SONY

PDW-F800

XDCAM HD422 Camcorder

PDW-F1600

XDCAM HD422 Recording Deck

Sony's top-of-the-line XDCAM® HD422 Series is being embraced around the world for its file-based recording capability utilizing high-capacity and highly reliable Professional Disc™ media. Thanks to its newly developed MPEG HD422 codec, the XDCAM HD422 Series provides high quality video and audio recording capabilities, with an image resolution of 1920 x 1080 and eight-channel 24-bit uncompressed audio.

Now, Sony is proud to announce two new powerful additions to the series – the PDW-F800 camcorder and the PDW-F1600 deck. They both offer multi-format recording flexibility as standard – including SD recording and a frame rate of 23.98P in 1080 mode.

The PDW-F800 camcorder builds on the features of the PDW-700 camcorder. Enhanced functions, such as Slow & Quick Motion (over-crank and under-crank recording), make the PDW-F800 ideal for cinema and TV drama productions, as well as ENG applications.

The foundation of the PDW-F1600 deck incorporates the features of the PDW-HD1500, and acts as more than just a file-based recording deck. With its insert/assemble editing capability, it can be used as a recorder in a linear editing system – just like a conventional VTR.

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XDCAM HD Professional Disc System MPEG HD422 CINEALTA Professional Disc DL

For a new Era of File-based HD Production – the PDW-F800 and PDW-F1600

Common Features of the PDW-F800 and the PDW-F1600

■ MPEG HD422 codec
- HD 1920 x 1080 and 1280 x 720 recording
- High quality 24-bit eight channel uncompressed audio recording*1

■ Wide choice of recording modes: including 23.98P format recording and playback as standard

■ Supports a choice of HD (MPEG HD*2) and SD (MPEG IMX/DVCAM™) recording modes as standard

■ Built-in up-/down-conversion (HD/SD) and cross-conversion (1080/720) system

■ Dual-layer (50GB, PFD50DLA) and single-layer (23.3GB, PFD23A) Professional Disc media support

PFD50DLA

PFD23A

■ File-based search operation
- Thumbnail search function
- Expand function
- Clip Filtering

■ Proxy Data (1.5 Mb/s for video and 0.5 Mb/s for audio) and metadata recording

■ Scene Selection: simple EDL-based cuts-only editing

■ Metadata recording: UMID, Extended UMID, EssenceMark™ (Shot Mark), Clipflag

■ Easy metadata input via USB keyboard*3 or software keyboard

■ i.LINK™*4 interface (File Access Mode)

■ Ethernet interface (PDW-F800: 100Base-TX, PDW-F1600: 1000Base-T)

■ FTP client capability: allows file transfer via Ethernet without a PC

■ Clip Continuous REC mode*5

■ Single Clip Playback: allows users to play back just one selected clip

■ Data file recording by User Data folder: allows recording of any file type onto Professional Disc media

■ Local language in clip/disc properties: Chinese, German, French, Korean, Japanese, Russian, Spanish, and more

Local Language Support

*1: Audio specifications vary according to product and recording mode (up to four channels with the PDW-F800).

*2: 18 Mb/s mode is playback only.

*3: Some keyboards can not be used. Please refer to the supplied manual for details.

*4: i.LINK is a Sony trademark used only to designate that a product is equipped with an IEEE 1394 connector. Not all products with an i.LINK connector may 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.

*5: PDW-F1600 must be remotely controlled via RS-422A interface, or during Trigger REC mode via an HD-SDI interface.

PDW-F800 & PDW-F1600 Recording/Playback Specifications

Mode (Codec)	Number of Pixels	Bit Rate (Mb/s)	Audio Bits	Audio Channels	Y/C Sampling	Frame Frequency	Recording Time (Unit: Minutes)	
							PFD23A 23.3 GB	PFD50DLA 50 GB
MPEG HD422 (MPEG-2 4:2:2P@HL)	1920 x 1080	50	24	8*2	4:2:2	59.94i, 50i, 29.97P, 25P, 23.98P	Approx. 43	Approx. 95
	1280 x 720					59.94P, 50P, 23.98P (Pull-down)	Approx. 43	Approx. 95
MPEG HD (MPEG-2 MP@HL)	1440 x 1080	35	16	4	4:2:0	59.94i, 50i, 29.97P, 25P, 23.98P	more than 65	more than 145
				2*1			more than 68	more than 150
		25		4			Approx. 85	Approx. 190
				2*1			Approx. 90	Approx. 200
		18*1		4*1			more than 112	more than 248
				2*1			more than 122	more than 265
	1280 x 720	35	16	4	4:2:0	59.94P, 50P, 23.98P (Pull-down)	more than 65	more than 145
		25					Approx. 85	Approx. 190
MPEG IMX (MPEG-2 4:2:2P@ML)	720 x 480 (NTSC) / 720 x 576 (PAL)	50	24	4	4:2:2	59.94i, 50i	Approx. 45	Approx. 100
			16	8*2				
		40	24	4			Approx. 55	Approx. 120
			16	8*2				
		30	24	4			Approx. 68	Approx. 150
			16	8*2				
DVCAM	720 x 480 (NTSC) / 720 x 576 (PAL)	25	16	4	4:2:0 (NTSC) / 4:1:1 (PAL)	59.94i, 50i	Approx. 85	Approx. 185

*1: Playback only. *2: Up to 4 ch with PDW-F800.

PDW-F800 Features

■ Three 2/3-inch-type Power HAD™ FX CCDs, each with 1920 x 1080 effective pixels

Power HAD FX

■ High quality four channel 24-bit audio recording*1

■ Slow & Quick Motion function
(over-cranking and under-cranking shooting)
- 23.98P: 1P to 48P in 1P increments (24x-quick to 1/2x-slow motion)
- 25P: 1P to 50P in 1P increments (25x-quick to 1/2x-slow motion)
- 29.97P: 1P to 59.94P in 1P increments (30x-quick to 1/2x-slow motion)

■ Image Inverter for use with cinema lens adaptors

■ Variety of gamma settings
- HyperGamma: inherited from Sony's well-proven CineAlta camcorders
- User Gamma: users can set their desired gamma curve*2

PDW-F800 with cinema lens

■ Optical CC filters and ND filters
- CC : A.Cross, B.3200K, C.4300K, D.6300K
- ND : 1.Clear, 2.1/4ND, 3.1/16ND, 4.1/64ND

■ Automatic Lens Aberration Compensation*3

■ Focus Assist bar graph display on viewfinder

■ Auto Tracing White Balance & Hold mode

■ Output markers such as SkinG, Safety, Aspect, and Center on HD-SDI OUTPUT

■ Proxy Data recording on USB memory*4

■ Builds on the features of the well-proven PDW-700 camcorder
- 3.5-inch*5 LCD • Slow Shutter • Interval Recording
- Picture Cache Recording (up to 30 seconds) and Disc Exchange Cache • Shock-less Gain Control
- Digital wireless microphone system (Option: DWR-S01D)
- DVB-ASI output (Option: HDCA-702)
- Pool-feed operation (Option: CBK-HD01 (HD/SD-SDI), CBK-SC02 (Composite))
- Remote Control (Option: RM-B750/B150, MSU-950/900 and RCP-920/921/750751)
- And much more

*1: Audio specifications vary according to by recording mode (up to four channels).
*2: Using the CVP File Editor Software, available to download from the Sony website. User Gamma files can be imported to the PDW-F800 by Memory Stick®/Memory Stick PRO™/Memory Stick PRO Duo™.
*3: Works only with applicable lenses. Please contact lens manufacturers for details.
*4: Please contact your nearest Sony office for details of the applicable USB memory.
*5: Viewable area measured diagonally.

PDW-F1600 Features

■ Dual optical pick-up for higher-speed file transfer (approx. 220 Mb/s*1) via Gigabit Ethernet interface

■ High quality eight channel 24-bit audio recording*2

■ Suitable for both in-house and field operation

■ Linear editing*3 using RS-422A interface

Linear Editing Configuration Example
Player : PDW-HD1500
Recorder : PDW-F1600
Controller : RM-280
- Assemble edit • Audio/Video Insert
- A/V split edit

■ Audio insert input for five to eight channels through four AES/EBU inputs

■ Input audio channel mix capability: allows several audio channels to be mixed into a desired channel

■ Native 23.98P and pull-down (59.94i) playback

■ Builds on the features of the well-proven PDW-HD1500 deck
- 4.3-inch*4 LCD
- Built-in speaker
- AC, DC or battery powered
- Picture Cache Recording (up to 30 seconds) and Disc Exchange Cache
- Trigger REC function (synchronized recording with compatible camcorders*5)
- Input and output of an HDV™-compatible stream in 1080i/720P format (Option: PDBK-201)
- Compatible with Sony's PDJ-C1080 and PDJ-A640 XDCAM carts
- And much more

*1: When transferring an MPEG HD422 clip.
*2: Audio specifications vary according to recording mode.
*3: Not available in MPEG HD (35/25/18 Mb/s) modes.
*4: Viewable area measured diagonally.
*5: PDW-F800/700, HDW-650/730/750 series, HDW-790 and HDW-F900R camcorders.

SPECIFICATIONS

PDW-F800

General

Weight	Approx. 9 lb 8 oz (4.3 kg) (w/o options), Approx. 13 lb 4 oz (6.0 kg) (w/VF, Mic, Disc, BP-GL95 battery)	
Power requirements	DC 12 V +5.0 V/-1.0 V	
Power consumption	Approx. 40 W (while recording, w/o options, color LCD On) Approx. 44 W (while recording, w/viewfinder, color LCD On, manual lens, microphone)	
Operating temperature	+23 to 104 °F (-5 to +40 °C)	
Storage temperature	-4 to +140 °F (-20 to +60 °C)	
Humidity	10 to 90% (relative humidity)	
Continuous operating time	Approx. 120 min. w/BP-GL95 battery	
Recording/playback time	MPEG HD422 mode: Approx. 95 min. with PFD50DLA. Approx. 43 min. with PFD23A.	

Inputs/Outputs

SDI IN	BNC x 1*1 (switchable)	HD-SDI: SMPTE 292M (w/embedded audio) SD-SDI: SMPTE 259M (w/embedded audio)
GENLOCK IN	BNC x 1, 1.0 Vp-p, 75Ω, unbalanced (Composite input*2 shares the same connector)	
AUDIO IN	CH-1/CH-2: XLR 3-pin (female) x 2, Line / Mic / Mic+48V / AES/EBU selectable	
MIC IN	XLR 5-pin (female, stereo) x 1	
TC IN	BNC x 1, 0.5 to 18 Vp-p, 10 Ω	
SDI OUT	BNC x 2 — 1	HD-SDI: SMPTE 292M (w/embedded audio) SD-SDI: SMPTE 259M (w/embedded audio)
	BNC x 2 — 2 (character On/Off)	HD-SDI: SMPTE 292M (w/embedded audio) SD-SDI: SMPTE 259M (w/embedded audio)
TEST OUT	BNC x 1 (switchable)	HD Y SD Composite (character On/Off)
AUDIO OUT	XLR 5-pin (male, stereo) x 1	
TC OUT	BNC x 1, 1.0 Vp-p, 75Ω	
EARPHONE	Mini-jack x 2 (front: manaural, rear: stereo/monoral)	
CAMERA ADAPTOR	50-pin x 1	
i.LINK	6-pin x 1*3, File Access Mode	
ETHERNET	RJ-45 x 1, 100Base-TX: IEEE802.3u, 10Base-T: IEEE802.3	
LENS	12-pin	
REMOTE	8-pin	
LIGHT	2-pin, DC 12 V, max. 50 W	
DC IN	XLR 4-pin (male) x 1, 11 to 17 V	
DC OUT	4-pin x 1, 11 to 17 V, 0.5 A max (for wireless microphone receiver)	
MEMORY STICK	x 1 (for camera setup files)	
USB	x 1	

Audio Performance

Frequency response	20 Hz to 20 kHz, +0.5 dB/-1.0 dB
Dynamic range	More than 93 dB
Distortion	Less than 0.08% (at 1 kHz, reference level)
Crosstalk	Less than -70 dB (at 1kHz, reference level)
Wow & flutter	Below measurable limit
Headroom	12/16/18/20 dB (selectable)

Camera Section

Pickup device		3-chip 2/3-inch type HD Power HAD FX CCDs
Effective picture elements		1920 x 1080
Optical system		F1.4 prism
Built-in optical filters	CC	A: Cross, B: 3200K, C: 4300K, D: 6300K
	ND	1: Clear, 2: 1/4ND, 3: 1/16ND, 4: 1/64ND
Shutter speed	1080/59.94i	1/100, 1/125, 1/250, 1/500, 1/1000. 1/2000, ECS, SLS
	1080/50i	1/60, 1/125, 1/250, 1/500, 1/1000, 1/2000, ECS, SLS
	1080/29.97P	1/40, 1/60, 1/120, 1/125, 1/250, 1/500, 1/1000, 1/2000, ECS, SLS
	1080/25P	1/33, 1/50, 1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000, ECS, SLS
	1080/23.98P	1/32,1/48,1/50,1/60,1/96,1/125,1/250,1/500,1/1000,1/2000, ECS, SLS
	720/23.98P (Pull-down)	1/32,1/48,1/50,1/60,1/96,1/125,1/250,1/500,1/1000,1/2000, ECS, SLS
	Slow Shutter	1- to 8-, and 16-frame accumulation*4
Lens mount		2/3-inch-type 48 bayonet mount
Sensitivity (2000 lx, 89.9% reflectance)	59.94i	F11
	50i	F12
Minimum illumination		Approx. 0.016 lx (F1.4 lens, +42 dB, with 16-frame accumulation)
Gain selection		-6, -3, 0, 3, 6, 9, 12, 18, 24, 30, 36, 42 dB
Smear level		-135 dB (typical)
S/N ratio		59 dB (54 dB w/o NS)
Modulation depth		45% or more at 27.5 MHz
Horizontal resolution		1000 TV lines or more (1920 x 1080i mode)
Registration		0.02% or less for entire screen area (excluding distortion due to lens)

Viewfinder

Option

Built-in LCD Monitor

3.5-inch*5 type color LCD monitor

Supplied Accessories

Shoulder belt (x 1), Operation manual (x 1), XDCAM Application Software CD-ROM (x 1)
Micorphone cable (for converting 3-pin to 5-pin) (x1)

Optional Accessories

PFD50DLA/PFD23A Professional Disc
CBK-HD01 HD/SD-SDI Input Board
CBK-SC02 Analog Composite Input Board,
HDVF-C30WR/HDVF-C35W/HDVF-20A/HDVF-200 Viewfinder
DWR-S01D/WRR-855S Wireless Microphone Receiver
ECM-680S/ECM-678/ECM-674 Shotgun-type Electret Condenser Microphone
BP-GL95/BP-GL65/BP-L80S/BP-L60S Litium-ion Battery Pack
BC-L500/BC-L160/BC-L70 Battery Charger
AC-DN10/AC-DN2B AC Adaptor
RM-B750/RM-B150 Remote Control Unit
RCP-920/RCP-921/RCP-750/RCP-751 Remote Control Unit
MSU-900/MSU-950 Master Setup Unit
HDCA-702 MPEG TS Adaptor
VCT-14 Tripod Adaptor
BKW-401 Viewfinder Rotation Bracket
CAC-12 Mic Holder
LC-H300/LC-DS300SFT Carrying Case

*1: AV/C (DV) interface is NOT supported.
*2: Requires optional PDBK-201 board.
*3: Viewable area measured diagonally.

PDW-F1600

General

Dimensions (W x H x D)		8 3/8 x 5 1/4 x 15 5/8 inches (210 x 132 x 396 mm)
Weight		Approx. 14 lb 5 oz (6.5 kg)
Power requirements		100 V to 240 V AC, 50/60 Hz, 12 V DC
Power consumption		AC: 80 W, DC: 65 W, SAVEMODE(DC): 55 W
Operating temperature		+41 to 104 °F (+5 to +40 °C)
Storage temperature		-4 to +140 °F (-20 to +60 °C)
Humidity		25 to 90% (relative humidity)
Recording/playback time		MPEG HD422 mode: Approx. 95 min. with PFD50DLA. Approx. 43 min. with PFD23A.
Search speed	Jog mode	-1 to +1 time normal speed
	Variable speed	-2 to +2 times normal speed
	Shuttle mode	-20 to +20 times normal speed
	F.Fwd/Rev	-35/+35 times normal speed

Inputs/Outputs

HDSDI IN	BNC x 1 (switchable)	HD-SDI: SMPTE 292M (w/embedded audio) SD-SDI: SMPTE 259M (w/embedded audio)
REF.VIDEO IN	BNC x 2 (including loop through), HD Tri-level sync (0.6 Vp-p/75 Ω/negative) or SD blackburst/composite sync (0.286 Vp-p/75 Ω/negative)	
ANALOG AUDIO IN	XLR 3-pin (female) x 2, +6 dBu, Hi-Z, balanced	
DIGITAL AUDIO (AES/EBU) IN 1/2, 3/4	BNC x 2, 4 ch (2 ch each, 1/2 ch and 3/4 ch), AES-3id-1995	
TIME CODE IN	BNC x 1, SMPTE time code, 0.5 to 18 Vp-p/3.3 kΩ/unbalanced	
HDSDI OUT 1	BNC x 1, SMPTE 292M (w/embedded audio)	
HDSDI OUT 2 (SUPER)	BNC x 1, SMPTE 292M (w/embedded audio), character On/Off	
SDSDI OUT 1	BNC x 1, SMPTE 259M (w/embedded audio)	
SDSDI OUT 2 (SUPER)	BNC x 1, SMPTE 259M (w/embedded audio), character On/Off	
COMPOSITE OUT 1	BNC x 1, 1.0 Vp-p/75 Ω/negative, SMPTE 170M	
COMPOSITE OUT 2 (SUPER)	BNC x 1, 1.0 Vp-p/75 Ω/negative, SMPTE 170M, character On/Off	
ANALOG AUDIO OUT	XLR 3-pin (male) x 2, +4 dBu, 600Ω, Lo-Z, balanced	
AUDIO MONITOR	XLR 3-pin (male) x 2, +4 dBu, 600Ω, Lo-Z, balanced	
DIGITAL AUDIO (AES/EBU) OUT 1/2, 3/4	BNC x 2, 4 ch (2 ch each, 1/2 ch and 3/4 ch), AES-3id-1995	
TIME CODE OUT	BNC x 1, SMPTE time code, 1.0 Vp-p/75 Ω/unbalanced	
PHONES	Stereophone-jack x 1	
i.LINK S400	6-pin x 1*1	File Access Mode HDV*2 1080i/720P
ETHERNET	RJ-45 x 1, 1000Base-T: IEEE802.3ab, 100Base-TX: IEEE802.3u, 10Base-T: IEEE802.5	
REMOTE (9P)	D-sub 9-pin (female) x 1, RS-422A	
VIDEO CONTROL	D-sub 9-pin (female) x 1, EIA RS-423	
AC IN	x 1, 100 to 240 V	
DC IN 12V	XLR 4-pin (male) x 1	
REMOTE	4-pin (female) x 1, DC 12 V, 7.5 W	
MAINTENANCE	USB x 2	

Video Performance

Sampling frequency	Y: 74.25 MHz, Pb/Pr: 37.125MHz
Quantization	8 bit/sample
Compression	MPEG-2 4:2:2P@HL
Composite output	Frequency response: 0.5 to 5.75 MHz +0.5 dB/-2.0 dB S/N(Y): 53 dB or more Y/C delay: ± 20 ns or less K-factor (K2T): 1% or less

Processor Adjustment Range

Video level	-∞ to +3 dB
Chroma level	-∞ to +3 dB
Set up/black level	± 30 IRE/±210 mV
Chroma phase	± 30 °
System sync phase	± 15 µs
System sync phase (fine)	0 to 400 ns

Audio Performance

Sampling frequency	48 kHz
Quantization	24 bit
Frequency response	20 Hz to 20 kHz +0.5 dB/-1.0 dB
Dynamic range	90 dB or more
Distortion	0.05% or less
Headroom	12/16/18/20 dB (selectable)

Built-in LCD Monitor

4.3-inch*3 type color LCD monitor

Built-in Audio Speaker

x 1, monaural

Supplied Accessories

Operation manual (x 1), Installation manual (x 1),
XDCAM Application Software CD-ROM (x 1)

Optional Accessories

PFD50DLA/PFD23A Professional Disc
PDBK-201 MPEG TS IN/OUT Board
BKP-L551 Lithium-ion Battery Adaptor
BP-GL95/BP-L80S Lithium-ion Battery Pack
HKDV-900 Video Control Unit (Ver 2.00 or later)
RM-280 Editing Controller (Ver 2.03 or later)
RCC-5G Remote Control Cable (5 m)

*1: Requires an optional CBK-HD01 board.
*2: Requires an optional CBK-SC02 board.
*3: AV/C (DV) interface is NOT supported.
*4: Only even numer of frame setting is available in 720 mode. Slow Shutter can not function with the Digital Extender.
*5: Viewable area measured diagonally.

SONY

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