SONY

BPU-4500A

4K/HD baseband processor unit for IP network production



Overview

Enabling IP live production for 4K/HD

An ideal partner for the PWS-4500 4K/HD multi-port live server, the BPU-4500A baseband processor routes 4K/HD signals from camera systems such as the HDC-4300, allowing long-distance signal transmission using standard SMPTE fibre cables or a single mode fibre solution.

If IP transmission is required, the BPU-4500A can easily be upgraded with a choice of optional boards according to the desired IP standard. Depending on production requirements, the BPU-4500A can be equipped with Sony's Networked Media Interface by installing an optional SKC-IP45AF Networked Media Interface kit. It can also be made compliant with SMPTE ST 2110 standard by adding the optional SKC-4001 Interface kit.

Two configurable output slots satisfy the needs of any production format, be it HD or 4K/UHD, SDR or HDR (S-LOG3 and HLG OETF), ITU-709R or BT2020 colour space.

The BPU-4500A can handle 12G-SDI signals as standard, allowing easy integration of 4K/UHD signals into an existing SDI infrastructure without any additional hardware costs. It can also connect to an HDCU-2000 Series or HDCU-3100 Series Camera Control Unit to form a 4K multi-camera system, supplying power to the camera and transferring various signals (intercom, tally, prompter, audio, etc).

The BPU-4500A generates 4K and HD signals at a similar colour matrix to match to the current Sony HD camera system. Working with the HDCU-2000/2500 Camera Control Units permits the same system operation as the current HDC camera system, including Genlock, Return Video signal, Tally, Intercom and Sony RCPs/MSUs, which provides a future-proofed migration path for customers.

A slo-mo output is available for 4K/UHD signals or HD-HFR signals (up to 8x speed in HD: 480p frames/sec).

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

Features

Advanced baseband processor unit with IP interfaces

The BPU-4500A is equipped with the IP interfaces as standard (three outputs with individual redundant outputs), enabling IP live production for 4K/HD in combination with the PWS-4500 4K/HD XAVC server. The processor can handle broadcast quality HD and 4K video, audio, synchronisation signals and control data across the IP network, which increases operational efficiency. While IP signals are output, SDI signals can be output simultaneously from the BPU-4500A for seamless integration with existing SDI infrastructures.

Choice of IP standards

Depending on production requirements, the baseband processor can be fitted with a choice of optional output cards to support IP production using either NMI (Network Media Interface) or SMPTE ST 2110.

4K fibre transmission up to 2,000m as standard, with extension possible up to 5,000m
The 4K Live system works across standard SMPTE fibre cables for distances up to 2,000m. By using the single mode fibre solution – which consists of HDCE-100 extension adaptor for the camera, HKCU-SM100 extension adaptor for the camera control unit and a single mode fibre cable – a maximum distance of 5,000m between a camera and the BPU-4500A is achieved.

High Frame Rate signal processing to a maximum 4K 100/120p, HD 400/480p (Optional software: SZC-4002)
The camera allows High Frame Rate (HFR) capturing up to 100/120 frames per second in 4K resolution (3840 x 2160). Signals are processed in the BPU-4500A and passed to the PWS-4500 4K/HD server to replay them as super slow-motion.

HD cut out function with optional software SZC-2001
It is possible to cut out a Full HD image from the 4K picture in real-time, allowing, for example, for the camera to be in a fixed camera position and operator free giving a wide view of the action, an area of which can be selected by the director.

Can operate without HDCU-2000/2500 CCU
The BPU-4500A works without the HDCU-2000/2500 CCU by supplying power to the PMW-F55 and CA-4000 side locally. Alternatively, supplying power to the BPU-4500A through the HDCE-100 is possible. The BPU-4500A has Reference signal and Return signal inputs and supports RCP control.

Specifications

General	
Power requirements	AC 100 V to AC 240 V, 50/60 Hz
Current consumption	2.0 A (max)
Operating temperature	5 °C to 40 °C (41 °F to 104 °F)
Storage temperature	–20 °C to +60 °C (–4 °F to +140 °F)
Mass Approx.	8.8 kg (19 lb 6.4 oz)

Input/output connectors	
CAMERA	Optical fiber connector (LEMO 3K.93C connector) (x1)
CCU	Optical fiber connector (LEMO 3K.93C connector) (x1)
REMOTE	8-pin multi-connector (x1)
LAN	8-pin (x1)

Input connectors	
AC IN	100 V to 240 V AC (x1)

Input connectors	
SDI1, SDI2 BNC	(x2), 3G-SDI: SMPTE ST424/425 Level-B, 2.970 Gbps/2.967 Gbps HD-SDI: SMPTE ST292, 0.8 Vp-p, 75 Ω, 1.485 Gbps/1.4835 Gbps
REFERENCE IN	BNC (x1), HD: SMPTE ST274, tri-level sync, 0.6 Vp-p, 75 Ω SD: Black burst (NTSC: 0.286 Vp-p, 75 Ω/ PAL: 0.3 Vp-p, 75 Ω)

Output connectors	
12G/3G/HD SDI OUTPUT (SLOT1)	BNC (x4), 12G-SD: SMPTE ST2082, 0.8 Vp-p, 75Ω, 11.880 Gbps/11.868 Gbps, 6G-SDI: SMPTE ST2081, 0.8 Vp-p, 75Ω, 5.940 Gbps/5.934 Gbps 3G-SDI: SMPTE ST424/425 Level-A/B, 0.8 Vp-p, 75Ω, 2.970 Gbps/2.967 Gbps HD-SDI: SMPTE ST292, 0.8 Vp-p, 75Ω, 1.485 Gbps/1.4835 Gbps 12G-SDI/6G-SDI/3G-SDI/HD-SDI selectable
3G/HD SDI OUTPUT (SLOT2)	BNC (x8), 3G-SDI: SMPTE ST424/425 Level-A, 0.8 Vp-p, 75 Ω, 2.970 Gbps/2.967 Gbps HD-SDI: SMPTE ST292, 0.8 Vp-p, 75 Ω, 1.485 Gbps/1.4835 Gbps 3G-SDI/HD-SDI selectable
3G/HD SDI OUTPUT (SLOT3)	BNC (x2), 3G-SDI: SMPTE ST424/425 Level-A, 0.8 Vp-p, 75 Ω, 2.970 Gbps/2.967 Gbps HD-SDI: SMPTE ST292, 0.8 Vp-p, 75 Ω, 1.485 Gbps/1.4835 Gbps 3G-SDI/HD-SDI selectable
HD SDI OUTPUT (SLOT4)	BNC (x2), HD-SDI: SMPTE ST292, 0.8 Vp-p, 75 Ω, 1.485 Gbps/1.4835 Gbps
REFERENCE OUT	BNC (x1), HD: SMPTE ST274, tri-level sync, 0.6 Vp-p, 75 Ω SD: Composite sync, 0.3 Vp-p, 75 Ω HD SYNC/SD SYNC selectable
NMI-LAN (SLOT1)	SFP+ (x2) 10G BASE-** (using SFP+ transceiver module)
NMI-LAN (SLOT2)	SFP+ (x2) 10G BASE-** (using SFP+ transceiver module)
NMI-LAN (SLOT3/4)	SFP+ (x2) 10G BASE-** (using SFP+ transceiver module)

Supplied accessories	
Supplied accessories	Number plates (1 set), Operation Guide (1), Operation Manual (CD-ROM) (1)

Optional accessories

Optional accessories	United States and Canada: Plug holder B (2-990-242-01) Other areas: Plug holder C (3-613-640-01) United States and Canada: Power cord set (1-551-812-XX) Other areas: Power cord set (1-782-929-XX) CCA-5-3 (3 m) and CCA-5-10 (10 m) connection cables, SFP+ module, Maintenance manual

Related products



PWS-4500

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



HDCU-2000

Full-rack-size Camera Control Unit for HDC Series cameras



HDCU-2500

Half-rack-size Camera Control Unit for HDC Series cameras



PMW-F55LIVE

Super 35mm 4K CMOS sensor compact CineAlta camera records HD/2K/4K on SxS memory plus 16-bit RAW 2K/4K output



HKCU-SM100

CCU extension adaptor



CA-4000

4K fibre transmission camera adaptor



HDCE-100

Single mode fibre adapter for HSC and HDC fibre cameras



SZC-4002 / SZC-4002M / SZC-4002W

HFR Upgrade for F65, F55 and HDC-4300



SZC-4001 / SZC-4001M / SZC-4001W

4K Upgrade for HDC-4300



SZC-2001 / SZC-2001M / SZC-2001W

HD Cut-Out Upgrade for BPU Series products

Gallery





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