

SONY

PWS-4500

Multi Port AV Storage Unit

4K

4K/HD Live Server System

The PWS-4500 system is one of the key components of Sony's next-generation 4K/HD live production solution. Capable of recording images in the highly efficient XAVC™ recording format, this system offers flexible I/O configurations, high-frame-rate (HFR) recording, an intuitive user interface designed for professional operators, and much more. It is integral to creating an efficient multi-port slow-replay server system for live sports production in both 4K and HD infrastructures.

Flexible configuration for 4K and HD

The system can be configured flexibly, using various option boards and software. Starting from a highly cost-effective 4-channel HD production recorder as a most basic configuration, you can expand to a 4-channel 4K recorder/HD 8-channel recorder solution with a Networked Media Interface. Simply choose the optimal configuration based on your requirements.

4K/HD HFR recording and replay

The PWS-4500 records camera feeds captured at a high frame rate with Sony's live camera systems, and can instantaneously replay them in very smooth slow motion at HD 2x and 3x as standard. You can also achieve HD 4x, 6x, 8x, and 16x, and 4K 2x slow-motion replay using the following optional software:

- HD 4x, 6x, and 8x: PWSL-HF45 HFR software
- 4K 2x: PWSL-HR45 4K/HD Cut Out software and PWSL-HF45 HFR (High-frame-rate) software

Large-capacity memory storage

A large 2 TB of memory is provided as standard, enabling six-hour recording in 4K and 24-hour recording in HD. You can expand this up to 8 TB by installing optional memory boards (PWSK-4401).



HD cut out from 4K

With PWSL-HR45 4K/HD Cut Out software installed on the PWS-4500, a full HD picture can be cut out from up to 3 recorded 4K sources. Each cut out sequence uses key frames referenced to timecode, position & zoom level for fast, intuitive and creative operation. And also, you can select Live Zoom mode.

Connectivity with next-generation IP-based infrastructure

Sony has been developing a next-generation production infrastructure using 10 GbE IP networking, culminating in a practical solution for IP live production systems – the Networked Media Interface. This interface is available with the PWS-4500 system. You can connect with any IP live production environment simply by adding the optional PWSK-4506F Networked Media Interface Board, allowing video and audio signals to be received and transmitted over an IP network

“Share Play”: Efficient file sharing via 10 GbE IP networking

Once clips have been recorded by a PWS-4500 server connected to a dedicated 10 GbE IP network, the new Share Play feature enables these clips to be shared among all connected PWS-4500 servers. This delivers a more efficient workflow. In addition, the Share Play feature can also be utilized when the PWS-4500 is connected to the HDC-4800 4K/HD Ultra High Frame Rate Camera System together with its dedicated 4K Baseband Processor BPU-4800 via the network.

Specifications

PWS-4500	
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
SDI Output (INPUT MONITOR 5 to 8)	BNC (x4) 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 NMI MONITOR 1 to 2 RJ-45 (x2) Network interface 1G Copper
Monitoring	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)		
PWSK-4403		
General		
Power requirements	12 V DC / 1A	
Operating temperature	5°C to 40°C (41°F to 104°F)	
Humidity	20% to 90%	
Mass	1.7 kg (3 lb 12 oz)	
Connectors		
USB	USB 2.0 (Type-B) (x1)	
PWS-100PR1 / PWS-100MG1 / PWS-110PR1		
General		
Power requirements	100 V to 240 V AC, 50/60 Hz	
Power consumption	235 W	
Operating temperature	5 °C to 35 °C (41 °F to 95 °F)	
Storage temperature	-20°C to +60°C (-4°F to +140°F)	
Humidity	20% to 90% (relative humidity)	
Mass	PWS-100PR1/PWS-100MG1: 14 kg (30 lb 14 oz) PWS-110PR1: 10.2 kg (22 lb 7.8 oz)	
CPU		
Processor	Intel Core i7-3770 (3.4 GHz)	
Memory	8 GBytes, SO-DIMM (DDR3) (x2)	
Drive (m-SATA)	60 GBytes	
Drive (HDD) (PWS-100MG1 only)	2.5-inch, 500 GBytes (x12)	
Expansion bus	PCIe Gen2 8Lane (30 W) (x2)	
Inputs/outputs		
LAN	PWS-100PR1 / 110PR1	RJ-45 (x2) 1000BASE-T, 100BASE-TX
	PWS-100MG1	RJ-45 (x2) 1000BASE-T, 100BASE-TX, SFP+ (x1) 10GBASE-SR/LR (Add-in Card) *1 *2
USB (front panel/rear panel)	Super Speed USB (USB 3.0) Type A (6, 2 on front and 4 on rear) Front: Power delivery support (900 mA/port) Rear: Power delivery support on bottom right port (900 mA), not supported on other three ports	
HDMI	Type A (x1) HDMI Ver. 1.4a, 1920 × 1200 maximum resolution, 60 Hz	
DisplayPort	DisplayPort (x1) DisplayPort Ver. 1.1a, 2560 × 1600 maximum resolution, 60 Hz	
REF IN (PWS-100PR1/110PR1 only)	BNC (x2) SMPTE-318M compliant, HD tri-level sync (0.6 Vp-p/75 Ω/sync load) or SD black burst/composite sync (0.286 Vp-p/75 Ω/sync load)	
SDI 1 to 4 (PWS-100PR1/110PR1 only)	BNC (x8) HD: SMPTE-292M compliant, SD: SMPTE-259M compliant	

*1: Network card connected to the unit (Intel Ethernet Converged Network Adapter X520-DA1)

*2: Available only when an SFP+ module is installed.

Optional Accessories



PWSK-4401
Internal Memory Array (2 TB)



PWSK-4403
USB Control Device



PWSK-4504
SDI Interface Board



PWSK-4505
BPU Share Play Board



PWSK-4506F
Networked Media Interface Board



OTM-10GSR1
SFP+ Transceiver Module



PWS-110PR1
Production Control Station



PWS-110MG1
Media Gateway Station

Optional Software

PWSL-HR45
4K/HD Cut Out Software for PWS-4500

PWSL-HF45
HFR (High-frame-rate) Software for PWS-4500

PWSL-DH45
Avid DNxHD® Codec Option for PWS-4500

PWSL-PH45
Apple ProRes Codec Option for PWS-4500

PWA-MGW1B
Video Transcode Software for PWS-100MG1

PWA-RCT1
Recording Control Software (v1.2) for PWS-4500

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