SONY
make.believe

PDW-F800
XDCAM HD422 Camcorder

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 a powerful new addition to the series - the PDW-F800 camcorder.

The PDW-F800 offers 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, natural history, documentary, sport as well as ENG applications.

Features

2/3-inch-type Three HD Power HAD FX CCDs

The PDW-F800 is equipped with three 2/3-inch type 2.2-megapixel HD CCDs, which are also used in the well-proven HDC-1500 Sony Multi-format HD Camera. Based on Sony Power HAD FX sensor technology and the latest on-chip lens structure, this CCD offers a high sensitivity of F12 at 50Hz and an excellent signal-to-noise ratio of 59dB with NS.

In addition to this performance, a wide variety of capturing modes including 1080/50i, 1080/59.94i, 1080/25P and 1080/29.97P are available.

14-bit A/D Conversion

The PDW-F800 incorporates a high-performance 14-bit A/D converter that enables images captured by the high-performance CCDs to be processed with maximum precision. In particular, this high-resolution A/D conversion allows the gradation in mid-to-dark-tone areas of the picture to be faithfully reproduced. Thanks to the 14-bit A/D converter, pre-knee signal compression in highlighted areas can be eliminated, and the camera can clearly reproduce a high-luminance subject at a 600% dynamic range.

State-of-the-art DSP LSI

The newly developed DSP (Digital Signal Processing) LSI is the heart of the image-processing device for the PDW-F800 camcorder. In conjunction with the 14-bit A/D converter, it reproduces images captured by the CCD at maximum quality. In addition, white balance, white shading, and flare are digitally corrected, allowing for stable image correction. What's more, the PDW-F800 provides a NS (Noise Suppression) mode to reduce high-frequency noise elements in a video signal using Sony's advanced digital processing technology.

High-quality 24-bit Audio Recording

The PDW-F800 records uncompressed four-channel, 24-bit audio. It is also equipped with a range of audio interfaces.

Supported Recording Formats – HD/SD and Interlace/Progressive

One of the big appeals of the PDW-F800 is its highly flexible multi-format recording capability. Users can select a recording format from HD (MPEG HD422 and MPEG HD) and SD (MPEG IMX and DVCAM), 59.94i/50i interlace mode, or 29.97P*/25P progressive mode.

Well-balanced Compact Body

The PDW-F800 is designed to be very compact and ergonomically well balanced, providing a high level of mobility and comfort in various shooting situations. It weighs only 6.0 kg (13 lb 4 oz) including the HDVF-20A viewfinder, the ECM-680S microphone, the PFD50DLA disc and the BP-GL95 battery pack.

Cross-conversion Capability

With the optional HVBK-1520 Format Converter Board installed, the HVR-1500A has a cross-conversion capability that allows 1080i recordings to be converted to 720P signals, as well as 720/30P (29.97 frames/s) recordings to be converted to 1080/60i (59.94 fields/s) signals.

These signals are output* from the HD-SDI interface. This allows source footage and assets in different HDV formats to be integrated into the same HD editing system.

* There may be a delay of one frame in outputting cross-converted signals from the HD-SDI interface.

Viewfinders

Two types of optional viewfinders are available for users: the HDVF-20A and HDVF-200 2.0-inch monochrome viewfinders and the HDVF-C30WR 3.5-inch colour viewfinder.

Wide Choice of Optional Microphones

The PDW-F800 is compatible with a variety of microphones. It is equipped with a slot to accommodate the DWR-S01D digital wireless microphone receiver, which provides two-channel audio with stable and secure transmission tolerant to interference waves. The WRR-855 series microphone receiver can also be used within this slot. Shotgun-type microphones, ECM680S/678/674, are also available as options.

3.5-inch* LCD

A large, easy-to-view, color LCD screen on the PDW-F800 camcorder's side panel enables operators to instantly review recorded footage, as well as access the camera's set-up menus and view status indications such as four-channel audio meters, and the remaining time available on the disc and battery. It also enables advanced operations such as Thumbnail Search and Scene Selection.

*Viewable area, measured diagonally.

Slow Shutter

The shutter speed of the PDW-F800 is selectable down to a 16-frame period (in 2-, 3-, 4-, 5-, 6-, 7-, 8- and 16-frame periods). During such a long frame period, electrical charges accumulate on the CCDs which dramatically increases sensitivity. This helps camera operators to shoot in extremely dark environments. The Slow Shutter function also allows operators to use shutter speeds longer than the frame rate and to intentionally blur images when shooting a moving object, for increased shooting creativity.

Interval Recording

The PDW-F800 offers an Interval Recording function which intermittently records signals at pre-determined intervals. This is convenient for shooting over long periods of time, and also when creating pictures with special effects of extremely quick motion.

Picture Cache Recording

The PDW-F800 offers a Picture Cache Recording function that is especially useful during ENG applications. Up to 30 seconds of audio and video signals are buffered into the camcorder's memory before the Rec button is even pressed (when in Standby mode). This means that everything that happened 30 seconds before the Rec button was pressed will still be recorded onto the disc. What's more, this function works even before the disc is inserted in the drive – thereby helping to prevent the loss of any unexpected, yet important events.

Live & Play Function

The PDW-F800 camcorder has a Live & Play function that can simultaneously output both playback signals (images already recorded) and incoming camera signals (images seen through the viewfinder). Both signals are fed to their respective output and viewfinder connectors independently, and can be viewed at the same time. This allows users to frame the next shot, adjust the exposure, and even focus the lens while the camcorder is playing back recordings from the disc.

DVB-ASI Video Stream: For Field and Satellite Transmission

The PDW-F800 with the HDCA-702 MPEG TS Adaptor provides a MPEG Transport Stream output capability via a DVB-ASI connector. The HDCA-702 encodes signals to MPEG TS and output via its DVB-ASI connector, concurrently with the PDW-F800 recording onto disc. The bit rate is selectable from 17.5 Mb/s to 43 Mb/s, which is suitable for material transmissions using microwave and satellite modulators.

Smooth Gain Control

A wide choice of gain and its easy-to-use control system is one remarkable feature of the PDW-F800 camcorder. By setting the gain to the assignable switches, the user can easily access the desired gain. And the transition to each gain value is extremely smooth thus eliminating undesirable abrupt changes to the overall image.

Optical ND and CC Filters

The PDW-F800 camcorder comes equipped with dual optical filter wheels, ND (Neutral Density) and CC (Colour Correction). The optical ND filter is controlled via a built-in ND filter wheel - Clear, 1/4ND, 1/16ND/ and 1/64ND. And with the CC filter wheel, the user can easily obtain the desired colour temperature by rotation to acheive either - 3200K/4300K/5600K/ 6300K.

Digital Extender*

The Digital Extender function of the PDW-F800 enables images to be digitally doubled in size. Unlike lens extenders, the Digital Extender function performs this capability without any loss of image sensitivity, which is often referred to as the F-drop phenomenon.

*Use of the Digital Extender function reduces image resolution by half.

Focus Magnification

At the touch of a button, the centre of the screen on the viewfinder of the PDW-F800 camcorder can be magnified to about twice the size, making it easier to confirm focus settings during manual focusing.

Pool-feed Operation

For pool-feed operations, the optional CBK-HD01 and CBK-SC02 boards provide HD- and SD-SDI inputs, and SD composite input respectively.

Trigger REC Function

The PDW-F800 camcorder has the Trigger REC function that enables synchronized recording with PDW-HD1500 and PDW-F75 XDCAM decks or HDCAM™ portable decks connected via the HD-SDI interface – a convenient feature for backup recording.

Benefits

IT/Network Friendly

In the Sony XDCAM series of products, recordings are made as data files in the industry-standard MXF (Material eXchange Format) file format. This allows material to be handled with great flexibility in an IT-based environment - easily available for copying, transferring, sharing and archiving. All these operations are accomplished without the need for a digitizing process.

File-based data copying allows for degradation-free dubbing of AV content, which can be performed easily on a PC. The file-based recording system also allows for material to be viewed directly on a PC, simply by linking it to the XDCAM unit via an i.LINK connection. This works in just the same way as a PC reading files on an external drive.

The PDW-F800 XDCAM HD422 camcorder comes equipped with IT-friendly, computer-based interfaces. These include an i.LINK interface supporting File Access Mode as standard, and the Ethernet interface*.

Easy Maintenance and High Reliability

XDCAM HD422 products use the same platform as the XDCAM products in wide use around the world. They share the advantage of no mechanical contact between the equipment and the recording media, achieving both a high level of durability and a long media life. XDCAM HD422 products also offer the same high resistance to shock and vibration as other XDCAM products.

Powerful Nonlinear Recording

The XDCAM HD products use a large-capacity nonlinear optical disc for recording, called the Professional Disc media, which Sony has developed specifically for professional recording applications.

The PFD50DLA and PFD23A are 12-cm, reusable optical discs. The PFD50DLA is a dual-layer disc with an overwhelming capacity of 50 GB, while the PFD23A is a single-layer, 23-GB disc. The large capacity of the PFD50DLA makes it possible to record up to approximately 95 minutes of high-quality MPEG HD422 material.

The Professional Disc is highly reliable and durable because it experiences no mechanical contact during recording or playback, and is packaged into an extremely durable and dust-resistant disc cartridge.

Non-contact recording and playback also makes it an ideal medium for long-term storage of AV assets. Whereas traditional tape archive systems must be rewound on a periodic basis to remove magnetic powder debris, the Professional Disc completely eliminates this process.

Its reliability has already been demonstrated by the huge number of XDCAM products deployed worldwide since 2003.

Highly Streamlined Workflows

At the same time as recording its high-resolution video and audio data, the XDCAM HD products also record a low-resolution version of this AV data on the same disc. Called "Proxy Data", this is much smaller in size than the high-resolution data (1.5 Mb/s for video and 0.5 Mb/s for audio).

Because of its lower resolution, Proxy Data can be transferred to a standard PC at an amazingly high speed, and easily browsed and edited using the PDZ-1 Proxy Browsing Software (or other compatible editing software offered by many industry-leading manufacturers). What's more, with the PDZ-1 software, it can be converted to the popular ASF format for playback on Windows™ Media Player, providing dramatic improvements in production workflows. Proxy Data can also be viewed directly on a PC without data transfer using an i.LINK (File Access Mode) connection, and can even be sent over a standard Ethernet network.

The overall flexibility of Proxy Data means that it can be used for a variety of applications, such as immediate logging on location, off-line editing, daily rushes of shooting on location, client approvals, and more.

Metadata

All XDCAM HD422 products are capable of recording a variety of metadata, which provides a huge advantage when searching for specific data after an initial recording has been made. Information such as production dates, creator names and camera setup parameters can be saved, together with the AV material, on the same disc using the supplied PDZ-1 software. This makes it possible to organize and search through all recordings effectively. One particular metadata, called EssenceMark™ (Shot Mark), is a convenient reference that can be added to desired frames to make them easy to recall in subsequent editing processes. Clipflag is another convenient metadata which users can add to their desired clips as "OK", "NG" or "Keep".

Technical Specifications

General	
Mass	Approx. 4.3 kg (9 lb 8 oz) (body) Approx. 6.0 kg (13 lb 4 oz) (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	-5 to +40°C (+32 to 104°F)
Storage temperature	-20 to +60°C (-4 to +140°F)
Humidity	10 to 90% (relative humidity)
Continuous operating time	Approx. 120 min. w/BP-GL95 battery
Recording format	Video: MPEG HD422 (CBR: 50 Mb/s) MPEG HD: HQ mode (VBR, maximum bit rate: 35 Mb/s) SP mode (CBR, 25 Mb/s) LP mode (VBR, maximum bit rate: 18 Mb/s) (Playback only), MPEG IMX (CBR, 50/40/30 Mb/s) DVCAM (CBR, 25 Mb/s) Proxy Video: MPEG-4 Audio: MPEG HD422: 4 ch/24 bits/48 kHz MPEG HD: 4 ch/16 bits/48 kHz MPEG IMX: 4 ch/24 bits/48 kHz or 4 ch/16 bits/48 kHz DVCAM: 4 ch/16 bits/48 kHz Proxy Audio: A-law (4ch/8 bits/8 kHz)
Recording/Playback time	MPEG HD422: 50 Mb/s: Approx. 95 min. (PFD50DLA), Approx. 43 min. (PFD23A) MPEG HD: 35 Mb/s, 4-ch audio: More than 145 min. (PFD50DLA), More than 65 min. (PFD23A) 35 Mb/s, 2-ch audio (playback only): More than 150 min. (PFD50DLA), More than 68 min. (PFD23A) 25 Mb/s, 4-ch audio: Approx. 190 min. (PFD50DLA), Approx. 85 min. (PFD23A) 25 Mb/s, 2-ch audio (playback only): Approx. 200 min. (PFD50DLA), Approx. 90 min. (PFD23A) 18 Mb/s, 4-ch audio (playback only): More than 248 min. (PFD50DLA), More than 112 min. (PFD23A) 18 Mb/s, 2-ch audio (playback only): More than 265 min. (PFD50DLA), More than 122 min. (PFD23A) MPEG IMX: 50 Mb/s: Approx. 100 min. (PFD50DLA), Approx. 45 min. (PFD23A) 40 Mb/s: Approx. 120 min. (PFD50DLA), Approx. 55 min. (PFD23A) 30 Mb/s: Approx. 150 min. (PFD50DLA), Approx. 68 min. (PFD23A) DVCAM: 25 Mb/s: Approx. 185 min. (PFD50DLA), Approx. 85 min. (PFD23A)

Inputs/Outputs	
GENLOCK IN	BNC x 1, 1.0 Vp-p, 75ohms
TC IN	BNC x1, 0.5 to 18 Vp-p, 10ohms (Composite input (option: CBK-SC02) shares the same connector)
SDI IN	BNC x 1 (Option: CBK-HD01) (HD/SD switchable) HD-SDI: SMPTE 292M (w/ embedded audio) SD-SDI: SMPTE 259M (w/ embedded audio)
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
TEST OUT	BNC x 1 (switchable) HD Y/SD composite SD composite (character On/Off)
SDI OUT	BNC x 2 1 (HD/SD switchable) HD-SDI: SMPTE 292M (w/ embedded audio) SD-SDI: SMPTE 259M (w/ embedded audio) 2 (HD/SD switchable, character On/Off) HD-SDI: SMPTE 292M (w/ embedded audio) SD-SDI: SMPTE 259M (w/ embedded audio)

AUDIO OUT	CH-1/CH-2: XLR 5-pin (male, stereo) x 1
TC OUT	BNC x 1, 1.0 Vp-p, 75 ohms
EARPHONE	Mini-jack x 2 (front: man-aural, rear: stereo/monoral)
DC IN	XLR 4-pin (male) x 1, 11 to 17 V
DC OUT	4-pin x 1 (for wireless microphone receiver), 11 to 17 V DC (MAX 0.5 A)
LENS	12-pin
REMOTE	8-pin
LIGHT	2-pin, DC 12 V, max. 50 W
CAMERA ADAPTOR	50-pin
i.LINK	IEEE 1394*, 6 pin x 1, File Access Mode *AV/C (DV) interface is not supported.
MEMORY STICK	x 1 (for camera setup files)
Ethernet	RJ-45 x 1, 100Base-Tx: IEEE802.3u, 10Base-T: IEEE802.3
USB	x 1 (for version-up)

Audio Performance

Frequency response	20 Hz to 20 kHz, +0.5 dB/ -1.0 dB
Dynamic range	More than 93dB
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	20/18/16/12 dB (selectable)

Camera Section

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)
Horizontal resolution	1000 TV lines or more (1920 x 1080i mode)
Registration	Less than 0.02%
Pickup device	3-chip 2/3-inch type HD Power HAD FX CCDs
Effective picture elements	1920(H) x 1080(V)
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	Time 59.94i: 1/100, 1/125, 1/250, 1/500, 1/1000. 1/2000, ECS, SLS 50i: 1/60, 1/125, 1/250, 1/500, 1/1000, 1/2000, ECS, SLS 29.97P: 1/40, 1/60, 1/120, 1/125, 1/250, 1/500, 1/1000, 1/2000, ECS, SLS 25p: 1/33, 1/50, 1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000, ECS, SLS 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): 23.98P: 1/32, 1/48, 1/50, 1/60, 1/96, 1/125, 1/250, 1/500, 1/1000, 1/2000, ECS, SLS Slow shutter (SLS) 1- to 8-, 16-frame accumulation* *Only even number of frame setting is available in 720 mode. Slow Shutter can not function with the Digital Extender.
Slow & Quick Motion function	(MPEG HD mode only) 23.98p: Selectable from 1 to 48 frame/sec as recording frame rate 25p: Selectable from 1 to 50 frame/sec as recording frame rate 29.97p: Selectable from 1 to 59.94 frame/sec as recording frame rate
Lens mount	2/3-inch type 48 bayonet mount
Sensitivity (2000 lx, 89.9% reflectance)	59.94i: F11, 50i: F12 (typical)

Others

Viewfinder	Option
Built-in LCD Monitor	3.5-inch* type color LCD monitor *Viewable area measured diagonally.

Supplied Accessories

	Soulder belt
	Lens Mount Cap
	Microphone cable (for converting 3-pin to 5-pin)
	XDCAM Application Software CD-ROM

Accessories

Batteries and Power Supplies

AC-DN10

AC Adaptor/Charger

BC-M150

Battery Charger

AC-DN2B

AC Adapter (150W output) and Lithium-Ion battery charger

BP-GL65

Battery Pack

BC-L160

Li-ion battery charger

BP-GL95

Rechargeable Lithium-ion Battery Pack

BC-L500

Li-ion Battery Charger

BP-L80S

Rechargeable Lithium-ion Battery Pack

BC-L70

Li-ion Battery Charger

Viewfinders

BKW-401

Viewfinder Rotation Bracket

HDVF-C35W

HD Colour LCD Viewfinder

HDVF-C30WR

High resolution 2.7inch colour viewfinder

Receivers

DWR-S01D

Dual Digital Wireless Microphone Receiver

Shotgun

ECM-674

Electret Condenser Microphone

ECM-680S

Shotgun electret condenser microphone

ECM-678

Electret Condenser Shotgun Microphone

Viewfinders

HDVF-20A

HD Electronic Viewfinder (2IN)

Cases

LC-777

Hard shell carrying case for Digital Betacam camcorders

LC-H300

Carrying Case for DSR-400/450WSL

LC-DS300SFT

Soft Carr.case For Dsr-300p/500wsp

Control Systems

MSU-900

Master Set-Up Unit for BVP and HDC series cameras. Provides centralised control for a multi camera system in any studio or OB van, in a compact, horizontal panel format

RCP-750

New Joystick-type full-function remote control panel for use with all BVP and HDC systems cameras

MSU-950

Master Set-Up Unit for BVP and HDC series cameras. Provides centralised control for a multi camera system in any studio or OB van, in a compact, vertical panel format

RCP-751

New Dial-type full-function remote control panel for use with all BVP and HDC systems cameras

RCP-920

Remote Control Panel

RCP-921

Remote Control Panel

Tripods and Supports

VCT-14

TRIPOD ADAPTOR FOR PORT. CAMERAS/ CAMC.