PWS-4500

4K / HD multi-port AV storage unit for IP network

Overview

The PWS-4500 live server system is one of the key elements of Sony's next-generation 4K/HD live production solution with IP technology.

The PWS-4500 incorporates all the functions of the PWS-4400, including XAVC (both 4K and HD) and Avid DNxHD® recording capabilities*, flexible I/O configurations and HFR recording capability. In addition, the PWS-4500 adds IP interfaces, file sharing function (Share Play), and redundant power supply. Moreover, the system can be configured flexibly, using various optional accessories, allowing it to be used as a highly cost-effective plain HD production recorder with less I/Os, or as a full-featured slow replay server supporting both 4K and HD formats, and both SDI and IP interfaces, depending on users requirements.

The PWS-4500 system consists of 5 products – the PWS-4500 Multi Port AV Storage Unit (as a recording deck), the PWSK-4403 USB Control Device (as a control panel with a jog shuttle and a fader lever), the PWS-100PR1 Production Control Station (Workstation that runs production application software) , the PWS-100MG1 Media Gateway Station (Workstation that transfers files), the PWS-110CM1 (Content management workstation). In addition, there are several option boards and software that need to be installed per users' requirements.

Moreover, the associated Window's 10, Embedded 8 and 8.1 PC running application software, the PWA-RCT1 Recording Control Software, which can trigger rec/stop/play/file transfer from a PC, adds operational flexibility to the PWS-4500 so that it can be used as an easy-to-use multi-port 4K/HD production recorder for a wider variety of production usages.

With the recent software version up, V2.2 and V2.3 (available June 2017), the PWS-4500 has been enhanced with the following features/function.

Software version 2.2

- Supporting up to 4K 8x and HD 16x Slow Motion Replay by Share Play with BPU-4800.
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- Can be applied to 4K S-Log3 and 4K HLG (Hybrid Log Gamma) signal.
- Adding Quick Name Mode as new GUI for Quicker Clip Naming
- Frame Chase Transfer to ODA Gen2 System

Software version 2.3

- Providing Metadata Workflow for OB truck working with the PWS-110CM1 Content Management Station

- Additional support of Optimized XAVC encoding for HDR production. HD S-Log3, HD HLG, and 4K/HD PQ (Perceptual Quantization)

* Avid and DNxHD are trademarks or registered trademarks of Avid Technology, Inc. or its subsidiaries in the United States and/or other countries.

Features

An advanced 4K/HD XAVC server with IP interfaces
The PWS-4500 is a 4K/HD XAVC server with IP interfaces (PWSK-4506F Networked Media Interface Board is required), which enables IP live production for 4K/HD in combination with BPU-4500 Baseband Processor Unit.

File sharing function via 10G networking (Share Play)
Files can be viewed and shared among servers (PWS-4500) using a 10G network, without having to push/pull files among servers, which leads to more effective workflow.

Redundant power supply
The standard redundant power supply unit assures a high reliability of operation.

Flexible I/O configuration
4 channels 4K & QFHD
8 channels HD (1080 or 720)

Important Note: Two PWSK-4504 SDI Interface Boards need to be installed to expand the number of ports. PWSL-HR45 software option is required for 4K capability.

Supporting XAVC video format, Avid DNxHD® codec option, and Apple ProRes codec option*
The server supports the very efficient XAVC codec. In 4K workflows, the unit generates a 4K XAVC MXF file that can be handled easily in non-linear editing systems (NLE).

*Avid and DNxHD are trademarks or registered trademarks of Avid Technology, Inc. or its subsidiaries in the United States and/or other countries.

Efficient XAVC video format and Avid DNxHD® codec option*
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HFR support HD 8x slow motion and 4K 2x slow motion*
HFR (High Frame Rate) recordings in HD at 3x or 8x slow motion and in 4K 2x with the HDC-4300 system camera, HD 4x or 6x with the PMW-F55 and 4K 2x with the F65.

* The PWSL-HF45 HFR software is required to perform 4x/6x/8x slow motion recording.

Simultaneous 4K and HD recordings
The PWS-4500 can record 4K and HD simultaneously, giving you the option of using the HD as a proxy.

Easy transcoding between XAVC and XDCAM MPEG2 MXF files*
The PWS-4500 working with the PWS-100MG1 Media Gateway Workstation allows you to transcode XAVC MXF to and from XDCAM MPEG2 MXF for accessing media stored on USB Hard Drive, Optical Disc Archive and SxS cards.

* The PWA-MGW1B Video Transcode software is required.

Large internal storage capacity
The PWS-4500 provides 2TB of storage as standard, with the option to increase up to 8TB by adding 2TB storage option, the PWSK-4401 Internal Memory Array.

Recorder with large amount of capacity
Simple and intuitive control of PWS-4500 using the PWA-RCT1 Record Control Software, which can trigger rec/stop/play/file transfer from a PC, adds operational flexibility to the PWS-4500, allowing it to be used as a multi-port 4K/HD recorder.

Variety of media supported
Media supported includes HDD, Optical Disc Archive, SxS card and Professional Disc.

Specifications

General

Recording format	XAVC, Avid DNxHD®, Apple ProRes
Power requirements	100 V to 127 V AC / 200 V to 240 V AC
Power consumption	Max. 480 W
Operating temperature	5°C to 40°C (41°F to 104°F)
Storage temperature	−20°C to +60°C (−4°F to +140°F)
Humidity	25% to 90% (non-condensing)
Mass	22 kg (48 lb 8 oz) (with all options installed)

Video (422 format)

Sampling frequency	Y: 74.25 MHz, Pb/Pr: 37.125 MHz
Quantization	8/10 bits
Compression	XAVC, Avid DNxHD®, Apple ProRes

Audio (Digital audio signal format)

Sampling frequency	48 kHz (video sync)
Quantization	24 bits
Headroom	20 dB/18 dB/16 dB/15 dB/12 dB/9 dB (selectable)

I/O connectors (When ENCODER mode is selected (per board))

SDI Input (1 to 4)	BNC (x4) HD SDI (1.485 Gbps) SMPTE ST 292-1/BTA-S004B compliant 3G SDI (2.97 GHz) SMPTE ST 424 Level A, B
	BNC (x4) HD SDI (1.485 Gbps) 3G SDI (2.97 GHz)

SDI Output (INPUT MONITOR 5 to 8)	HD SDI (1.485 Gbps), 3G SDI (2.97 GHz) Does not satisfy the SDI signal standard, and should be used for input signal monitor applications only.
MONITOR	BNC (x2) HD SDI (1.485 Gbps) SMPTE ST 292-1/BTA-S004B compliant
TIME CODE Input	BNC (x1) 0.5 to 5 Vpp, 10 kΩ
TIME CODE Output	BNC (x1) 1.5 Vpp, low impedance
DIGITAL AUDIO (AES/EBU) Input	BNC (x4) CH 1/2 to CH 7/8, AES/EBU format, unbalanced When connecting devices for AES/EBU signal input/output, use a cable whose length is less than 300 meters (984 feet).

I/O connectors (When DECODER mode is selected (per board))

SDI Output (1 to 8)	BNC (x8) HD SDI (1.485 Gbps) SMPTE ST 292-1/BTA-S004B compliant 3G SDI (2.97 GHz) SMPTE ST 424 Level A, B
SDI Output (MONITOR)	BNC (x2) HD SDI (1.485 Gbps) SMPTE ST 292-1/BTA-S004B compliant
TIME CODE Output	BNC (x1) 1.5 Vpp, low impedance
DIGITAL AUDIO (AES/EBU)	Output BNC (x4), CH 1/2 to CH 7/8, AES/EBU format, unbalanced
File sharing	SHARE PLAY 1 to 2 RJ-45 (x2) Network Interface 10G Copper
Monitoring	NMI MONITOR 1 to 2: RJ-45 (x2) Network interface 1G Copper MONITOR: HD SDI (1.485 Gbps) SMPTE ST 292-1/BTA-S004B compliant
Reference: REF INPUT	BNC (x2) including 1 loop through, 75 Ω with terminal switch HD (tri-level sync), SD (Black Burst) NTSC: 0.286 Vpp, 75 Ω, PAL: 0.3 Vpp, 75 Ω
Remote	REMOTE1/2 to REMOTE7/8: RJ-45 (x4) GPIO (25P): 25-pin D-Sub, female (x1) NETWORK 1 to 2: RJ-45 (x2), 1000BASE-T MAINTENANCE: USB (x1) NETWORK: SFP+ (x1) 10GBASE-SR/LR (Add-in Card) *1 *2
Supplied accessories	Operation guide (1), Installation manual (1), Operation manual (CD-ROM 1), Cable: RJ45-DSUB (4)

Notes

*1	Network card connected to the unit (Intel Ethernet Converged Network Adapter X520-DA1)
*2	Available only when an SFP+ module is installed.

This product contains pre-installed software and requires the purchase of licence keys to activate some functions.

Related products

PWS-100MG1

Media Gateway Workstation

PWA-RCT1

Record Control Software for PWS-4500 and PWS-4400

HDC-4300

4K/HD System Camera

PWS-110PR1

Short-depth Production Control Workstation

BPU-4500A

4K/HD baseband processor unit for IP network production

PWS-110MG1

Short-depth Media Gateway Workstation

PWA-MGW1B

Video Transcode Software

PWSK-4403

PWS-4403 Control Panel

PWS-110CM1

Content Management Station

Gallery

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6