SONY

XDCAM HD422 Family

XDCAM HD422 Camcorder
PDW-700

XDCAM HD422 Recording Deck
PDW-HD1500

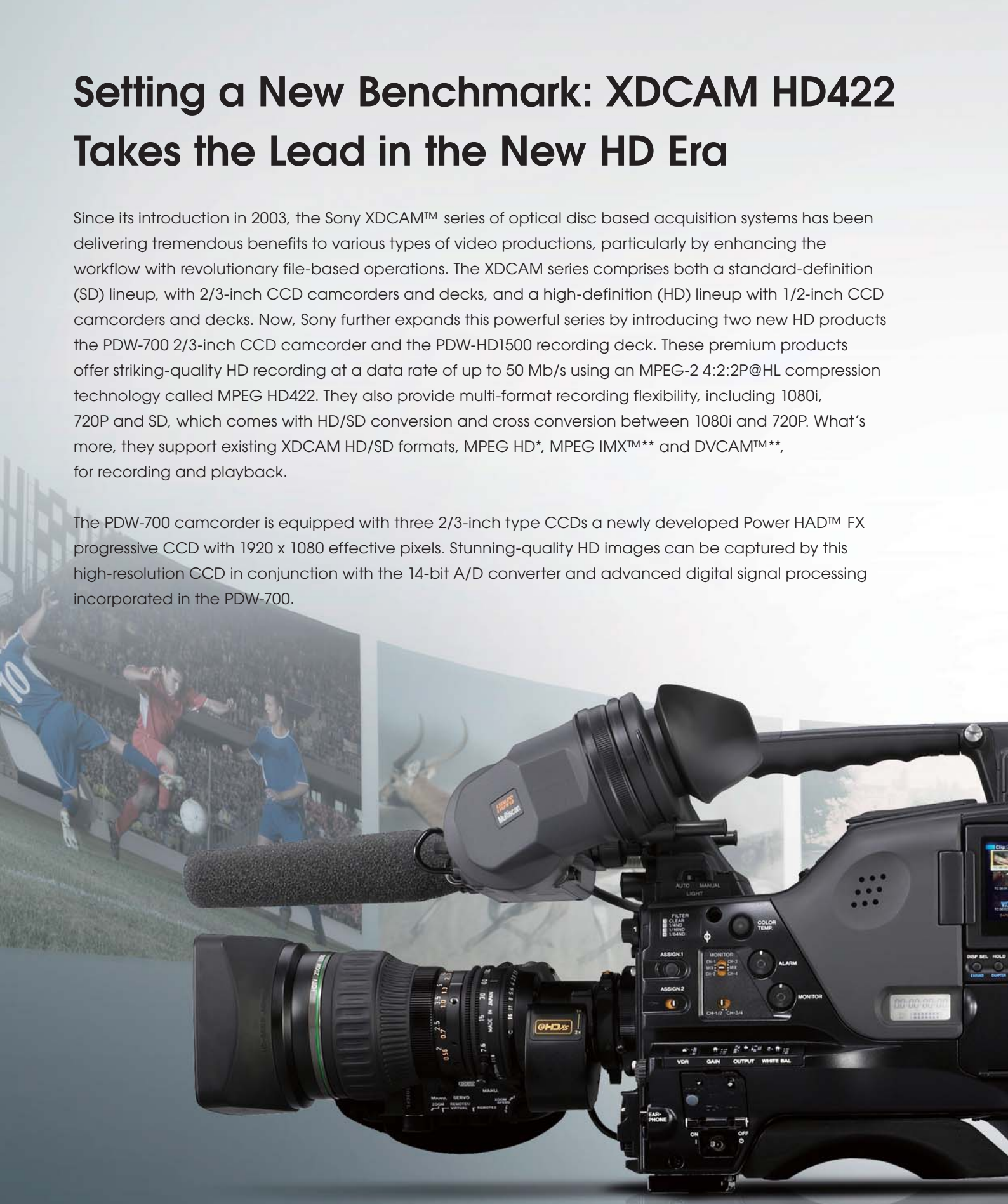
XDCAM Drive Unit
PDW-U1

XDCAM HD Professional Disc System
MPEG HD422
Power HAD FX
Professional Disc DL

Setting a New Benchmark: XDCAM HD422 Takes the Lead in the New HD Era

Since its introduction in 2003, the Sony XDCAM™ series of optical disc based acquisition systems has been delivering tremendous benefits to various types of video productions, particularly by enhancing the workflow with revolutionary file-based operations. The XDCAM series comprises both a standard-definition (SD) lineup, with 2/3-inch CCD camcorders and decks, and a high-definition (HD) lineup with 1/2-inch CCD camcorders and decks. Now, Sony further expands this powerful series by introducing two new HD products the PDW-700 2/3-inch CCD camcorder and the PDW-HD1500 recording deck. These premium products offer striking-quality HD recording at a data rate of up to 50 Mb/s using an MPEG-2 4:2:2P@HL compression technology called MPEG HD422. They also provide multi-format recording flexibility, including 1080i, 720P and SD, which comes with HD/SD conversion and cross conversion between 1080i and 720P. What's more, they support existing XDCAM HD/SD formats, MPEG HD*, MPEG IMX™** and DVCAM™**, for recording and playback.

The PDW-700 camcorder is equipped with three 2/3-inch type CCDs a newly developed Power HAD™ FX progressive CCD with 1920 x 1080 effective pixels. Stunning-quality HD images can be captured by this high-resolution CCD in conjunction with the 14-bit A/D converter and advanced digital signal processing incorporated in the PDW-700.



The PDW-HD1500 is a half-rack-wide recording deck equipped with a range of AV and IT interfaces including HD-SDI, SD-SDI, i.LINK*** and Ethernet. One of the distinctive features of this product is its powerful dual-optical head, offering fast file transfer.

The PDW-U1 is another powerful product in the lineup, it offers a compact, mobile and highly cost-effective solution for various applications. It serves as an external PC drive, connected via the Hi-Speed USB (USB 2.0) interface, and allows users to instantly view material recorded to Professional Disc™ media on their PC. It can also be used as a source feeder to nonlinear editing systems.

With fast file-based operations and outstanding picture quality, the XDCAM HD422 lineup provides invaluable tools for applications such as news gathering, where speed is a key concern, and for production of TV dramas, documentaries and mainstream entertainment programs, where a high-quality impression is crucial.

*Recording capability is not supported for MPEG HD 18 Mb/s mode.

**PDW-700 requires optional CBKZ-MD01 software. PDW-HD1500 requires optional PDBK-S1500 or PDBK-F1500 hardware key.

***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.

PDW-700 Camcorder

PDW-HD1500 Recording Deck

XDCAM HD422 – At the Top of the XDCAM Series

Sony is proud to introduce the XDCAM HD422 lineup as its top-of-the-line products in the XDCAM series. These powerful tools provide stunningly high-quality recording in both image and audio, as well as versatile operations enabled by a range of interfaces . All of which are capabilities essential to broadcasters today.

HD 1920 x 1080 and 1280 x 720 Recording Using the MPEG HD422 Codec

XDCAM HD422 products record and play back high-definition videos with 1920 x 1080 and 1280 x 720 resolutions using MPEG HD422 compression, which employs MPEG-2 4:2:2P@HL compression technology. Data rates of up to 50 Mb/s are used for recording, providing the highest picture quality in the XDCAM series while keeping the data size as low as possible to easily transfer and transmit. Moreover, the MPEG HD422 codec is based on industry standard MPEG compression, offering high compatibility with many other devices such as nonlinear editing systems.

MPEG HD422

Wide Choice of Video Formats Interlace and Progressive

XDCAM HD422 products offer a wide choice of video formats for both frame rates and scanning mode. They include 59.94i, 50i, 29.97P and 25P in a resolution of 1920 x 1080, and 59.94P and 50P in 1280 x 720. Recording and playback capability in 23.98P is also available by installing options.

*PDW-700 requires the CBKZ-FC02 software planned to be available in summer 2009. PDW-HD1500 requires the PDBK-F1500 hardware key planned to be available in summer 2009.

A Variety of Selectable Recording Modes and Video Format*

In addition to the high-quality MPEG HD422 50 Mb/s mode, the XDCAM HD422 lineup can record and play back videos in a variety of bit rates and video formats.

MPEG HD MPEG IMX DVCAM

High-quality Uncompressed Audio Recording

In addition to HD video recording, eight-channel high-quality audio is an equally significant feature in the XDCAM HD422 system. The PDW-HD1500 has eight audio channels (HD-SDI), while the PDW-700 camcorder has four audio channels. Both can record 24-bit, 48 kHz uncompressed audio on each channel.

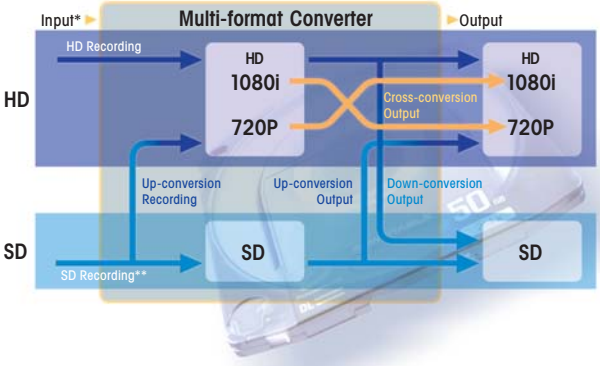
Up/down- and Cross-conversion Capability

XDCAM HD422 products come equipped with powerful up/down- and cross-conversion systems, which provide great operational flexibility. Conversions can be done via HD-SDI input*/output, SD-SDI input*/output and composite input**/output.

*PDW-700 requires optional CBK-HD01 board.

**PDW-700 requires optional CBK-SC02 board.

XDCAM HD422 Format Conversion Capability on PDW-700/PDW-HD1500



*PDW-700 requires optional CBK-HD01 or CBK-SC02 board for signal input (please refer to P12: Pool-feed Operation).

**PDW-700 requires optional CBKZ-MD01 software. PDW-HD1500 requires optional PDBK-S1500 or PDBK-F1500 hardware key.

XDCAM HD422 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*3	4:2:2	59.94i, 50i, 29.97P, 25P, 23.98P*4	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*4	more than 65	more than 145
				2*2			more than 68	more than 150
		25		4			Approx. 85	Approx. 190
				2*2			Approx. 90	Approx. 200
		18*2		4*2			more than 112	more than 248
				2*2			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*1 (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*3				
		40	24	4			Approx. 55	Approx. 120
			16	8*3				
		30	24	4			Approx. 68	Approx. 150
			16	8*3				
DVCAM*1	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:PDW-700 requires optional CBKZ-MD01 software. PDW-HD1500 requires optional PDBK-S1500 or PDBK-F1500 hardware key.

*2:Playback only.

*3:Up to 4 ch with PDW-700.

*4:PDW-700 requires optional CBKZ-FC02 software planned to be available in summer 2009. PDW-HD1500 requires optional PDBK-F1500 hardware key planned to be available in summer 2009.

File-based Disc Recording

In addition to its impressive HD picture quality, what makes the XDCAM HD422 system so distinguished is its file-based disc recording capability. This brings huge benefits such as instant random access and IT connectivity, to name just two.

PFD50DLA

PFD23A

Powerful Nonlinear Recording – The Professional Disc Media

The XDCAM HD422 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.

Data Storage Media

Professional Disc media formatted by XDCAM HD422 products* can be used for data storage. As well as XDCAM AV files, every type of PC file can be recorded onto the User Data folder of the disc, allowing users to deliver and archive precious AV content with related materials.

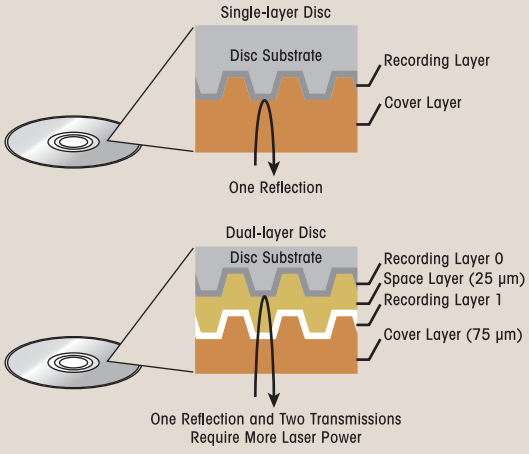
*Capacity for this purpose is up to 21.5 GB with the PFD23A, and up to 46.4 GB with the PFD50DLA. Discs formatted by XDCAM SD and XDCAM HD products do not support this capability; however, they have 500 MB of general data area.

The Key Technologies Enabling Dual-layer Recording

The development of the new dual-layer disc, PFD50DLA has been long-awaited by users who want to achieve a much longer recording time on the XDCAM HD422 system. This large-capacity dual-layer disc with compatible disc drive, provide four technological advances:

1. Increased recording density and the dual-layer disc structure offer more than twice the capacity of the single-layer disc.
2. The new substrate and production method for Professional Disc media enhance the stable reflection and transmission of the laser.
3. The new pickup uses much higher laser power – enough to record on a dual-layer disc, while maintaining a long life equivalent to the pickup used for single-layer disc recording.
4. The newly developed servo-control mechanism – which is resistant to the noises that occur at laser reflections and transmissions at each layer – enables fewer access errors, even in unstable situations.

In addition to these new advances, the dual-layer disc provides superb robustness and reliability equivalent to those of the single-layer disc.



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 XDCAM HD422 camcorder and deck come equipped with IT-friendly, computer-based interfaces. These include an i.LINK interface supporting File Access Mode as standard, and the Ethernet interface*. Connecting the XDCAM HD422 system to an Ethernet network offers users a new style of network-based operations that can dramatically improve workflow efficiency.

*The PDW-HD1500 supports Giga-bit Ethernet, and the PDW-700 supports 100Base-TX Ethernet.

No Overwriting of Footage and Immediate Recording

By virtue of recording on optical disc media, the XDCAM HD422 system makes each new recording on an empty area of disc. This is extremely useful, especially when shooting with camcorders, as it relieves the concerns of camera operators about accidentally recording over good takes, and eliminates the burden of searching for the correct position to start the next recording. In short, it means the camera is always ready for the next shot.

Instant-access Thumbnail Search with Expand Function

With all XDCAM HD422 products, video and audio signals are recorded as one clip file each time a recording is started and stopped. During playback, cue-up to the next or previous clip is possible simply by pressing the Next or Previous button, as if operating a CD or DVD player.
Furthermore, thumbnails are automatically generated for each clip as a visual reference, allowing operators to cue-up to a desired scene simply by guiding the cursor to a thumbnail and pressing the Play button. For further convenience, the Expand function allows one selected clip in the thumbnail display to be divided into 12 evenly timed intervals, each with their own thumbnail identifier. This is useful if the user wants to quickly search for a particular scene within a lengthy clip.

Thumbnail Search

Scene Selection Function

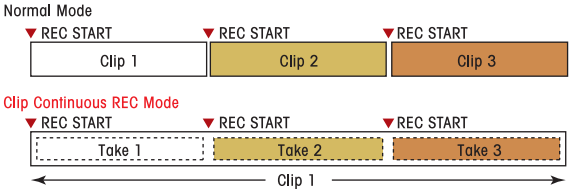
The Scene Selection function of XDCAM HD422 products allows simple cuts-only editing* to be performed within the camcorder or deck itself. The results of the edits can be saved as an XDCAM EDL (called "Clip List"), which can be written back to the original disc so as to stay with the material. The disc can then be played back according to the Clip List so that only selected portions are played out in the desired order. The Scene Selection function presents dramatic improvements to conventional workflows, such as when transferring material to a nonlinear editor and/ or server, or when searching for material and/or edit points in linear editing systems.
A multi-control dial is provided on XDCAM HD422 products, providing intuitive and quick scene searches. When GUI-based operation is preferred, the Scene Selection operation can also be performed on a PC running the PDZ-1 Proxy Browsing Software supplied with all XDCAM products, providing a visually familiar working environment.

*The video and audio of a clip cannot be edited independently.

Selectable Modes of File Recording

XDCAM HD422 camcorder and deck provide two types of file recording modes. In standard operation, one clip file is created each time recording is started and stopped. In the other mode, called Clip Continuous REC mode*, one clip file can be created at the users discretion. Although it is a single clip, Thumbnail Search operation and the Expand function are available just as if individual clips were created. Users can choose the most suitable mode depending on the type of application.

*Requires a software upgrade planned to be available in summer 2009.



Other Features

Power of Proxy Data – Highly Streamlined Workflows

At the same time as recording its high-resolution video and audio data, the XDCAM HD422 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. The bit rate is 1.5 Mb/s for video and 0.5 Mb/s for audio (up to eight channels).
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" (Okay)," NG" (No Good) or "KP" (Keep).

*Saving camera setup parameters requires a software upgrade planned to be available in summer 2009.

Local Language Support

A number of fonts for local languages can be used in Clip/Disc Properties in the PDW-700 and the PDW-HD1500.

Supported Languages
- German, French, Spanish, Russian, Japanese and more.

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.

XDCAM HD422 Camcorder **PDW-700**

The PDW-700 is a new camcorder equipped with newly developed Power HAD FX CCDs, which are 1920 x 1080 pixels, bringing strikingly high picture quality.

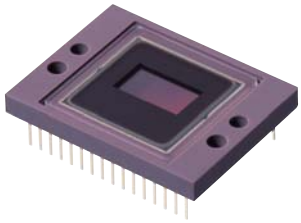
It provides recording capabilities in both 1080 and 720, an signal-to-noise ratio of 59 dB and sensitivity of F11 at 59.94 Hz (F12 at 50 Hz).

It can record four-channel 24-bit audio of uncompromised quality.

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

The PDW-700 is equipped with three 2/3-inch type 2.2-megapixel full HD progressive 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 F11 at 59.94 Hz (F12 at 50Hz) and an excellent signal-to-noise ratio of 59dB in Noise Suppression (NS) mode, which helps to reduce the high-frequency noise elements of video signals using Sony's advanced digital processing technology.
In addition to this performance, a wide variety of capturing frequencies of 59.94i, 50i, 29.97P, 25P and 23.98P* for 1080 mode, 59.94P and 50P for 720 mode are available.

*Requires optional CBKZ-F02 software.



14-bit A/D Conversion

The PDW-700 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-700 camcorder. In conjunction with the 14-bit A/D converter, it reproduces images captured by the CCD at maximum quality. In addition, on its large-scale logic circuits, this DSP comes with a variety of image-correction capabilities, some of which used to be on analog circuits, allowing for stable image correction.

Supported Recording Formats – HD/SD and Interlace/Progressive

One of the big appeals of the PDW-700 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*), in a variety of frame frequencies (as shown in the table on page 4).

*Requires optional CBKZ-MD01 software.

High-quality 24-bit Audio Recording

The PDW-700 records uncompressed four-channel, 24-bit audio (MPEG HD422 mode). It is also equipped with a range of audio interfaces.

Well-balanced Compact Body

The PDW-700 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.

Shock- and Dust-resistant Disc Drive

To minimize errors caused by shock or dust entering the disc drive, the PDW-700 has several unique ways of providing operational resistance to such factors. The disc drive entrance is concealed by two lids, helping to prevent any dust from entering the drive. In addition, four rubber dampers are used to hold the disc drive block in place and to absorb shocks that would otherwise go into the disc drive.

Viewfinders*

Two types of optional viewfinders are available for users: the HDVF-20A and HDVF-200 2.0-inch** monochrome viewfinders and the HDVF-C35W 3.5-inch** color viewfinder.

*No viewfinder is supplied with the PDW-700.
**Viewable area measured diagonally.

HDVF-C35W

HDVF-20A

HDVF-200

Wide Choice of Optional Microphones*

The PDW-700 is compatible with a variety of microphones. Three shotgun-type microphones, the ECM-680S, ECM-678, and ECM-674 are available as options. The ECM-680S can operate in either stereo or monaural (uni-directional) mode, allowing it to be used in both EFP and ENG applications. Stereo mode is ideal for capturing environmental sound with a natural quality, while monaural mode is ideal for capturing clear voice and sound from a distance. These modes can be selected from the switch on the microphone or from the PDW-700 itself.
The camcorder is also equipped with a slot to accommodate the DWR-S01D** digital wireless microphone receiver, which provides two-channel audio with stable and secure transmission that's tolerant to interference waves. The WRR-855 series microphone receiver can also be used within this slot.

*No microphone is supplied with the PDW-700.

**The digital wireless microphone system is not available in some countries where prohibited by the radio law.

The Digital Wireless Microphone System

DWT-B01
Digital Wireless Transmitter

DWR-S01D
Digital Wireless Receiver

3.5-inch* LCD

A large, easy-to-view, color LCD screen on the PDW-700 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-700 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.

*Only even number of frame setting is available in 720 mode. Slow Shutter can not function with the Digital Extender.

Interval Recording

The PDW-700 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 and Disc Exchange Cache

The PDW-700 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 internal memory before the Rec start button is even pressed (when in Standby mode). This means that everything that happened 30 seconds before the Rec start button was pressed will still be recorded on to the disc, helping to prevent the loss of any unexpected, yet important events. The caching period can be adjusted by menu setting.
This camcorder cache memory also allows users to exchange the discs while recording. By removing a disc from the drive and inserting a new disc within 30 seconds, video, audio and time code can be recorded seamlessly onto the new disc.

Live & Play Function*

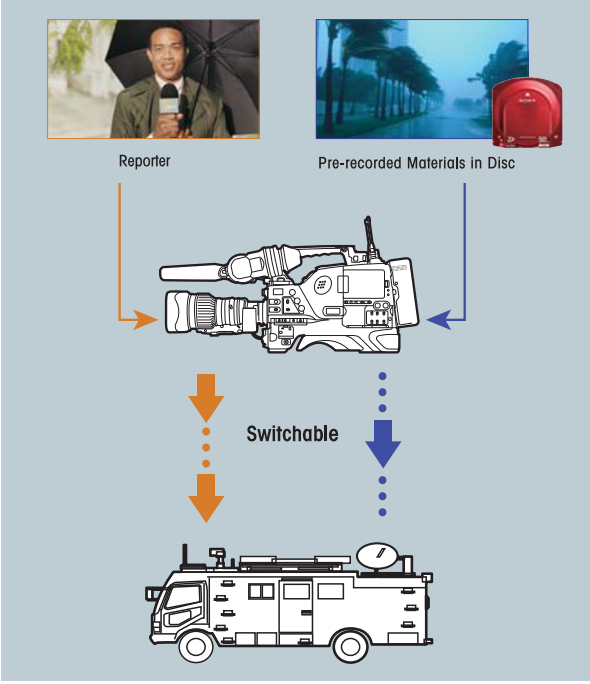
The PDW-700 camcorder has a Live & Play function that allows users to check both playback signals (images already recorded) and incoming camera signals (images seen through the viewfinder) simultaneously, and sequentially output them without any switching noise. Both signals are fed to their respective 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 then focus the lens while the camcorder is playing back the pre-recordings from the disc.
For instance, the camcorder can be used to perform the following three stages of a news broadcast:

1. The introduction to a news report (Output of incoming camera signals)
2. Pre-recorded clips (Output of playback signals)
3. The conclusion of the report (Output of incoming camera signals)

*Only one of the following functions can work at any one time:

1. Live & Play function
2. Focus Magnification
3. Letter Box mode in SD down-conversion
4. In-phase output between HD and SD.

Application Example at News Gathering



Affordable MPEG TS Option for Field and Satellite Transmission

The HDCA-702 MPEG TS Adaptor, which can be docked onto the PDW-700 camcorder, transmits MPEG Transport Stream (TS) of MPEG HD420 (1440 x 1080i) for either 1080i or 720P via DVB-ASI output. This can be done simultaneously as the PDW-700 records onto disc. The bit rate is selectable from 17.25 Mb/s to 43.25 Mb/s at every 10 kb/s, which is suitable for material transmissions using microwave and satellite modulators. When the bit rate is 35 Mb/s or higher, 1920 x 1080i mode can be selected.

PDW-700 with HDCA-702

Shockless Gain Control

A wide choice of gain and its easy-to-use control system is one remarkable feature of the PDW-700 camcorder. By setting the gain to the gain selector or 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 Filters and Electrical CC Filters

The PDW-700 camcorder comes equipped with optical ND (Neutral Density) filters and electrical CC (Color Correction) filters. The optical ND filter is controlled via a built-in ND filter wheel -- Clear, 1/4ND, 1/16ND/ and 1/64ND. And with the electrical CC filter, the user can easily obtain the desired color temperature by setting the mode - 3200K/4300K/5600K/6300K - on a camcorder-assignable switch. The user can select the four values cyclically or choose the one preset value. Another usage of CC filter function is color temperature setting which can instantly set the necessary temperature with the absolute value, 3200K, 4300K, 5600K or 6300K. This is also available via assignable switch. This is useful when a sudden change happens in shooting environment and a quick and direct setting is required.

Auto Tracing White Balance

The Auto Tracing White Balance function of the PDW-700 automatically adjusts the camera's color temperature according to changes in the lighting conditions. This function is useful when recording outside for long periods, and the lighting changes gradually over time. If required, the user can hold* the auto tracing at a desirable color balance via an assignable switch.

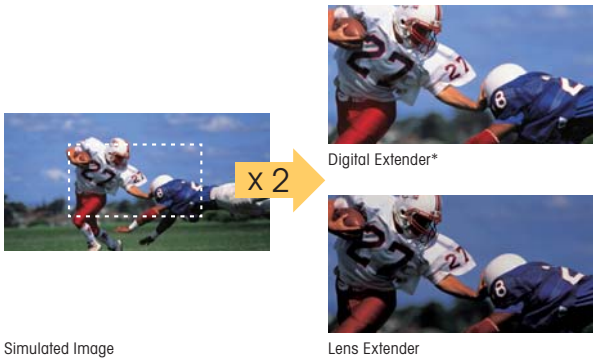
*Requires a software upgrade planned to be available in summer 2009.

HyperGamma

HyperGamma is a powerful feature, which is inherited from Sony's CineAlta camcorders. The PDW-700 provides four types of HyperGamma curve: HyperGamma 1, 2, 3, and 4. Operators can select the best-suited preset gamma curve depending on the scene being shot and their desired 'look' for the image. HyperGamma 1 and 3 enhance natural tonal reproduction in low-key areas, while HyperGamma 2 and 4 are suitable for scenes with wide dynamic ranges. All HyperGamma are quickly accessible via the set-up menu.

Digital Extender*

The Digital Extender function of the PDW-700 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.



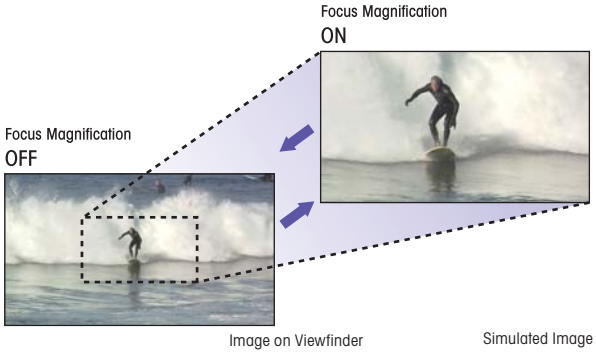
*Use of the Digital Extender function reduces image resolution by half. Digital Extender can not function with Slow Shutter.

Focus Magnification*

At the touch of an assignable button, the center of the screen on the viewfinder of the PDW-700 camcorder can be magnified to about twice the size, making it easier to confirm focus settings during manual focusing.

*Only one of the following functions can work at any one time:

1. Live & Play function
2. Focus Magnification
3. Letter Box mode in SD down-conversion
4. In-phase output between HD and SD



Wide Variety of Interfaces

The PDW-700 camcorder comes equipped with a wide range of interfaces.

PDW-700 Inputs/Outputs

		PDW-700
Signal input	SDI (HD/SD Switchable)	BNC x 1*1
	SD Composite	BNC x 1*2
	Genlock video	BNC x 1
	Audio	XLR-3pin (female) x 2, Line / Mic / Mic+48V / ASE/EBU selectable
	Mic	XLR-5pin (female, stereo) x 1
	Time Code	BNC x 1
Signal output	SDI (HD/SD Switchable)	BNC x 1
	SDI (HD/SD Switchable)	BNC x 1, Character ON/OFF
	HD Y/Composite (Swichable)	BNC x 1
	Audio	XLR-5pin (male, stereo) x 1
	Earphone	Mini-jack x 2
		(front: manaural, rear: stereo/monoral)
	Time Code	BNC x 1
IT	i.LINK	6-pin x 1*3, File Access Mode
	Ethernet	100Base-TX/10 Base-T x 1
Others	Camera Adaptor	50-pin x 1
	Remote	8-pin x 1
	Light	2-pin x 1 (max 12 V, 50 W)
	Lens	12-pin x 1
	Memory Stick	x 1 (for camera setup files)
	USB	x 1 (for maintenance)
Power	DC IN	XLR x 1
	DC OUT (12 V)	4-pin x 1 (for wireless microphone receiver)

*1:Requires an optional CBK-HD01 board.

*2:Requires an optional CBK-SC02 board, and share the same connector as the genlock video.

*3:AV/C (DV) interface is NOT supported.

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-700 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.

Other Camcorder Features

- Compatible with a variety of remote control units*: RM-B750/B150, MSU-950/900 and RCP-920/921/750/751
- Freeze Mix function superimposes a previously recorded image on the viewfinder; this allows the operator to quickly and easily frame or reposition a subject when a shot must be taken from the same position or in the same framework as a previous take
- Thumbnail Search function
- Expand function
- Scene Selection function for in-camera cuts-only editing**
- Ability to write EDL (the result of the Scene Selection) back onto disc
- Proxy Data recording
- Data file recording by User Data folder
- USB keyboard can be used for input text data on thumbnail GUI
- Customizable user menu: user can change the names of user menu files
- Five assignable buttons: two buttons on the camera handle, three on the inside panel (including Color Temp. button), which enable operators to assign frequently used functions (RET button on the lens can be used for this purpose)
- The Turbo Gain function can boost the camera gain up to +42 dB, which helps reproduce images in very low-light environments
- Memory Stick™, Memory Stick Pro™ and Memory Stick Pro Duo™ media (up to 4 GB) function for storage of camcorder setup files
- Monochrome LCD to show the time code and remaining recording time of the disc even when the power is off
- Metadata recording: UMID, Extended UMID, EssenceMark (Shot Mark), Clipflag
- Extended Clear Scan (ECS)
- Intelligent light system synchronizes strobe on/off to the Rec start button

*Operable distance (cable length) depends on the cable characteristics. Please refer to the supplied operational manual.

**The video and audio cannot be edited independently.

Camcorder View

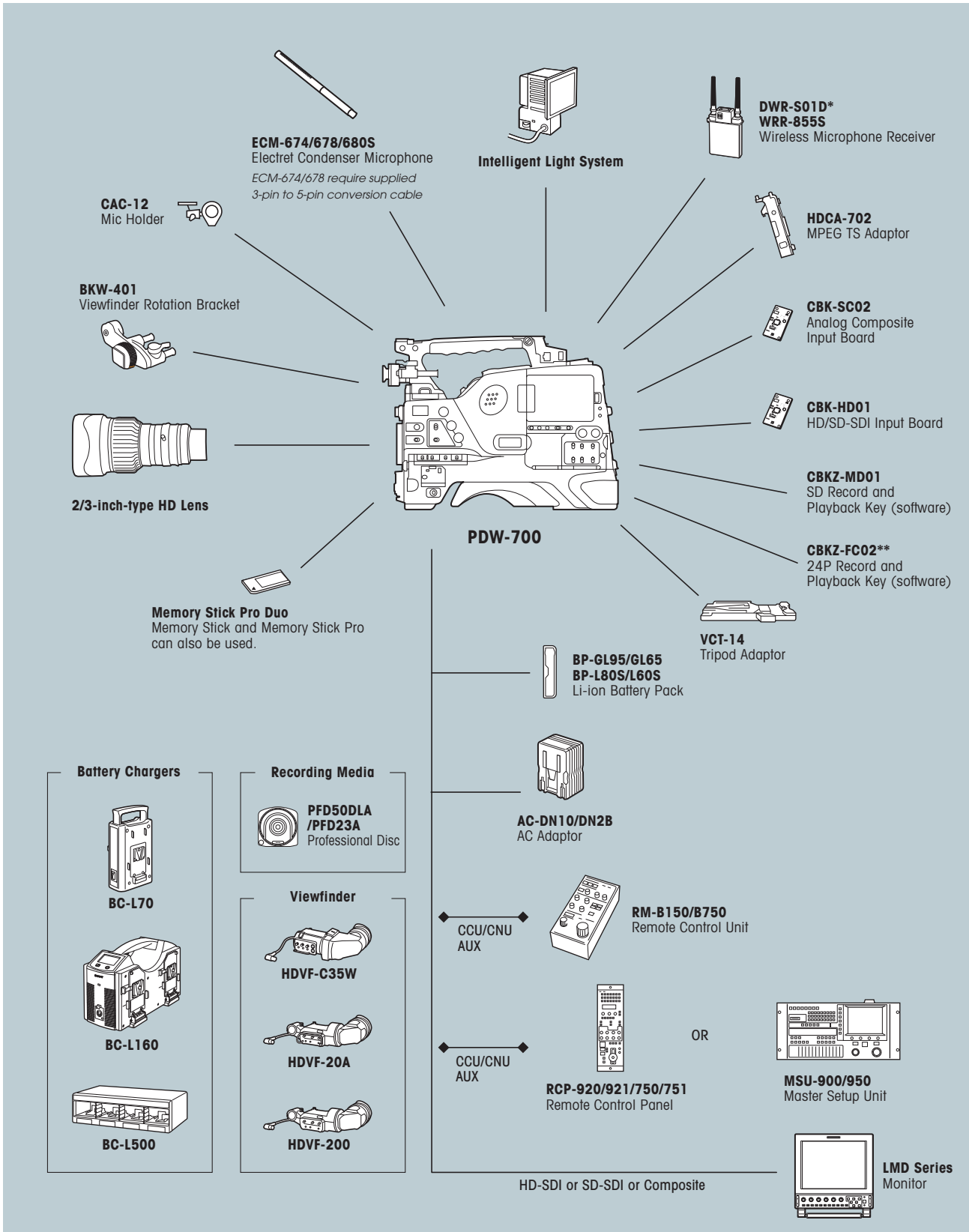
Top View

Connector Panel

Side

Rear

Camcorder System Diagrams



*The digital wireless microphone system is not available in some countries where prohibited by the radio law.
**Planned to be available in summer 2009.

Recording Deck **PDW-HD1500**

The PDW-HD1500 is a compact HD recorder which provides outstanding picture quality of MPEG HD422 as well as an eight-channel (HD-SDI), 24-bit audio recording capability. What's unique about this deck is its ability to operate on either AC, DC or battery. With its large 4.3-inch* LCD and built-in speaker, it performs as a versatile and high-quality recorder which is suitable for both in-house and field operations.

It comes equipped with a multi-format up/down converter, which is highly useful when employing both HD- and SD-format materials at the same time. What's more, the RS-422A interface enables the PDW-HD1500 to be used as a player deck for linear editing.

The PDW-HD1500 deck boasts fast data transfer at approx. 220 Mb/s** through Gigabit Ethernet, thanks to newly developed dual-optical head.

*Viewable area measured diagonally.

**When the material is recorded in MPEG HD422 mode.

PDW-HD1500 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 modes are supported for down-conversion: Edge crop, Squeeze and Letterbox (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-422A 9-pin remote control interface, allows 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 (DC powered) and 55 W (in power save mode, DC powered)
- Tilt-up front panel
- A large easy-to-see 4.3-inch* type color LCD display
- Trigger REC function (synchronized recording with compatible camcorders**)
- TBC Control, by front panel operation or remote control panel via RS-422A
- 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: -20 to +20 times normal speed)
- Metadata recording: UMID, Extended UMID, EssenceMark, Clipflag
- Easy metadata input by using USB keyboard or software keyboard
- Cache Recording and Disc Exchange Cache functions
- Data file recording by User Data folder
- Clip Continuous REC function via RS-422A or HD-SDI using Trigger REC function***
- Optional accessories that enhances operational features:
  - PDBK-S1500 (MPEG IMX/DVCAM) Recording and Playback Key
  - PDBK-201 MPEG TS IN/OUT Board: allows to input and output HDV™ compatible stream in 1080i/720P format
  - PDBK-F1500*** 24P Record and Playback Key (includes SD (MPEG IMX/DVCAM) recording/playback capability)

*Viewable area measured diagonally.

**PDW-700, HDW-650/730/750 series, HDW-790 and HDW-F900R

Tilt-up

Inputs/Outputs

PDW-HD1500 Inputs/Outputs

		PDW-HD1500
Signal input	SDI (HD/SD switchable)	BNC x 1
	Reference	BNC x 1
	Reference/Through	BNC x 1
	Analog Audio (Line)	XLR x 2
	Digital Audio, AES/EBU	BNC x 2, 4 Ch (2 Ch each, 1/2 Ch and 3/4 Ch)
	Time Code	BNC x 1
Signal output	HD-SDI	BNC x 1
	HD-SDI	BNC x 1 (Character On/Off)
	SD-SDI	BNC x 1
	SD-SDI	BNC x 1 (Character On/Off)
	SD Composite	BNC x 1
	SD Composite	BNC x 1 (Character On/Off)
	Analog Audio Line	XLR x 2
	Analog Audio Monitor	XLR x 2
	Digital Audio, AES/EBU	BNC x 2, 4 Ch (2 Ch each, 1/2 Ch and 3/4 Ch)
	Time Code	BNC x 1
IT	i.LINK	6-pin x 1*1, File Access Mode or HDV*2 1080i/720P
	Ethernet	1000Base-T/100Base-TX/10Base-T x 1
Others	Phones	Stereophone-jack x 1
	Remote	D-sub 9-pin x 1, RS-422A
	Video Control	D-sub 9-pin x 1, EIA RS-423
	USB	x 2 (for maintenance)
Power	AC IN	x 1
	DC IN	XLR x 1
	DC OUT (12 V)	4-pin x 1

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

Front Panel

Rear Panel

PDW-U1 Drive Unit

The PDW-U1* is another powerful tool in the XDCAM HD422 lineup, which offers a compact, mobile and highly cost-effective solution for many different applications.

It serves as an external drive connected via a common USB interface, and enables material recorded on Professional Disc media to be viewed directly on a PC. The PDW-U1 can also be used as a source feeder for nonlinear editing systems.

One of the most distinguished features of the PDW-U1 is its ability to handle all XDCAM HD422, HD and SD discs, providing a high level of versatility and cost efficiency.

Its compact and lightweight design makes it equally ideal for field and in-house desktop uses.

PDW-U1 Drive Unit

- Handles files in all formats of XDCAM HD422, XDCAM HD and XDCAM SD formats
- Handles both the new dual-layer disc (PFD50DLA) and single-layer disc (PFD23A)
- Supports the Hi-Speed USB (USB 2.0) interface – compatible with most PCs
- Direct access to files on Professional Disc media from a USB-connected PC
- High-speed file transfers with the newly developed optical drive
- Material browsing on the supplied PDZ-VX10 XDCAM Viewer software and PDZ-1 Proxy Browsing software
- Data file recording by User Data folder**
- Highly compact and lightweight
- Dimensions (W x H x D): 59 x 164 x 226 mm (2 3/8 x 6 1/2 x 9 inches)
- Mass: 1.4 kg (3 lb 1 oz)
- Can be operated either horizontally or vertically

*Support for Mac OS is planned to be available in the first half of 2009.

**Requires a VFAM driver software upgrade planned to be available in summer 2009.

Front


Rear

PDW-U1 Specifications

		PDW-U1
Power requirements		DC 12 V
Power consumption		10 W
Operating temperature		5 to 40°C (+41 to +104 °F)
Storage temperature		-20 to +60°C (-4 to +140 °F)
Humidity		20 to 90% (relative humidity)
Mass		1.4 kg (3 lb 1 oz)
Dimensions		59 x 164 x 226 mm (2 3/8 x 6 1/2 x 9 inches)
Recording /playback format	Video	MPEG HD422 (50 Mb/s)
		MPEG HD (35/25/18 Mb/s)
		MPEG IMX (50/40/30 Mb/s),
		DVCAM (25 Mb/s)
	Proxy Video	MPEG-4
	Audio	MPEG HD422: 8 ch/24 bits/48kHz
		MPEG HD: 4/2 ch/16bits/48kHz
		MPEG IMX: 8 ch/16 bit/48 kHz, or 4 ch/24 bit/48 kHz
		DVCAM: 4 ch/16 bit/48 kHz
	Proxy Audio	A-law (8/4/2 ch/8 bit/8 kHz)
Interfaces		Hi-Speed USB (USB 2.0) x 1
Supplied accessories		Operation manual (x1)
		PDZ-1 Proxy Browsing Software (x1)
		PDZ-VX10 XDCAM Viewer Software (x1)
		PDZK-P1 XDCAM Transfer Software (x1)
		XDCAM Drive Software (x1)

XDCAM Application Software

All XDCAM HD422 products come with a variety of free application software packages that maximize the benefits of XDCAM disc- and file-based operations.

PDZ-1

PDZ-1 software is a simple-to-use PC application that allows users to easily browse and storyboard video clips recorded by an XDCAM system. It runs on Windows-based PCs and supports three types of interfaces: i.LINK (File Access Mode), Ethernet and USB*.

Once Proxy Data recorded on Professional Disc media is transferred to a PC with the PDZ-1 software installed, users can conveniently view and storyboard recorded footage right on the PC. PDZ-1 software also provides a variety of convenient tools for disc operations such as entire or partial disc copy (dubbing), and transfer between two XDCAM devices.

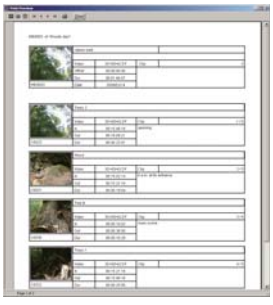
Storyboarding on a PC not only allows users to preview their edited sequences instantly, it also provides other powerful benefits such as the creation of ASF files (playable on Windows Media Player) and EDL data in various EDL formats, plus the transfer of high-resolution clips selected in the edited sequence.

*USB interface is only for PDW-U1.

PDZ-1 Features

- Supported interfaces: i.LINK (File Access Mode), Ethernet and USB (only for connection with the PDW-U1)
- High-speed ingestion of Proxy Data from XDCAM devices
- Browsing of Proxy Data recorded by the XDCAM systems (including those recorded by the SD version of the XDCAM system)
- Simple and quick cuts-only editing (storyboarding)* with the following functions:
  - Preview a result of the storyboard on PC
  - Save the results as a Clip List (XDCAM EDL)
  - Convert the Proxy Data on the storyboard to an ASF file for replay on Windows Media Player
  - Export the Clip List in AAF, BVE-9100, NewsBase™ XML and ALE (Avid Log Exchange) formats
  - Transfer high resolution clips according to the Clip List
- Disc copy – entire disc (all clips) or only selected clips
- Transfer selected clips with margins at the head and tail of the clips
- Registration of metadata such as "title", "creator", or "comments" for a disc or clip
- Registration of EssenceMark metadata for instant cue-up to desired scenes; names for EssenceMark metadata can also be easily assigned
- Automatic renaming of clips by predetermined rule (uses a predetermined prefix plus sequential numbers)
- Clip Search function using the registered metadata as a keyword
- Print function allows metadata such as thumbnails, creation date and comments to be printed out in an easy-to-see storyboard view

*The video and audio of a clip cannot be edited independently.



System Requirements

OS: Windows XP (SP2 or later), Windows Vista Business 32bit/Ultimate 32bit

CPU: Pentium M Processor or higher

NOTE: When using Live Logging Mode, recommended CPU is Pentium4 2GHz or higher

RAM: 512 MB or more

Others: Internet Explorer 6.0 (SP1 or later), DirectX 8.1b or later

PDZ-VX10 Sony XDCAM Viewer

PDZ-VX10 software allows the user to view on their PC high-resolution and Proxy MXF files recorded by XDCAM systems. With this software installed, thumbnails for all clips can be displayed in Windows Explorer, enabling the contents of a disc to be scanned easily and quickly.

System Requirements

OS: Windows XP (SP2 or later), Windows Vista Business 32bit/Ultimate 32bit

CPU: Intel Core Duo processor 1.83GHz or higher or Intel Pentium4 3GHz or higher Recommend to use Intel Core 2 Duo 2.6GHz or higher for HD 422 50M playback

RAM: 1 GB or more

Others: Internet Explorer 6.0 (SP1 or later), DirectX 9.0c or later

Proxy Viewer

The Proxy Viewer of the PDZ-VX10 software is a simple application to play back Proxy Data on a PC.

System Requirements

OS: Windows XP (SP2 or later), Windows Vista Business 32bit/Ultimate 32bit

CPU: Pentium M Processor or higher

RAM: 512 MB or more

Others: Internet Explorer 6.0 (SP1 or later), DirectX 8.1b or later

PDZK-P1 XDCAM Transfer for Apple Final Cut Pro Nonlinear Editing Systems

PDZK-P1 XDCAM Transfer is plug-in software for Apple Final Cut Pro nonlinear editing systems that provides native support for MXF files recorded by XDCAM systems. With this software installed, XDCAM devices can be mounted on Mac Finder via a FireWire/i.LINK connection, and users can seamlessly import, edit and export recorded material.

System Requirements

OS: Mac OS X version Tiger 10.4.11 or later
Mac OS X version Leopard 10.5 or later

CPU: PowerPC G5 2GHz, Intel Core2Duo 2GHz, Intel Xeon 2GHz or higher

Others: QuickTime version Ver7.3.1 or later
Final Cut Pro version 6.0.3 or later

The latest versions of software can be downloaded from the Sony Website.
Please contact your nearest Sony office for details.

PDJ-C1080 Cart/PDJ-A640 Cart

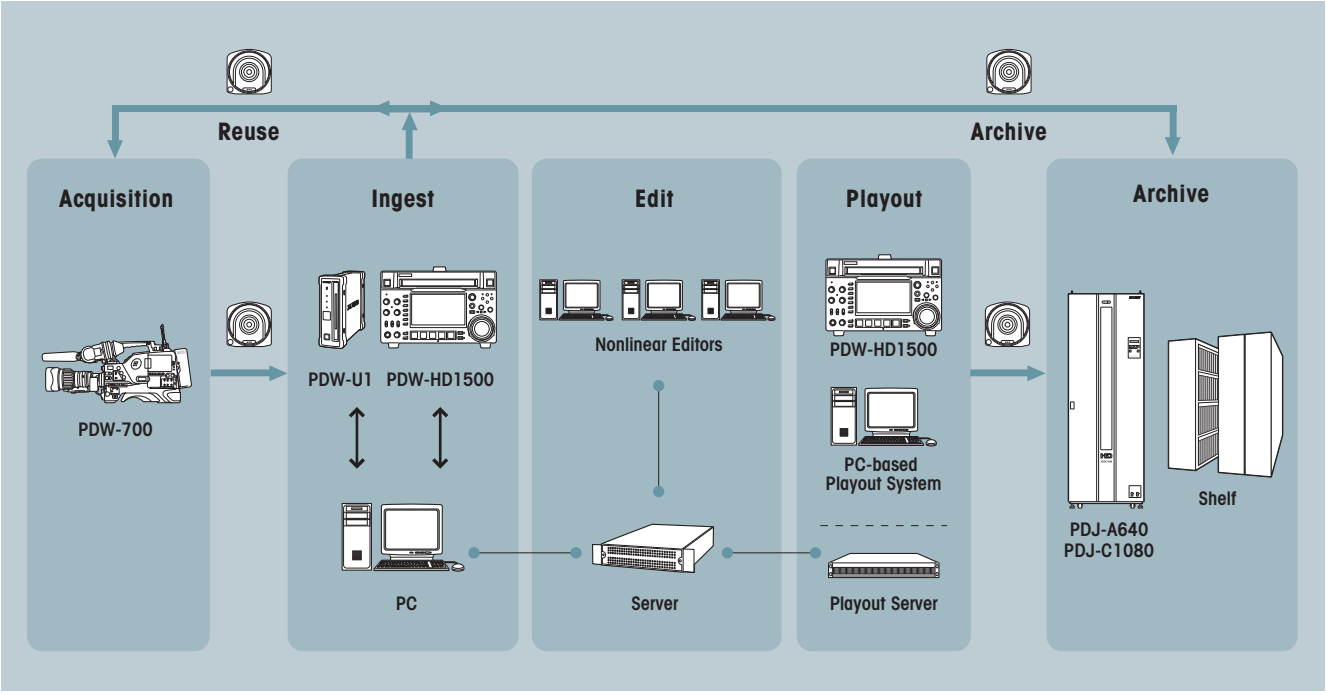
The PDJ-C1080 and PDJ-A640 are automated robotic cart systems ideal for multi-disc ingesting, archiving and on-air playout applications. The smaller PDJ-C1080 accommodates up to four PDW-HD1500 units and up to 80 discs, while the larger PDJ-A640 accommodates up to four PDW-HD1500 units and up to 640 discs. The PDJ-A640 also accommodates PDW-F75 XDCAM HD decks or/and PDW-1500 XDCAM decks in any combination with PDW-HD1500 units.
These cart systems are equipped with a standard VCC control protocol, allowing easy integration into existing systems. The total storage capacities are 4 Terabytes when using 80 discs and 32 Terabytes using 640 of 50-GB discs. PDJ-CS10 Cart Interface Software allows third-party applications to transfer files from the cart over the network, without controlling the cart's robotics or decks. With XDCAM file-based operations and metadata capability, as well as the reliability, long life and small physical size of Professional Disc media, these cart systems provide significant operational benefits, greater reliability, reduced operational costs and space-saving benefits compared to tape based systems.

- Ideal for multi-disc ingesting, archiving and on-air playout applications
- Equipped with VCC protocol (RS-422A or RS-232C)
- Equipped with a barcode reader unit
- Optional PDJ-CS10 Application Software allows third-party applications to transfer files from the cart over the network, without controlling the cart's robotics or decks
- High reliability and low-cost maintenance
- Data file recording by User Data folder

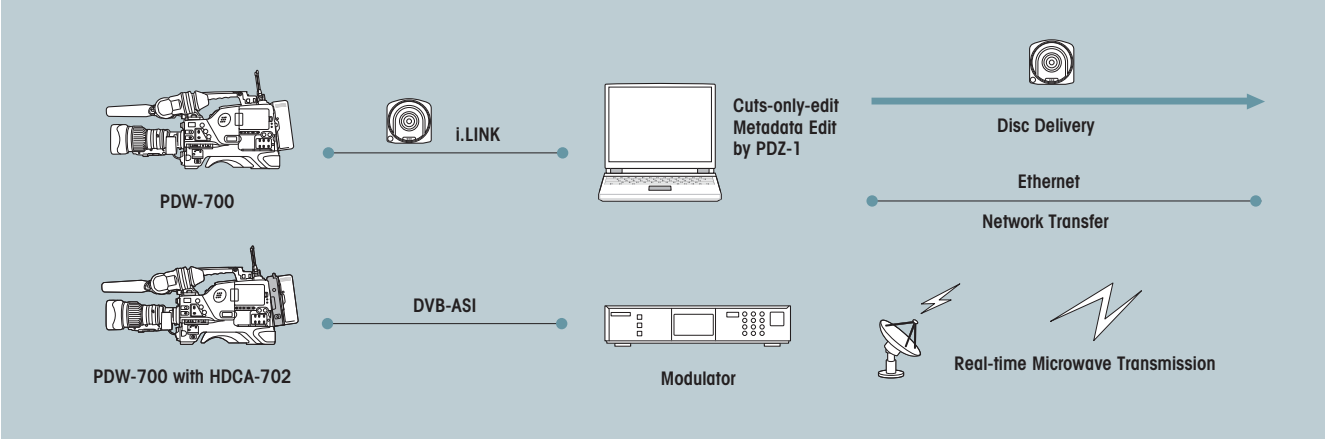
PDJ-C1080

PDJ-A640

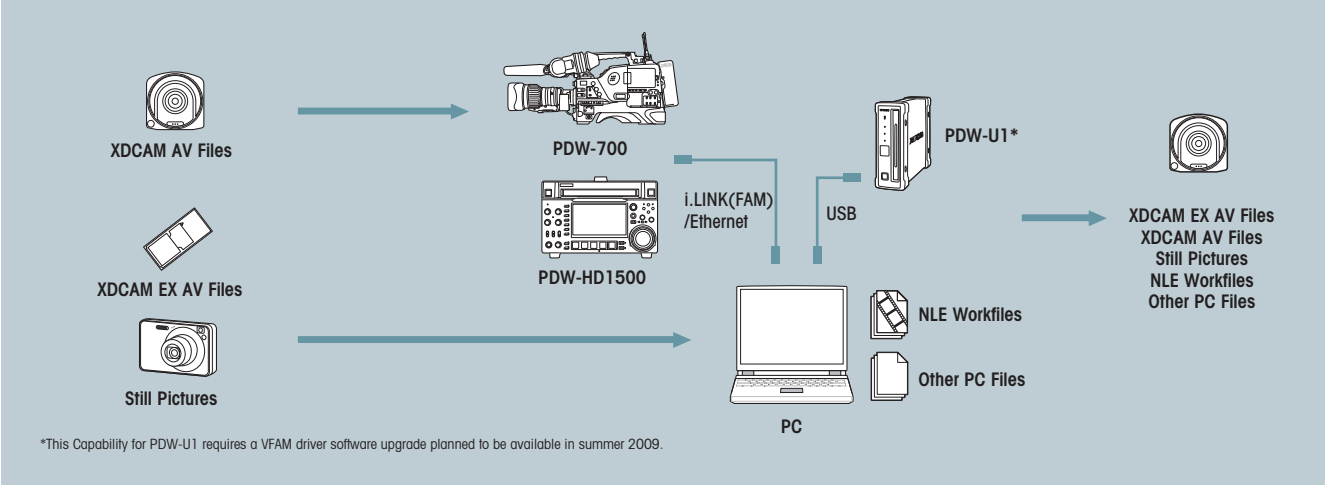
XDCAM HD422 Workflow



XDCAM Transfer Operation



Data File Recording by User Data Folder



*This Capability for PDW-U1 requires a VFAM driver software upgrade planned to be available in summer 2009.

Optional Accessories

PDW-700 Camcorder

PFD50DLA
Professional Disc

PFD23A
Professional Disc

CBK-HD01
HD/SD-SDI Input Board

CBK-SC02
Analog Composite Input Board

CBKZ-MD01
SD Record and Playback Key (software)

CBKZ-FC02*
24P Record and Playback Key (software)

HDVF-C35W
3.5-inch** LCD Color Viewfinder

HDVF-20A
2.0-inch** CRT B/W Viewfinder

HDVF-200
2.0-inch** CRT B/W Viewfinder

BP-GL95/GL65
Lithium-ion Battery Pack

BP-L80S/L60S
Lithium-ion Battery Pack

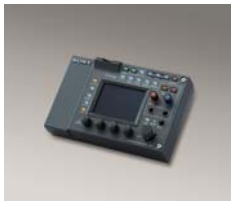
BC-L500
Battery Charger

BC-L160
Battery Charger

BC-L70
Battery Charger

AC-DN10/DN2B
AC Adaptor
(Photo shows AC-DN10)
AC-DN10: Max. 100 W
AC-DN2B: Max. 150 W

RM-B150
Remote Control Unit



RM-B750
Remote Control Unit

RCP-920/921/750/751
Remote Control Unit
(Photo shows RCP-920)

MSU-900/950
Master Setup Unit
(Photo shows MSU-900)

WRR-861A/861B
Wireless Microphone Receiver
(Requires optional mounting bracket A-8278-057-B)

WRR-855S
Wireless Microphone Receiver

ECM-680S
Shotgun-type Electret Condenser Microphone

ECM-674/678
Shotgun-type Electret Condenser Microphone
(Photo shows ECM-674. Requires supplied 3-pin to 5-pin conversion cable)

HDCA-702
MPEG TS Adaptor

VCT-14
Tripod Adaptor

*Planned to be available in summer 2009.
**Viewable area measured diagonally.

BKW-401
Viewfinder Rotation Bracket

CAC-12
Mic Holder

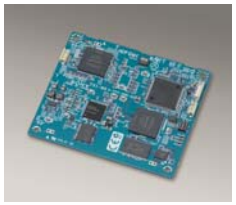
LC-H300
Carrying Case (Hard)

LC-DS300SFT
Carrying Case (Soft)

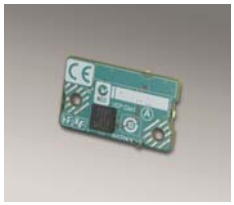
PDW-HD1500 Deck

PFD50DLA
Professional Disc

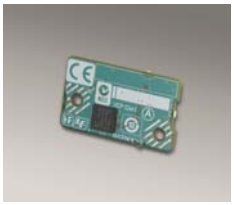
PFD23A
Professional Disc



PDBK-201
MPEG TS IN/OUT Board



PDBK-S1500
SD Record and
Playback Key



PDBK-F1500*
24P Record and
Playback Key

BKP-L551
Lithium-ion Battery Adaptor

BP-GL95
Lithium-ion Battery Pack

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)

*Planned to be available in summer 2009.

XDCAM HD422 Camcorder Specifications

			PDW-700
General	Mass		Approx. 4.3 kg (9 lb 8 oz) (w/o options),Approx. 6.0 kg (w/VF, Mic, Disc, BP-GL95 battery) (13 lb 4 oz)
	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 lense, microphone)
	Operating temperature		-5 to +40 (+23 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)
			MPEG HD: SP mode (CBR, 25 Mb/s)
			MPEG HD: LP mode (VBR, maximum bit rate: 18 Mb/s) (Playback only)
			MPEG IMX*1 (CBR, 50/40/30 Mb/s)
			DVCAM*1 (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*1: 4 ch/24 bits/48 kHz or 4 ch/16 bits/48 kHz
			DVCAM*1: 4 ch/16 bits/48 kHz
		Proxy audio	A-law (4 ch/8 bits/8 kHz)
	Recording/playback time		MPEG HD422 mode: Approx. 95 min. with PFD50DLA. Approx. 43 min. with PFD23A. For details, please refer to "XDCAM HD422 Recording/Playback Specifications"
Inputs/outputs	SDI IN		BNC x 1*2 (switchable): HD-SDI: SMPTE 292M (w/embedded audio)
			BNC x 1*2 (switchable): SD-SDI: SMPTE 259M (w/embedded audio)
	GENLOCK IN		BNC x 1, 1.0 Vp-p, 75Ω, unbalanced (Composite input*3 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
			BNC x 1 (switchable): 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*4, 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*5)
	USB		x 1
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 1 kHz, 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		1: Clear, 2: 1/4ND, 3: 1/16ND, 4: 1/64ND
	Shutter speed	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
	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*6, -3, 0, 3, 6, 9, 12, 18, 24, 30, 36, 42 dB
	Smear level		-135 dB
	S/N ratio		59 dB (54 dB w/o NS)
	Modulation depth		45% or more at 27.5 MHz (center of view)
	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 type color LCD monitor
Supplied accessories			Shoulder belt (x 1), Operation manual (x 1), XDCAM Application Software CD-ROM (x 1) Microphone cable (for converting 3-pin to 5-pin) (x 1)

*1: Requires optional CBKZ-MD01 software.
*2: Requires an optional CBK-HD01 board.
*3: Requires an optional CBK-SC02 board.
*4: AV/C (DV) interface is NOT supported.
*5: Saving camera setup parameters requires a software upgrade planned to be available in summer 2009.
*6: Dynamic range becomes half when -6 dB is selected.

XDCAM HD422 Deck Specifications

			PDW-HD1500	
General	Dimensions (W x H x D)		210 x 132 x 396 mm (8 3/8 x 5 1/4 x 15 5/8 inches)	
	Mass		Approx. 6.5 kg (14 lb 5 oz)	
	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		+5 to +40 °C (+41 to 104 °F)	
	Storage temperature		-20 to +60 °C (-4 to +140 °F)	
	Humidity		25 to 90% (relative humidity)	
	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*1 (CBR, 50/40/30 Mb/s)	
			DVCAM*1 (CBR, 25 Mb/s)	
		Proxy video	MPEG-4	
		Audio	MPEG HD422: 8 ch/24 bits/48 kHz	
			MPEG HD: 4 ch/16 bits/48 kHz	
			MPEG IMX*1: 4 ch/24 bits/48 kHz or 8 ch/16 bits/48 kHz	
			DVCAM*1: 4 ch/16 bits/48 kHz	
		Proxy audio	A-law: 8ch/8 bits/8 kHz	
	Recording/playback time		MPEG HD422 mode: Approx. 95 min. with PFD50DLA. Approx. 43 min. with PFD23A. For details, please refer to "XDCAM HD422 Recording/playback Specifications"	
	Search speed (in color)	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 INPUT		BNC x 1 (switchable)	HD-SDI: SMPTE 292M (w/embedded audio)
				SD-SDI: SMPTE 259M (w/embedded audio)
	REF.VIDEO INPUT		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 INPUT		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-1997	
	TIME CODE IN		BNC x 1, SMPTE time code, 0.5 to 18 Vp-p/3.3 kΩ/unbalanced	
	HDSDI OUTPUT 1		BNC x 1, SMPTE 292M (w/embedded audio)	
	HDSDI OUTPUT 2 (SUPER)		BNC x 1, SMPTE 292M (w/embedded audio), character On/Off	
	SDSDI OUTPUT 1		BNC x 1, SMPTE 259M (w/embedded audio)	
	SDSDI OUTPUT 2 (SUPER)		BNC x 1, SMPTE 259M (w/embedded audio), character On/Off	
	COMPOSITE OUTPUT 1		BNC x 1, 10 Vp-p/75 Ω/negative, SMPTE 172M	
	COMPOSITE OUTPUT 2 (SUPER)		BNC x 1, 10 Vp-p/75 Ω/negative, SMPTE 172M, character On/Off	
	ANALOG AUDIO OUTPUT		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-1997	
	TIME CODE OUT		BNC x 1, SMPTE time code, 1 Vp-p/75 Ω/unbalanced	
	PHONES		Stereophone-jack x 1	
	i.LINK S400		6-pin x 1*2	File Access Mode
				HDV*3 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	
	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)	
Supplied accessories			Operation manual (x 1), Installation manual (x 1), XDCAM Application Software CD-ROM (x 1)	

*1: Requires optional PDBK-S1500 or PDBK-F1500 hardware key.
*2: AV/C (DV) interface is NOT supported.
*3: Requires optional PDBK-201 board.

SONY

Distributed by

MSD0812030(10484V2)WEL0014

Printed in Hong Kong