

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 a new addition to the series - the PDW-F1600 deck. The PDW-F1600 offers multi-format recording flexibility as standard - including SD recording and a frame rate of 23.98P in 1080 mode.

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.

Features

Multi-format HD/SD Recording/Playback Capability

- HD recording at up to 50 Mb/s using MPEG HD422 (MPEG-2 4:2:2P@HL compression)
- Recording and playback in the MPEG HD format (MPEG-2 MP@HL compression)
- 1080i and 720P recording and playback
- Up/Down conversion and cross conversion between 1080i and 720P*
- Three types of picture output mode are supported for down-conversion: Edge crop, Squeeze and Letter-box (16:9/14:9/13:9)

High-quality eight-channel (HD-SDI) 24-bit audio recording

Handles both the dual-layer disc (PFD50DLA) and single-layer disc (PFD23A)

High-speed file transfer

- i.LINK File Access Mode (FAM)
- FTP via Gigabit Ethernet

RS-422 9-pin remote control interface, which the deck to be used as a feeder for linear editing

A wide variety of video and audio inputs and outputs, including two HD-SDI outputs

Compatible with XDCAM Carts: the PDJ-C1080 and the PDJ-A640

Compact and lightweight: half-rack size and 6.5 kg (14 lb 5 oz)

AC, DC or battery powered

Built-in audio speaker

Low power consumption: 65 W (typical) and 54W (in power save mode)

A large easy-to-see 4.3-inch* type color LCD display

*Viewable area measured diagonally

Trigger REC function (synchronized recording with compatible camcorders)**

**PDW-700, HDW-730/750 series, HDW-790 and HDW-F900R camcorders.

TBC Control, by front panel operation or remote control panel via RS-422

Easy and intuitive search operation

- Thumbnail Search function
- Expand function
- Equipped with a Jog/Shuttle dial, providing VTR-like operation (Jog: -1 to +1 time normal speed, Variable: -2 to 2 times normal speed, Shuttle: \pm 20 times normal speed)

Clip Continuous REC function

Compatible with the HDCA-702 MPEG TS Adaptor

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-F1600 XDCAM HD422 deck 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	
Power requirements	AC 100 V to 240 V, 50/60 Hz, DC 12 V
Power consumption	AC: 80 W, DC: 65 W, SAVEMODE(DC): 55 W
Operating temperature	+5 to +40°C (+41 to 104°F)
Storage temperature	-20 to +60°C (-4 to +140°F)
Humidity	25 to 90% (relative humidity)
Mass	6.5 kg (14 lb 5 oz)

Dimensions (W x H x D) (excluding protrusions)	210 x 132 x 396 mm (8 3/8 x 5 1/4 x 15 5/8 inches)
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Recording/Playback format	<p>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)</p> <p>Proxy Video: MPEG-4</p> <p>Audio: MPEG HD422: 8 ch/24 bits/48 kHz MPEG HD: 4 ch/16 bits/48 kHz MPEG IMX: 4 ch/24 bits/48 kHz or 8 ch/16 bits/48 kHz DVCAM: 4 ch/16 bits/48 kHz</p> <p>Proxy Audio: A-law (8 ch/8 bits/8 kHz)</p>
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Recording/Playback time	<p>MPEG HD422: 50 Mb/s: Approx. 95 min. (PFD50DLA), Approx. 43 min. (PFD23A)</p> <p>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)</p> <p>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)</p> <p>DVCAM: 25 Mb/s: Approx. 185 min. (PFD50DLA), Approx. 85 min. (PFD23A)</p>
Search speed range	<p>Jog mode: -1 to +1 time normal speed</p> <p>Variable mode: -2 to +2 times normal speed</p> <p>Shuttle mode: -20 to +20 times normal speed</p> <p>F.Fwd/Rev: -35/+35 times normal speed</p>

Inputs/Outputs	
Reference input	<p>BNC x 2 (including loop through) HD Tri-level sync (0.6 Vp-p/75 ohms/negative) or SD blackburst/composite sync (0.286 Vp-p/75 ohms/negative)</p>

HD-SDI input	BNC x 1 (HD/SD switchable) HD-SDI: SMPTE 292M (w/ embedded audio) SD-SDI: SMPTE 259M (w/ embedded audio)
Analogue audio input	XLR 3-pin (female) x 2 (channel selectable) +4/0/-3/-6 dBu (selectable) 10 k ohms, balanced
Digital audio input (AES/ EBU)	BNC x 2, 4 ch (2 ch each, 1/2 ch and 3/4 ch), AES-3id-1995
Time code input	BNC x 1, SMPTE time code, 0.5 to 18 Vp-p/3.3 k ohms/ unbalanced
Analogue composite output	BNC x 2 1: 1.0 Vp-p/75 ohms/negat- ive, SMPTE 170M 2: 1.0 Vp-p/75 ohms/negat- ive, SMPTE 170M ,character On/Off
HD-SDI output	BNC x 2, 1: SMPTE 292M (w/embed- ded audio) 2: SMPTE 292M (w/embed- ded audio), character On/Off
SD-SDI output	BNC x 2, 1: SMPTE 259M (w/embed- ded audio) 2: SMPTE 259M (w/embed- ded audio), character On/Off
Analogue audio output	XLR 3-pin (male) x 2 (channel selectable), +4/0/ -3/-6 dBu (selectable), 600 ohms, Lo-z, balanced
Analogue audio monitor	XLR 3-pin (male) x 2, +4 dBu, 600 ohms, Lo-Z, balanced
Digital audio output (AES/EBU)	BNC x 2, 4 ch (2 ch each, 1/2 ch and 3/4 ch), AES-3id-1995
Headphone output	JM-60 Stereo phone jack x 1, -13 dBu, 8 ohms, unbalanced
Time code output	BNC x 1, SMPTE time code, 1.0 Vp-p/75 ohms/ unbalanced
Video control	D-sub 9-pin (female) x 1, EIA RS-423
i.LINK	IEEE 1394 6-pin x 1*, File Access Mode, (Option: PDBK-201) HDV 1080i/720P IN/OUT *AV/C (DV) stream is NOT supported.
Ethernet	RJ-45 x 1, 1000Base-T: IEEE802.3ab, 100Base-TX: IEEE802.3u, 10Base-T: IEEE802.3

Remote (9P) input	D-sub 9-pin (female) x 1, RS-422A
DC input (12 V)	XLR 4-pin (male) x 1
DC output (12 V)	4-pin (female) x 1, DC 12 V, 7.5 W
Maintenance	USB x 2
AC input	x 1, 100 to 240 V, 50/60Hz

Video Performance

Sampling frequency	Y: 74.25 MHz, Pb/Pr: 37.125MHz
Quantization	8 bits/sample
Error correction	Reed Solomon Code

Processor Adjustment Range

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

Others

Built-in display	4.3-inch(*) type color LCD monitor *Viewable area measured diagonally.
Built-in audio speaker	x 1, monaural

Supplied Accessories

	Operation manual
	Installation manual
	XDCAM Application Software CD-ROM

Accessories

Batteries and Power Supplies

**BP-GL95**

Rechargeable Lithium-ion Battery Pack

**BP-L80S**

Rechargeable Lithium-ion Battery Pack

Remote Controls and Panels

**RM-280**

Editing Controller