PDW-R1

XDCAM Professional Disc field recorder

Overview

The compact, lightweight PDW-R1 Mobile Recorder Deck is ideal for field recording applications as well as desktop viewing by journalists, producers, and other production staff. An affordable solution for recording and playing back Professional Discs on the field, the PDW-R1 can also replay AV and associated data files recording via its i.LINK (File Access Mode) interface or a standard Ethernet network connection. The PDW-R1 offers scene selection capability that can be viewed via its colour LCD screen.

New "Non-linear" Recording Medium

Professional Discs have a natural advantage since they suffer no mechanical contact during recording or playback, making the format ideal for continuous use and re-use (up to 10 000 times!). The Professional Disc is also highly resistant to dust, shock and scratches, packaged in an extremely durable and dust-resistant cartridge. It is resistant to heat, humidity and X-rays - factors that make the Professional Disc ideal for use in harsh field environments, and also allows for long media life and long-term storage (50 Years). Finally, despite all its inherent benefits - instant access, high speed transfer and exceptional reliability - Professional Discs still cost the same price as a tape and consequently can be perceived as a media.

Enhanced Ergonomic

With all Sony XDCAM products, a thumbnail is automatically

generated to represent each recording made. As is common in non-linear editing systems, these thumbnails allow for instant access and playback of clips. The Essence Marks used in Sony XDCAM products are also a very useful form of metadata and provide a most effective way of searching for recordings via thumbnail pictures. Essence Marks can be set during the shoot either manually or automatically.

Benefits of Proxy AV Data

Proxy AV Data is a low-resolution, MPEG-4 based version of the full-resolution MPEG IMX/DVCAM stream. When a recording is made (in file mode only for PDW-R1), a Proxy AV stream that is time code synchronized with the full-resolution stream, is also recorded automatically on the disc. This Proxy AV Data, which is smaller in size, is easier to work with and can be transferred over common networks at much greater speeds. Proxy AV Data is highly effective for tasks where video and sound quality are of less concern, but content delivery speed is essential. The typical benefits of its use include 'Remote Content Browsing' and 'Proxy Editing'.

IT-friendly System

In the Sony XDCAM Series of products, recordings are made as data files – one for each video or audio clip. This allows material to be handled with great flexibility in an IT-based networked environment – and easily available for copying, transferring, sharing and archiving to other IT-based devices. This file-based recording system also allows material to be viewed directly on a PC linked to the XDCAM decks or camcorders via a i.LINK (file access mode) connection – just as a PC reads files on an external drive.

Seamless Integration into Current VTR-based Systems

In order to achieve seamless integration into current tape based systems, a great deal of thought has been put into the

development of Sony XDCAM products. A range of conventional AV interfaces including SDI, analogue video and analogue audio output allows easy connectivity to current equipment, including a wide variety of VTRs, linear and non-linear editors, and audio mixers.

Features

MPEG IMX/DVCAM Recording and Playback
High-resolution AV files (MPEG IMX/DVCAM) and Proxy AV (low-resolution audio and video) files can be recorded via its Ethernet interface or i.LINK (file access mode) interfaces. High-speed transfer of proxy AV data at 30-times speed via its i.LINK (file access mode) interface

Extensive Range of Interfaces
Sony PDW-R1 comes equipped with a wide range of interfaces. In the traditional AV world it offers SDI output, analogue composite output, analogue audio output, headphone output and i.LINK AVC output. However in addition it offers SDI input, composite and analogue audio input, TC input and i.Link AVC input. While for a smooth integration into an IT world it proposes input and output for both Ethernet 100Bt and i.Link (File Access Mode) in order to browse and use XDCAM files directly on your PC.

3.5 inch Type Colour LCD Screen
The integrated 3.5-inch screen allows users to view recordings and edit Professional Disc EDLs anytime, anywhere without the need for an external video monitor.

AC/DC battery -powered operation
The PDW-R1 can be AC or DC battery powered. A feature that proves convenient in the field.

Long Playback Time
MPEG IMX at 30 Mb/s: 68 min., 40 Mb/s: 55 min., 50 Mb/s: 45 min.,

DVCAM: 85 min.

Metadata Recording
Ability to write EDL data (Clip List) back onto disc, Compact, lightweight design

Allows Transfer Speeds
1.25x for MPEG IMX (at 50 Mb/s) and 2.5x for DVCAM streams equipped with one optical head via its i.LINK (file access mode) interface

Network Connectivity
100 Base TX

Search Speed in Colour
JOG: -2 to 2 times normal speed, Shuttle: +-20 times normal speed i.LINK (DV stream) output from MPEG IMX playback

Other Features
Thumbnail Search Operation Scene Selection Operation Proxy AV Data Recording Ability to write EDL back onto disc Metadata recording: UMID, Extended UMID, Essence Marks Built-in Audio Speaker

Specifications

General	
Power Requirements	AC 100 V to 240 V, 50/60 Hz, DC +12 V, Battery
Power Consumption	37 W
Operating Temperature	0°C to 40°C 32°F to 104°F

Storage Temperature	-20°C to +60°C -4°F to +140°F
Humidity	20% to 90% (relative humidity)
Mass	4.7 kg 10 lb 6 oz
Dimensions (W x H x D) *1	230 x 105 x 340 mm (excluding protrusions) 9 1/8 x 4 1/4 x 12 inches (excluding protrusions)
Recording/Playback Format (Video)	MPEG IMX (50/40/30 Mbps) DVCAM (25 Mbps)
Recording/Playback Format (Audio)	MPEG IMX: 8 ch/16 bits/48 kHz or 4 ch/24 bits/48 kHz DVCAM: 4 ch/16 bits/48 kHz
Recording/Playback Format (Proxy Video)	MPEG-4
Recording/Playback Format (Proxy Audio)	A-law (8 ch/8 bits/8 kHz)
Recording/Playback Time (MPEG IMX)	50 Mbps: Approx. 45min (PFD23A) 40 Mbps: Approx. 55min (PFD23A) 30 Mbps: Approx. 68 min (PFD23A)
Recording/Playback Time (DVCAM)	25 Mbps: Approx. 85 min (PFD23A)

Search Speed Range (Shuttle Mode)	-20 times to +20 times normal speed
Search Speed Range (Variable Mode)	-1 time to +1 time normal speed
Search Speed Range (Jog Mode)	-1 time to +1 time normal speed

Media Drive

Media Type	Professional Disc Drive (x1)

Input/Output

Reference Input	BNC (x1), SD composite sync (0.286 Vp-p/75 Ω/sync negative)
Analog Composite Input	BNC (x1), 1.0 Vp-p/75 Ω/negative, SMPTE 170M
SD-SDI Input	BNC (x1), SMPTE 259M (w/embedded audio)
Analog Audio Input	XLR-type 3-pin (female) (x2) (channel selectable), +4/0/-3/-6 dBu (selectable), 10 kΩ, balanced
Digital Audio Input (AES/EBU)	BNC (x2), 4 ch (2 ch each, 1/2 ch and 3/4 ch), AES-3id-1995

Timecode Input	BNC (x1), SMPTE timecode, 0.5 Vp-p to 18 Vp-p/3.3 kΩ/unbalanced
Analog Composite Output	BNC (x2), 1: 1.0 Vp-p/75 Ω/negative, SMPTE 170M 2: 1.0 Vp-p/75 Ω/negative, SMPTE 170M, character On/Off
SD-SDI Output	BNC (x1), SMPTE 259M (w/embedded audio), character on/off
Analog Audio Output	XLR-type 3-pin (male) (x2) (channel selectable), +4/0/-3/-6 dBu (selectable), 600 Ω, Lo-Z, balanced
Digital Audio Output (AES/EBU)	BNC (x2), 4 ch (2 ch each, 1/2 ch and 3/4 ch), AES-3id-1995
Headphone Output	JM-60 Stereo phone jack (x1), -13 dBu, 8 Ω, unbalanced
Timecode Output	BNC (x1), SMPTE timecode, 2.2 Vp-p ± 3.0 dB/600 Ω/unbalanced
i.LINK	IEEE 1394 6-pin (x1) AV/C (DV) IN/OUT or File Access Mode (selectable)
Ethernet	RJ-45 (x1) 100BASE-TX: IEEE802.3u

	10BASE-T: IEEE802.3
Remote Input (9-pin)	D-sub 9-pin (female) (x1), RS-422A
DC Input (12 V)	XLR-type 4-pin (male) (x1)
DC Output (12 V)	4-pin (female) (x1), DC 12 V, 7.5 W
AC Input	AC Input (x1), 100 V to 240 V, 50/60 Hz

Video Performance

Sampling Frequency	Y: 13.5 MHz, R-Y/B-Y: 6.75 MHz
Quantization	10 bits/sample
Error Correction	Reed Solomon Code

Processor Adjustment Range

Video Level	-∞ to +3 dB
Chroma Level	-∞ to +3 dB
Set Up/Black Level	-30 IRE to +30 IRE/-210 mV to +210 mV
Chroma Phase	-30° to +30°
System Sync Phase	-3 μs to +3 μs
System SC Phase	-200 ns to +200 ns

Audio Performance

Sampling Frequency	48 kHz
Quantization	24 bits
Frequency Response	20 Hz to 20 kHz +0.5/-1.0 dB (0 dB at 1 kHz)
Dynamic Range	More than 90 dB
Distortion	Less than 0.05% (at 1 kHz)
Headroom	20/18/16/12 dB (selectable)

Other Equipment

Built-in Display	3.5-inch type color LCD monitor
Built-in Speaker	Monaural (x1)

Supplied Accessories

Supplied Accessories	Operation manual (1) Installation manual (1) XDCAM Application Software CD-ROM (1)

Notes

Note	[*1] The values for dimensions are approximate.

Gallery