directly as editing source material with ±0 frame accuracy.

* Playback signal of a DVCPRO recorded tape is not available via the SDTI (QSDI™) or i.LINK™ (DV In/Out) interface.

Versatile Interface Options

A range of versatile optional interface boards is available, allowing flexible analog and digital system configurations. Users can choose from the range of interfaces to configure the DSR-1500 to their individual requirements. Alternatively, all three types of interface boards can be installed simultaneously. Thanks to these options, the DSR-1500 can function as a compact, high-performance professional editing VTR.

■ Digital Interfaces (DSBK-1501 Digital Input/Output Board)

The optional DSBK-1501 Digital Input/Output Board provides the DSR-1500 with SDI*, SDTI (QSDI™)* and AES/EBU digital audio interfacing. Using SDI provides a direct video/audio I/O between the DSR-1500 and digital equipment such as Digital Betacam® and Betacam SX® VTRs, while the AES/EBU capability provides an interface to digital audio mixers and so on. This interface flexibility ensures upward compatibility throughout the broadcasting system. SDTI (QSDI) allows virtually degradation-free transfer of both video and audio signals between the DSR-1500 and other SDTI (QSDI)-equipped video equipment and nonlinear editing systems.

- The SDTI (Serial Data Transport Interface) is defined as SMPTE 305M.
- The SDTI (QSDI) is the DV compressed signal interface which is defined as SMPTE 322M.

* Either SDI or SDTI (QSDI) is selectable by menu.

■ i.LINK™ Interface (DSBK-1503 i.LINK/DV Input/Output Board)

The i.LINK interface is based on the IEEE 1394 standards, enabling a single cable to simultaneously carry digital video and audio signals, as well as data and control signals, with virtually no quality deterioration. This simple connection offers an ideal solution for interconnecting the DSR-1500 with i.LINK-equipped nonlinear editing systems and other computer-related products.

- i.LINK stands for IEEE 1394-1995 standards and their revisions.
- is the logo for products that implement i.LINK.

■ Analog Interfaces (DSBK-1504 Analog Input Board)

With the optional DSBK–1504 Analog Input Board installed, a full range of analog interfaces – composite, component, S-Video (Y/C) and two channel analog audio (via XLR connectors) – is provided.

Note: The DSR-1500 requires a minimum of one of the above optional interface boards to be installed to function as an editing recorder. Only analog output interfaces are standard.

Full Range of Analog Outputs

As standard, the DSR-1500 incorporates a comprehensive range of analog interfaces for both video and audio: composite, component, S-Video (Y/C) for video, and two channels of audio (via XLR connectors) are all provided. Thanks to these interfaces, the DSR-1500 can act not only as a feeder for an analog editing system but also as a simple playback viewer in various applications such as broadcast station studios, OB vehicles, producer offices and so on.

Compact Design - Ideal for Desktop Editing Style

The DSR-1500 is half-rack size, 3U high. With this compact design, the DSR-1500 is easy to install in a variety of user environments, typically being used as an editor/feeder machine for desktop nonlinear editing systems, installed in confined spaces such as OB vehicles, and so on.

Excellent Digital Slow Motion and Jog Sound

The DSR-1500 provides a variable speed playback function with a range of -0.5 to +0.5 times normal play speed. Within this range, the DSR-1500 plays back noiseless, digital slow-motion pictures as well as clear jog sound, making it easy to locate editing points quickly and accurately. Moreover, this feature is available even for other DV (25 Mb/s) format recorded tapes like consumer DV (SP mode) and DVCPRO.

Remote Control Interfaces

The DSR-1500 has both an RS-422A interface and a SIRCS (Sony Integrated Remote Control System) interface. The RS-422A interface is the industry standard for professional editing, allowing the DSR-1500 to interface with Sony VTRs and editing controllers. The SIRCS interface enables connection to Sony's DSRM-10 Remote Control Unit for remote control of transport functions.

Audio Level Control

Audio levels can be adjusted with the control knobs on the front panel, in both recording and playback modes.

Picture Search by Menu Keys

The DSR-1500 provides picture search function* by use of menu keys on the front panel. By pressing ▶ and ◀ buttons, search speed of 10 times normal speed is available both in forward and reverse. ▲ and ▼ buttons allow frame by frame picture search at 0.21 times both in forward and reverse, and also enables search speed of 0.5 times by continuously pressing these buttons.

Built-in Signal Generator

Equipped with a built-in signal generator, the DSR-1500 can generate color bars or black burst for video, and 1 kHz tone or silent signal for audio.

Quick, Responsive Mechanism

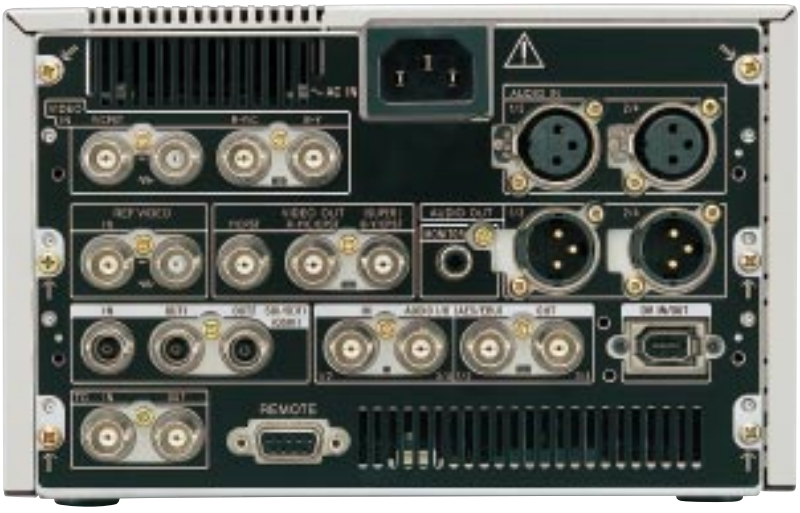
Quick mechanical response is an essential requirement for professional video production. The DSR-1500 provides this through the use of a reliable direct reel and drum motor mechanism. Fast forward and rewind speeds are an impressive 85 times play speed, with a maximum search speed of 60 times during color playback*. In editing environments, where speed is of vital importance, this mechanism frees editors from the frustration of slow operation and speeds the editing process.

* Search mode can be controlled through the RS-422A interface or the SIRCS interface.

Other Features...

- AC Operation
- VITC (Vertical Interval Time Code)
- ClipLink™ Operation
- Closed Caption Function (NTSC model only)
- Video Processor Control
- Time Code Input/Output

— Front View

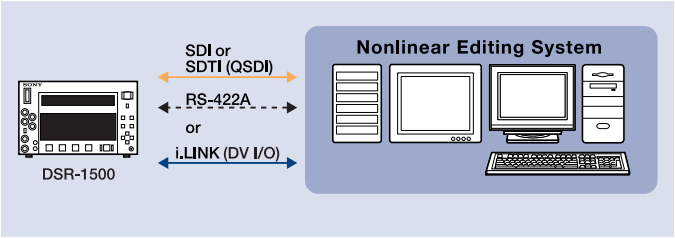


— Rear View (with full options)

Application Examples

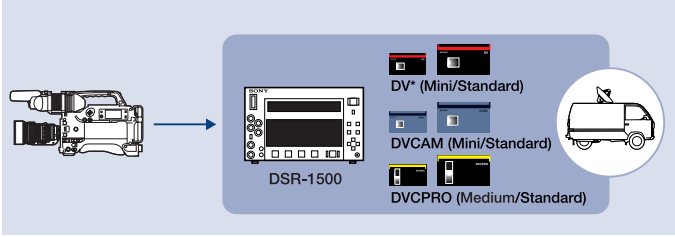
Feeder/Editor for Nonlinear Editing Systems

- Superior multi-generation picture and sound quality by use of SDI, SDTI (QSDI) and i.LINK interfacing through the entire production process
- Ideal as a feeder/editor machine in a nonlinear editing system
- Space-saving design, ideal for desktop editing



Feeder/Viewer in OB Vehicles/Studios

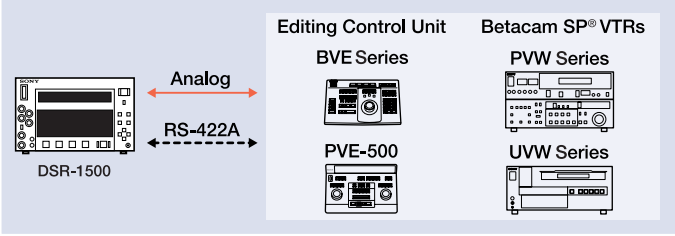
- Ideal as a DV multi-format viewer
- Compact size, saves critical installation space in applications such as OB vehicles



* SP mode only

Feeder/Editor for Linear Editing Systems

- Easy to integrate into a current analog editing system through the use of analog interfaces
- Ideal first unit for smooth migration into a digital production system



Peripheral Equipment & Optional Accessories

DSBK-1501
Digital Input/Output Board

DSBK-1503
i.LINK/DV Input/Output Board

DSBK-1504
Analog Input Board

RCC-5G/10G/30G
9-pin Remote Control Cable

CCF-3L/CCFD-3L
DV Cable
(6-pin to 6-pin/6-pin to 4-pin)

DSRM-10
Remote Control Unit

PDVM-12ME/
22ME/32ME/40ME
Digital Videocassette
(Mini size)

PDV-34ME/
64ME/94ME/
124ME/184ME
Digital Videocassette
(Standard size)

PDVM-32N/40N
Digital Videocassette
(Non-IC type/Mini size)

PDV-64N/
124N/184N
Digital Videocassette
(Non-IC type/Standard size)

PDVM-32MEM/
40MEM
Digital Videocassette
(Master tape/Mini size)

PDV-64MEM/
124MEM/184MEM
Digital Videocassette
(Master tape/Standard size)

PDVM-12CL
Cleaning Cassette Tape
(Mini size)

PDV-12CL
Cleaning Cassette Tape
(Standard size)

Specifications

		DSR-1500	DSR-1500P
● General			
Power requirements		AC 100 V to 240 V, 50/60 Hz	
Power consumption		60 W (with all options)	
Operating temperature		5 °C to 40 °C (41 °F to 104 °F)	
Storage temperature		AC 100 V to 240 V, 50/60 Hz	
Operating humidity		Less than 80%	
Storage humidity		Less than 90%	
Weight		6 kg (13 lb 3 oz)	
Dimensions (W x H x D)		210 x 130 x 420 mm (8 3/8 x 5 1/8 x 16 5/8 inches)	
Tape speed		28.193 mm/s	28.221 mm/s
Recording/Playback time			
	Standard size	184 min. with PDV-184ME/184N/184MEM	
	Mini size	40 min. with PDVM-40ME/40N/40MEM	
Fast forward/Rewind time			
	Standard size	Less than 3 min. with PDV-184ME/184N/184MEM	
	Mini size	Less than 1 min. with PDVM-40ME/40N/40MEM	
Search speed			
	Shuttle mode	Still to ±60 times normal speed	
	Digital slow mode	±0.5 times normal speed	
● VIDEO PERFORMANCE			
Bandwidth (via analog component I/O)			
	Luminance	30 Hz to 5.0 MHz +1.0/-1.5 dB	25 Hz to 5.0 MHz +1.0/-1.5 dB
	Chrominance	30 Hz to 1.5 MHz +1.0/-5.0 dB	25 Hz to 2.0 MHz +1.0/-2.0 dB
S/N ratio (via analog component I/O)		More than 55 dB	
K-factor (K2T, KPB)		Less than 2.0%	
Y/C delay		Less than 30 ns	
● AUDIO PERFORMANCE			
Frequency response			
	2CH mode (48 kHz/16-bit)	20 Hz to 20 kHz ±1.0 dB	
	4CH mode (32 kHz/12-bit)	20 Hz to 14.5 kHz ±1.0 dB	
Dynamic range		More than 87 dB	
Distortion (THD + N)		Less than 0.07%	
● INPUT SIGNALS			
VIDEO (ANALOG)			
REF. Video (BNC x 2, loop-through connection)		Composite, 1.0 Vp-p, 75 Ω, sync negative	
Video (BNC x 2, loop-through connection)*1 * using optional DSBK-1504		Composite, 1.0 Vp-p, 75 Ω, sync negative	
Component (BNC x 3)*1 * using optional DSBK-1504		Y: 1.0 Vp-p, 75 Ω, sync negative R-Y: 0.7 Vp-p, 75 Ω (75%) B-Y: 0.7 Vp-p, 75 Ω (75%)	Y: 1.0 Vp-p, 75 Ω, sync negative R-Y: 0.7 Vp-p, 75 Ω (100%) B-Y: 0.7 Vp-p, 75 Ω (100%)
S-Video (BNC x 2)*1 * using optional DSBK-1504		Y: 1.0 Vp-p, 75 Ω, sync negative C: 0.286 Vp-p, 75 Ω (at burst level)	Y: 1.0 Vp-p, 75 Ω, sync negative C: 0.3 Vp-p, 75 Ω (at burst level)
VIDEO (DIGITAL)			
SDI (BNC x 1)*2 * using optional DSBK-1501		Conforms to Serial Digital Interface (270 Mb/s), SMPTE 259M	Conforms to Serial Digital Interface (270 Mb/s), ITU-R BT.656
SDTI (QSDI) (BNC x 1)*2 * using optional DSBK-1501		Conforms to SDTI (270 Mb/s), SMPTE 305M/322M	
i.LINK (DV In/Out) (6-pin x 1) * using optional DSBK-1503		IEEE 1394-based	
AUDIO (ANALOG)			
Audio (XLR 3-pin female x 2) * using optional DSBK-1504		-6/0/+4 dBu, high impedance	-6/-3/0/+4 dBu, high impedance
AUDIO (DIGITAL)			
AES/EBU (BNC x 2) * using optional DSBK-1501		75 Ω, unbalanced	
TIME CODE			
Time Code In (BNC x 1)		0.5 Vp-p to 18 Vp-p, 3 kΩ unbalanced	
● OUTPUT SIGNALS			
VIDEO (ANALOG)			
Video 1/2/3(SUPER) (BNC x 3)*3		Composite, 1.0 Vp-p, 75 Ω, sync negative	
Component (BNC x 3)*3		Y: 1.0 Vp-p, 75 Ω, sync negative R-Y: 0.7 Vp-p, 75 Ω (75%) B-Y: 0.7 Vp-p, 75 Ω (75%)	Y: 1.0 Vp-p, 75 Ω, sync negative R-Y: 0.7 Vp-p, 75 Ω (100%) B-Y: 0.7 Vp-p, 75 Ω (100%)
S-Video (BNC x 2)*3		Y: 1.0 Vp-p, 75 Ω, sync negative C: 0.286 Vp-p, 75 Ω (at burst level)	Y: 1.0 Vp-p, 75 Ω, sync negative C: 0.3 Vp-p, 75 Ω (at burst level)
VIDEO (DIGITAL)			
SDI (BNC x 2)*4 * using optional DSBK-1501		Conforms to Serial Digital Interface (270 Mb/s), SMPTE 259M	Conforms to Serial Digital Interface (270 Mb/s), ITU-R BT.656
SDTI (QSDI) (BNC x 2)*4 * using optional DSBK-1501		Conforms to SDTI (270 Mb/s), SMPTE 305M/322M	
i.LINK (DV In/Out) (6-pin x 1) * using optional DSBK-1503		IEEE 1394-based	
AUDIO (ANALOG)			
Audio (XLR 3-pin male x 2)		-6/0/+4 dBu (selectable by menu)	-6/-3/0/+4 dBu (selectable by menu)
Monitor (RCA x 1)		-∞ to +1 dBu, 47 Kω, unbalanced (-20 dBFS)*5	
Headphone (JM-60 headphone jack x 1)		-∞ to -13 dBu, 8 Ω, unbalanced (-20 dBFS)	
AUDIO (DIGITAL)			
AES/EBU (BNC x 2) * using optional DSBK-1501		75 Ω, unbalanced	
TIME CODE			
Time Code Out (BNC x 1)		2.2 Vp-p, 75 Ω, unbalanced	
● REMOTE			
RS-422A		D-sub 9-pin (female) x 1	
Control S (SIRCS)		Stereo mini jack x 1	
● SUPPLIED ACCESSORIES			
AC power cord x 1 Operating instructions x 1			

*1: Video, Component and S-Video inputs share the same BNC connectors. *2: SDI and SDTI (QSDI) inputs share the same BNC connectors. *3: Video, Component and S-Video outputs share the same BNC connectors. *4: SDI and SDTI (QSDI) outputs share the same BNC connectors.
*5: The volume of monitor can be controlled by the PHONE LEVEL control knob.

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