

SONY®

Video Disk Recorder

DSR-DR1000A/DR1000AP



DVCAM™

An Affordable, yet Powerful DVCAM Hard Disk Recorder, Offering a Further Enhanced Level of Operational Convenience and New Opportunities

Since its introduction in 2002, the DSR-DR1000*¹ DVCAM™ Hard Disk Recorder has been well received thanks to powerful features such as instant random access capability, high-quality slow-motion replay, and unique VTR-like operational feel. A large number of units have now been installed in a wide variety of applications, including sports events, playout systems in small to medium-scale broadcast stations, backup recording during events and shows, high-quality surveillance and observation, as well as straight recording and edit-feeding applications.

Sony has now introduced the new DSR-DR1000A*¹, an enhanced version of the DSR-DR1000, to provide extended recording time and improved control functions. Equipped with a large-capacity hard disk, it provides a very long recording time of up to 12 hours of DVCAM stream recording. It also provides other proven features such as instant random access to clips, simultaneous recording and playback capability, and high-quality slow-motion replay. In addition, seamless repeat playback*² is possible within one clip, all clips, desired multiple clips, or any desired clip segments. Moreover, in combination with the optional RM-280 Editing Controller, a compact, affordable but powerful slow-motion replay system can be established.

Providing many disk-based benefits and a high level of operability, the DSR-DR1000A can be a powerful tool for all video professionals, offering new broadened opportunities.



SONY Video Disk Recorder

DSR-DR1000A

Photo shows the DSR-DR1000A.

*¹ In this brochure, "DSR-DR1000" and "DSR-DR1000A" refer to both the DSR-DR1000 and DSR-DR1000A for NTSC.

*² Repeat playback of multiple clips/clip segments requires an external remote controller.

Features

Product Overview

Extensive DVCAM-stream Recording Time

The DSR-DR1000A incorporates a large-capacity hard disk, which can record up to 12 hours of 25 Mb/s DVCAM/DV video and audio. The video and audio signals are stored together on the hard drive as clips.

Compact and Lightweight - Ideal for Desktop-style Operation

With its compact, half-rack width, 3U design, the DSR-DR1000A is ideal for desktop nonlinear editing systems or for installation in space-constrained environments such as OB vehicles.

Useful Hard-Disk Features

Simultaneous Recording and Playback

A key advantage of the DSR-DR1000A over a VTR is its ability to record video and audio while at the same time playing back video and audio. This is especially useful for live and sport events, as it allows the operator to replay program highlights while the program continues to be recorded. What's more, the playback speed* can be altered even during recording - allowing replays to be shown in slow motion.

* The playback speed range during simultaneous recording/playback is ± 1 times normal speed.

Random Access to Files

With the DSR-DR1000A, a clip is created for each recording that is made between Record Start and Record Stop. These clips are stored on the DSR-DR1000A as files, allowing users to quickly locate the desired materials.

The DSR-DR1000A allows cue points to be marked on desired clips within the recording for immediate cue up and replay of desired scenes - a huge benefit when using the unit for live events or sports programming. Cue points can be marked during recording using the DSR-DR1000A control panel, the supplied remote controller (RM-LG2), or the optional RM-280 Editing Controller. What's more, the DSR-DR1000A can be controlled by external devices supporting Sony Virtual File List (VFL) disk protocol via an RS-422A interface.



RM-LG2

Slow Motion Replay via the Optional RM-280 Editing Controller

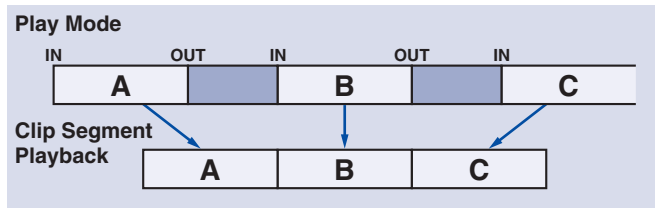
With the combined use of the DSR-DR1000A with the optional RM-280 Editing Controller via an RS-422A interface, a compact and cost-effective slow-motion replay system is available. Since remote

control buttons are simply arranged on the RM-280 control panel, operators can easily perform slow-motion replay operations. From the RM-280 controller, operators can easily set cue points during recording, and then clips can be quickly and easily replayed from these cue points. The speed of the slow-motion replay (0.2x, 0.5x, and 0.8x/1.0x/2.0x) and the pre-roll time (3, 5, and 7 seconds) can also be easily set.

This is especially useful for sports applications such as "instant replay" judgments and immediate large-screen projection of highlighted scenes.

Seamless Clip Segment Playback

The DSR-DR1000A offers a clip segment playback feature, which allows continuous playback of designated video segments. By simply marking the In and Out points (trimming points) of the desired segments, the DSR-DR1000A will automatically create and store a playlist. It can then play back this list - from one segment to the next - without breaks between segments. Up to four lists can be stored on the hard drive, and they can be displayed on a video monitor. This function is available using the DSR-DR1000A control panel or external control devices supporting Sony VFL disk protocol via an RS-422A interface.



Seamless Repeat Playback

The DSR-DR1000A offers a seamless repeat playback feature. This feature allows a selected single clip, all clips, or a selected single clip segment to be seamlessly repeated. In addition, a seamless repeat playback of multiple clips or multiple clip segments is possible using external control devices supporting Sony VFL disk protocol via an RS-422A interface.

Continuous Loop Recording

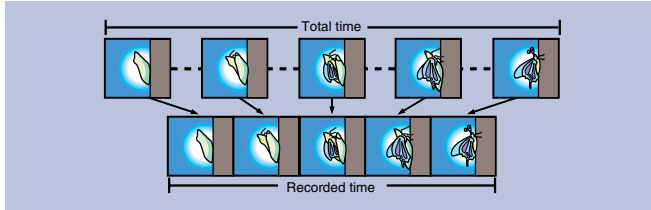
With Continuous Loop Recording, the DSR-DR1000A will continue to record until it is stopped by the operator. This is achieved by overwriting earlier recordings in the order they were made, and is especially effective in applications where recording cannot be interrupted for tape exchange, such as astronomical observation or animal and plant study.



— Front Panel

Interval Recording

The Interval Recording function enables the DSR-DR1000A to produce recordings over extended periods. When activated, the recorder will automatically toggle between Record mode and Record Standby mode at predetermined intervals. The record duration can be selected from 0.5, 1, 1.5 or 2 seconds and the standby time can be selected from 0.5, 1, 5 or 10 minutes. This feature is especially effective in scientific applications such as botanical observation.



Pre-alarm Recording

The Pre-alarm Recording function automatically triggers the DSR-DR1000A to start recording when an external alarm signal is detected. Because there is a continual 30-second buffer period of recording, the DSR-DR1000A will also record the content that happens 30 seconds prior to the alarm. This is a useful feature for observing events in which it is critical to know what happened before the event occurred.

Familiar Functionality and Operability

Variable Speed Playback and Smooth-jog Sound

The DSR-DR1000A offers variable-speed playback within a wide range of -2 to +2 times normal speed. This wide slow-motion range helps you to create unique and sophisticated content. The playback speed can be controlled in 1% increments from an appropriate editor or external remote controller. The DSR-DR1000A also provides noiseless digital slow images with smooth jog sound, making it easy to designate editing points.

VTR-like Control Panel with Jog/Shuttle Dial

To maintain a familiar VTR-like feel, the DSR-DR1000A provides front-panel controls for functions such as Play, Stop, Next, Previous and Record. The Next and Previous buttons allow you to locate the top of the following and previous clips respectively, and the Jog/Shuttle dial provides convenient search operability.

Synchronous Playback

The DSR-DR1000A is equipped with two RS-422A terminals, making it possible to cascade multiple units for simultaneous playout. This is particularly effective in multi-screen display applications where the playback signal needs to be synchronized.

Versatile Interfaces


The DSR-DR1000A is equipped with the following connectors as standard - providing easy integration into various system layouts.

Inputs:	component, composite, i.LINK, SDI, S-Video, analog audio (2 ch., XLR x2), AES/EBU (4 ch., BNC x2)
Outputs:	component, composite, i.LINK, SDI, S-Video, monitor output, analog audio (two selected channels, XLR x2), AES/EBU (4 ch., BNC x2)
Control:	RS-422A, (contact switch)
Others:	time code I/O, reference video, Ethernet

Dual i.LINK* Protocols for Greater Efficiency

i.LINK Interface (6-pin) with AV/C and SBP2 Protocols

The i.LINK connector provided on the DSR-DR1000A supports two protocols - AV/C and SBP2. The AV/C protocol is used for AV transfer of DVCAM/DV streams, as used in conventional VTR-to-VTR dubbing. This protocol allows the DSR-DR1000A to be connected to VTRs and nonlinear editors that are compatible with the Sony i.LINK (DV) interface. Similarly, the SBP2 protocol allows file transfer of DVCAM/DV streams to nonlinear systems that are SBP2 compatible.

* i.LINK is a trademark of Sony used only to designate that a product contains an IEEE 1394 connector. Not all products with an i.LINK connector may communicate with each other. Please refer to the documentation included with any device that has an i.LINK connector for information on compatibility, operating conditions and proper connection.  is the logo for products implementing i.LINK.

High Speed File Transfer

With the SBP2 protocol, clips stored on the DSR-DR1000A can be selected on a file basis from the GUI of the compatible nonlinear editor and then transferred to the editor's hard drive at a high speed*. This effectively reduces the time required for material transfer.

Another time consuming process common to nonlinear editing systems is logging. The DSR-DR1000A streamlines the process by storing the time-code values generated during recording and transferring them to the nonlinear editor together with the material files.

* The time required to transfer clips from the DSR-DR1000A may vary depending on the nonlinear editor used. In the case of downloading clips from a nonlinear editor to the DSR-DR1000A, only the AV/C protocol can be used and therefore only real-time speed is supported.

Network Function

File Transfer Using FTP

The DSR-DR1000A comes equipped with a standard 10Base-T/100Base-TX Ethernet connector. This enables file transfer across a network using the File Transfer Protocol. Moreover, the DSR-DR1000A allows easy and quick selection of the segment to be transferred, thus optimizing transfer efficiency.

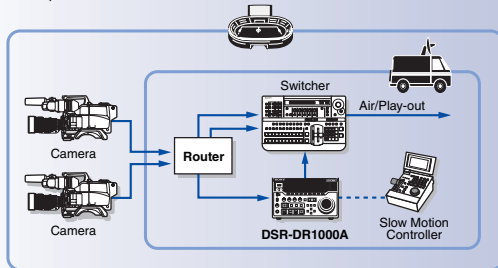


— Rear Panel

Application Examples

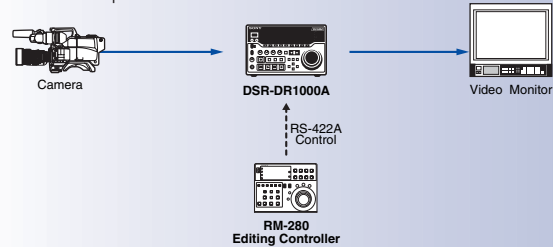
Sports/Small OB-van Application

- Variable speed playback over the range of ± 2 times normal speed
- Simultaneous recording and playback
- Compact half-rack size



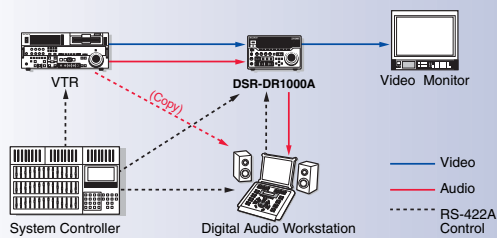
Slow-motion Replay System

- Compact and affordable slow-motion replay system
- Simultaneous recording and playback
- Variable speed playback
- Variable pre-roll time



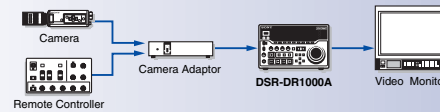
Audio Sweetening Application

- Random access to files



Continuous Monitoring Application

- 12-hour recording time
- Continuous Loop recording
- Pre-Alarm recording



■ Observation

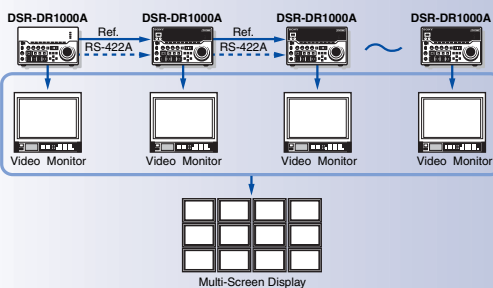
Weather, flower blooming, scientific research etc.

■ Other Recording Purposes

Class, Sports, Training etc.

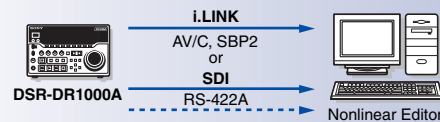
Multi-screen Display Application

- Synchronous playback



Source Feeding to a Nonlinear Editing System

- i.LINK interface with AV/C or SBP2 protocol
- SDI interface



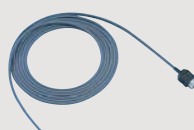
Peripheral Equipment and Optional Accessories



RM-280
Editing Controller



RCC-5G
9-pin Remote Control Cable
(5 m)



CCF-3L
DV Cable
(6-pin with lock to 6-pin)



CCFD-3L
DV Cable
(6-pin with lock to 4-pin)

Specifications

	DSR-DR1000A	DSR-DR1000AP
● General		
Power requirements	AC 100 V to 240 V, 50/60 Hz	
Power consumption	75W	
Operating temperature	41 °F to 104 °F (5 °C to 40 °C)	
Storage temperature	-4 °F to 140 °F (-20 °C to 60 °C)	
Operating humidity	Less than 80%	
Storage humidity	Less than 90%	
Weight	16 lb 10 oz (7.5 kg)	
Dimensions (W x H x D)	8 3/8 x 5 1/8 x 16 5/8 inches (210 x 130 x 422 mm, without projection)	
Recording/playback time	12 hours	
● Video Performance		
Bandwidth (via analog component I/O)		
Luminance	30 Hz to 5.0 MHz ±1.0	25 Hz to 5.0 MHz ±1.0
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 54 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% (48 kHz)	
● Input Signals		
Video (Analog)		
REF. Video (BNC x 2)	0.286 Vp-p, 75 Ω, sync negative	0.3 Vp-p, 75 Ω, sync negative
Composite Video (BNC x 2), loop-through connection**	1.0 Vp-p, 75 Ω, sync negative	
Component (BNC x 3)**	Y: 1.0 Vp-p, 75 Ω, sync negative R-Y: 0.7 Vp-p, 75 Ω (75% color bar) B-Y: 0.7 Vp-p, 75 Ω (75% color bar)	Y: 1.0 Vp-p, 75 Ω, sync negative R-Y: 0.7 Vp-p, 75 Ω (100% color bar) B-Y: 0.7 Vp-p, 75 Ω (100% color bar)
S-Video (BNC x 2)**	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)	Conforms to Serial Digital Interface (270 Mb/s), SMPTE 259M	Conforms to Serial Digital Interface (270 Mb/s), ITU-R BT.656
i.LINK(DV) (6-pin x 1)	IEEE 1394-based	
Audio (Analog)		
Audio (XLR 3-pin female x 2)	-6/0/+4 dBu (selectable by menu), high impedance	-6/-3/+4 dBu (selectable by menu), high impedance
Audio (Digital)		
AES/EBU (BNC x 2)	75 Ω, unbalanced	
Time Code		
Time Code In (BNC x 1)	0.5 Vp-p to 18.0 Vp-p, 3 kΩ, unbalanced	
● Output Signals		
Video (Analog)		
Composite 1/2 (SUPER) (BNC x 2)**	1.0 Vp-p, 75 Ω, sync negative	
Component (BNC x 3)**	Y: 1.0 Vp-p, 75 Ω, sync negative R-Y: 0.7 Vp-p, 75 Ω (75% color bar) B-Y: 0.7 Vp-p, 75 Ω (75% color bar)	Y: 1.0 Vp-p, 75 Ω, sync negative R-Y: 0.7 Vp-p, 75 Ω (100% color bar) B-Y: 0.7 Vp-p, 75 Ω (100% color bar)
S-Video (BNC x 2)**	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)	Conforms to Serial Digital Interface (270 Mb/s), SMPTE259M	Conforms to Serial Digital Interface (270 Mb/s), ITU-R BT.656
i.LINK (DV) (6-pin x 1)	IEEE 1394-based	
Audio (Analog)		
Audio (XLR 3-pin male x 2)	-6/0/+4 dBu (selectable by menu)	-6/0/+4 dBu (selectable by menu)
Monitor (RCA x 1)**	-∞ to -11 dBu, 47kΩ, unbalanced (-20 dBFS)	-∞ to -9 dBu, 47kΩ, unbalanced (-18 dBFS)
Headphone (JM-60 headphone jack x 1)	-∞ to -13 dBu, 8Ω, unbalanced (-20 dBFS)	-∞ to -11 dBu, 8Ω, unbalanced (-18 dBFS)
Audio (Digital)		
AES/EBU (BNC x 2)	75 Ω, unbalanced	
Time Code		
Time Code Out (BNC x 1)	2.2 Vp-p, 600 Ω, unbalanced	
● Remote		
RS-422A	D-sub 9-pin, female x 2	
Control	Mini jack x 1	
● Network		
Ethernet x 1	10/100 Base-T Ethernet, RJ-45 modular jack	
● Supplied Accessories		
	AC power cord x 1, RM-LG2 (Remote Control Unit) x 1, Operation manual (CD-ROM) x 1, Warranty card x 1	

*1: Composite, Component and S-video inputs share the same BNC connectors. *2: Composite, Component and S-video outputs share the same BNC connectors.

*3: The volume of monitor can be controlled by the PHONE LEVEL control knob.

SONY

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Halogenated flame retardants are not used in printed wiring boards.

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