SONY

PWS-4500

Next-generation 4K/HD live production server with IP technology

NETWORKED LIVE

Overview

Next-generation 4K/HD live production server with IP technology

The PWS-4500 is our highly reliable, versatile live production server, which has XAVC (both 4K and HD), ProRes and Avid DNxHD® recording capabilities, flexible I/O configurations and HFR recording capability.
In addition, it adds IP interfaces, file sharing function (Share Play), and redundant power supply. The system can be configured flexibly, using various optional accessories, allowing it to be used as a highly cost-effective 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 your needs.

* For more details on the JT-NM Tested program in March 2020 and test results, please go to https://jt-nm.org/jt-nm_tested.

Features

4K and Full HD

The PWS-4500 is capable of recoding up to four 4K video signals/eight HD video signals and 16 audio channels. It can simultaneously create and record HD files from a 4K camera and with additional software. A full HD picture can be cut out from up to 3 recorded 4K sources.

HFR Super slo-mo

A great choice for live sports production, the PWS-4500 supports all High Frame Rate standards, from 3x up to the new 8x speed and 4K 2x. So now you can record HFR feeds from our live camera systems, for instantaneous replay in silk-smooth slow motion.

XAVC: The efficient choice

Records 4K HDR or HD content using the ultra-efficient XAVC codec, delivering supreme picture quality with smaller file sizes. In 4K workflows, the server generates a single 4K XAVC MXF file that's easily handled by today's non-linear editing systems. And for extra flexibility in HD production there are Avid DNxHD® and Apple ProRes codec options, too.

Efficient file sharing, smooth workflow

Clips recorded on the PWS-4500 can be shared with up to ten connected servers over a 10 GbE network using the new Share Play feature – with no need to push or pull clips between different servers. For example, a PWS-4500 server operator can directly view other network servers' clips, and playback and output any of these clips from their own local server.

Fast, flexible archiving

Add the PWS-110MG1 Media Gateway to create workflows for archiving files recorded on the PWS-4500 to networked storage, removable media such as USB HDD or Sony's Optical Disc Archive. Three 4K streams can be backed up over a 10GbE network in real time. There's also an option to transcode from and to multiple formats such as XAVC HD MXF, XDCAM MPEG or Avid DNxHD® while archiving and retrieving files.

All ready for IP Live

IP Live meshes smoothly with existing SDI-based production infrastructures, carrying 4K video, audio, reference signals and control data with low latency over a single network cable. Adding

an optional Networked Media Interface board allows the PWS-4500 to integrate seamlessly with today's IP Live production environments, enabling smart new workflow options plus significantly reduced operational costs.

4K/HFR/IP/HDR ready production server

PWS-4500 is the production video server truly supporting 4K, High Frame Rate (HFR) and IP capability. With a unique memory writing technology, your content could be securely recorded by multi-channels. For high picture quality, 4K mode is available and the 4K content can be played out from this server.
For capturing fast-moving objects like in sports events, the HFR capability will satisfy yourself. And, not only the SDI interface but also the IP interface is supported by the server so it can easliy be used in an IP system. And the PWS-4500 supports HDR natively in 4K/HD. It can record data with 10bit and BT2020.
The PWS-4500 is truly a 4K/HFR/IP/HDR ready production server.

Versatile applications by PWS ecosystem

This system is flexible and versatile and with additional software it can enhance the PWS ecosystem.
With the PWS-110PR1, making clips/highlight is available and for recording the PWA-RCT1 can control the recording operations and with the PWS-110MG1, the server can integrate with external storage and 3rd party systems.

Supporting highly efficient XAVC format, Avid DNxHD® and Apple ProRes

The PWS-4500 is capable of recording up to four 4K video signals/eight HD video signals and 16 channels audio (uncompressed, 24-bit, 48KHz) using the very efficient XAVC recording format, which is an open format supported by over 70 leading A/V companies and all major non-linear editing systems. In a 4K workflow, a single XAVC file is created and recorded to the PWS-4500, which is easily handled by non-linear editing systems of the postproduction stage. The PWS-4500 records 4K/HD XAVC

Intra frames between 960Mbps (4K 50p/59.94p) and 100Mbps (1080, 50i/50.94i).
With the PWSL-DH45 option codec, the PWS-4500 also becomes capable of recording the files as Avid DNxHD220x/145/45 to fit into the Avid DNxHD production and postproduction environment. With the PWSL-PH45 option codec installed, the PWS-4500 also supports Apple ProRes 422 and 422 HQ for native recording capability.

Total replay control and highlight editing with PWS-110PR1

With our PWS-110PR1 production control workstation you can make a clip and make a highlight and of course the video effect and audio editing features are supported. The PWS-110PR1 has a simple, intuitive GUI and touch-panel operation is also fully supported. With the 4K/HD cutout operation you can choose specific HD areas from 4K content and add metadata.

Share-play connectivity

Share-play is the PWS original IP technology to control several PWS servers simultaneously.
With this shareplay, one operator can play clips on the network servers and make a highlight without the need to copy the clips onto the network server, enabling a faster operation.
This operation could be available between PWS4500 and BPU4800 so from the PWS system, operators can use the content from our HDC-4800 camera's HFR (HDx16/4Kx8) contents right away.

Media asset management with PWS-110MG1

The PWS-110MG1 Media Gateway Workstation can send the contents of the PWS-4500 to a Sony external storage device or other 3rd systems. ISO-rec operation which can export the contents while recording is available. Simultaneous editing by non-linear system is also available with the PWS-110MG1. Transcoding operation is supported.

Cost effective 4K/HD recording with PWA-RCT1

With the PWA-RCT1 Record Control Software, cost effective and easy-to-use 4K and HD production is within reach. The software can start and stop recording from a PC (Window's 10 or 8) and as well as playing out and it can also transfer contents to external devices.

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
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)

MONITOR	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.

Product contains pre-installed software

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

Related products

PWS-110MG1

Short-depth Media Gateway Workstation

PWS-110PR1

Short-depth Production Control Workstation

PWSK-4403

PWS-4403 Control Panel

PWSK-4508

12G-SDI interface board for PWS-4500

PWSK-4509

SMPTE ST 2110

PWSL-DH45

Avid DNxHD® Option

PWSL-PH45

Apple ProRes Option

PWA-MGW1B

Video Transcode

interface board for PWS-4500 live server

Codec

Codec

Software

PWA-RCT1

Recording Control Software for PWS-4500, HKCU-REC55 and HKCU-REC50

PWAL-RCT50

CCU recording control option for PWA-RCT1

Gallery