SONY®

DVCAM ™

DSR-1500A
DSR-1500AP

For

Professional

Results

Master Series

Superb Multi-Environment

Application Flexibility

in a Compact Unit

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

With its wide range of interfaces from analog to digital, the DSR-1500A 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 and recording for linear or nonlinear editing.

The DSR-1500A is contained in a compact, half-rack design, making it ideal for installation in OB vehicles, desktop editing systems or in locations where space is at a premium.

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-1500A to be used in a broad range of applications.

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

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

Digital Videocassette Recorder

DSR-1500A

Main Features

The DVCAM Format for Professional Performance

The DSR-1500A 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.
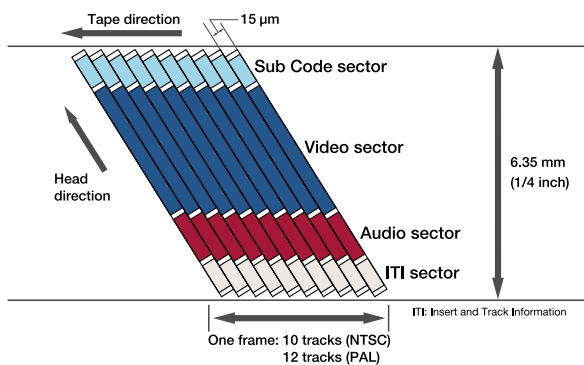
It also offers superior digital audio performance, providing a wide dynamic range and excellent signal-to-noise ratio, comparable to CD quality. Alternative audio channel modes can be selected: a two-channel mode with 48 kHz/16-bit recording or a four-channel mode with 32 kHz/12-bit recording. DVCAM 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.

Mini-size cassette   Standard-size cassette
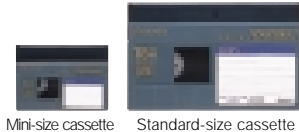
Playback Compatibility with DV (25 Mb/s) Family Formats

For maximum versatility, the DSR-1500A 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) interface.

Versatile Interfaces

A range of versatile interfaces is available, allowing flexible analog and digital system configurations. Users can choose from this range of interfaces to configure the DSR-1500A to their individual requirements. These various interfaces enable the DSR-1500A to function as a compact, high-performance professional editing VTR.

■ i.LINK™ Interface

Standard on the DSR-1500A is the i.LINK interface which is based on the IEEE 1394 standards. The i.LINK interface enables 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-1500A with i.LINK-equipped compatible nonlinear editing systems and other computer-related products.

• i.LINK is a Sony trademark used only to designate that a product is equipped with an IEEE 1394 connector. All products with an i.LINK connector may not communicate with each other. Please refer to the documentation that comes with any device having an i.LINK connector for information on compatibility, operating conditions, and proper connection.
• **ᵢ** is the logo for products that are equipped with an i.LINK connector.

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

The optional DSBK-1501 Digital Input/Output Board provides the DSR-1500A with SDI*, SDTI (QSDI™)* and AES/EBU digital audio interfacing. Using SDI provides a direct video/audio I/O between the DSR-1500A and digital equipment such as Digital Betacam™, MPEG IMX™ 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. The SDTI (QSDI) allows virtually degradation-free transfer of both video and audio signals between the DSR-1500A and other SDTI (QSDI) interface equipped compatible 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.

■ 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.

Wide Range of Analog Outputs

As standard, the DSR-1500A 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-1500A 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.

Consumer DV Format Recording

Should you require a longer record time than what is available with the DVCAM format, the DSR-1500A can also record in the consumer DV format (SP mode, 10-µm track pitch recording only). A standard-size DVCAM cassette can record for up to 276 minutes, while a mini-size cassette records for up to 60 minutes.

*Assemble or insert editing is not possible in the consumer DV format mode. However, back space editing is possible using the optional DSRM-10 Remote Control Unit. The transition from cut to cut may not be smooth when performed over a DV recording made on a different DV or DVCAM deck. In between scenes where the recording format is changed from DVCAM to the consumer DV format, the transition may not be smooth either. This is a normal and expected phenomenon.
*The audio reference level is fixed to -12 dB.

Compact Design - Ideal for Desktop Editing Style

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

Excellent Digital Slow Motion and Jog Sound

The DSR-1500A provides a variable speed playback function with a range of -0.5 to +0.5 times normal play speed. Within this range, the DSR-1500A 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.

Audio Level Control

Audio levels can be adjusted with the control knobs on the front panel. In recording mode, the input level of analog, SDI, AES/EBU, SDTI (QSDI) and i.LINK can be adjusted. While in the playback mode, the analog, SDI and AES/EBU output levels can be controlled.

Picture Search by Menu Keys

The DSR-1500A 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-1500A 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-1500A provides this feature 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 (100V to 240 V, 50/60 Hz), low power consumption (55 W)
■ VITC (Vertical Interval Time Code)
■ ClipLink™ Operation
■ Closed Caption Function (NTSC model only)
■ Video Processor Control via Menu
■ Time Code Input/Output
■ RS-422A and SIRCS (Sony Integrated Remote Control System) interface

— Front View
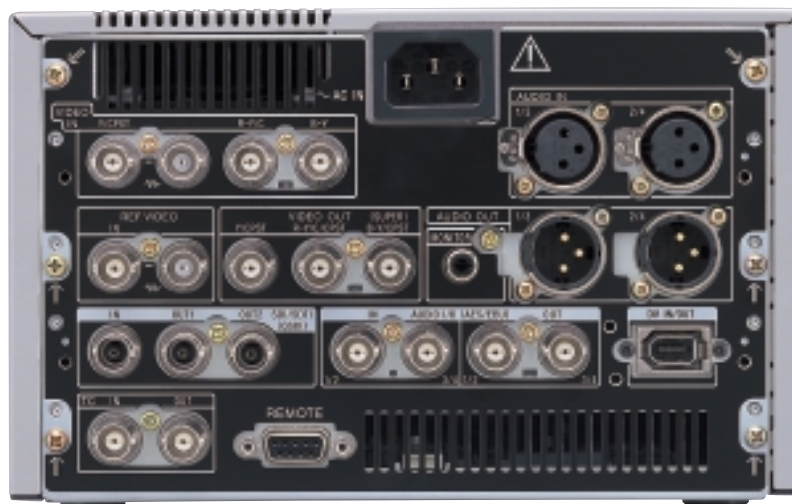
— Rear View (with DSBK-1501 and DSBK-1504)

Application Examples

Feeder/Editor for i.LINK-based Compatible Nonlinear Editing System

- Superb picture and sound quality via an i.LINK interface through the entire production process
- Video, audio, time code and control are provided through a single i.LINK connector for simple system connection
- Space-saving design, ideal for desktop editing

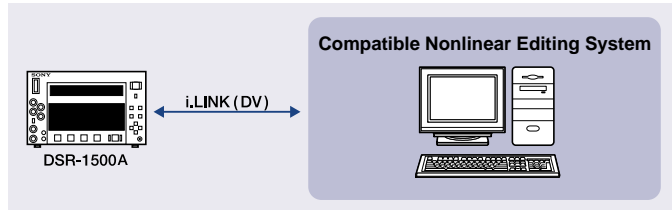**DSR-1500A** — i.LINK (DV) → **Compatible Nonlinear Editing System**

Feeder/Editor for SDI-based/SDTI-based Compatible Nonlinear Editing Systems
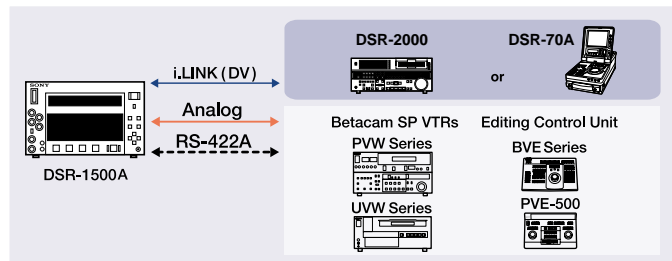
- High picture quality and sound quality by use of SDI and AES/EBU, or SDTI (QSDI) interfacing
- Ideal as a feeder/editor machine in a nonlinear editing system
- Space-saving design, ideal for desktop editing

DSR-1500A — SDI or SDTI (QSDI) / RS-422A → **Compatible Nonlinear Editing System**
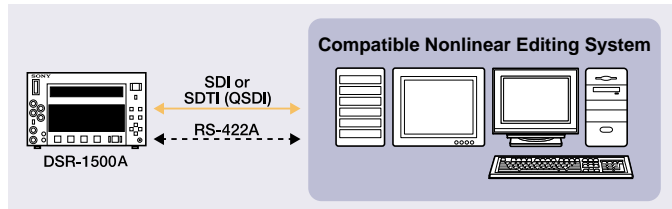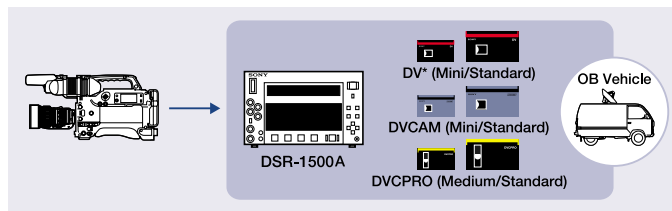
Feeder/Editor for Linear Editing Systems

- Ideal as a feeder machine for two-machine editing or for A/B-roll editing when used with an editing controller
- Easy to integrate into a current analog editing system by use of analog interfaces

*4-channel independent audio editing is not supported.

DSR-1500A — i.LINK (DV) / Analog / RS-422A →

DSR-2000 or **DSR-70A**

Betacam SP VTRs — PVW Series / UVW Series

Editing Control Unit — BVE Series / PVE-500

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

DSR-1500A →

DV* (Mini/Standard)

DVCAM (Mini/Standard)

DVCPRO (Medium/Standard)

OB Vehicle

* SP mode only

Peripheral Equipment & Optional Accessories

DSR-570WS/570WSP
Digital Camcorder

DSR-370/370P
Digital Camcorder

DSBK-1501
Digital 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-12N/22N/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-1500A	DSR-1500AP
● GENERAL				
Power requirements			AC 100 V to 240 V, 50/60 Hz	
Power consumption			55 W (with all options)	
Operating temperature			5 °C to 40 °C (41 °F to 104 °F)	
Storage temperature			-20 °C to 60 °C (-4 °F to 140 °F)	
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. (DVCAM mode)/276 min. (DV SP mode) with PDV-184ME/184N/184MEM	
	Mini size		40 min. (DVCAM mode)/60 min. (DV SP mode) 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)			0.286 Vp-p, 75 Ω, sync negative	0.3 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)			IEEE 1394-based	
AUDIO (ANALOG)				
Audio (XLR 3-pin female x 2) * using optional DSBK-1504			-6/0/+4 dBu (selectable by menu), high impedance	-6/-3/0/+4 dBu (selectable by menu), 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)			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)*5			-∞ to -11 dBu, 47 kΩ, unbalanced (-20 dBFS)	-∞ to -9 dBu, 47 kΩ, unbalanced (-18 dBFS)
Headphone (JM-60 headphone jack x 1)			-∞ to -13 dBu, 8 Ω, unbalanced (-20 dBFS)	-∞ to -11 dBu, 8 Ω, unbalanced (-18 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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