Panasonic CONNECT



IT/IP Centric Live Video Processing Platform

AT-KC2000

IT/IP Platform "KAIROS" achieves higher performance by fully utilizing the power and flexibility of its CPU and GPU, balancing total processing load without the configuration constraints of traditional hardware based systems. KAIROS offers unrestricted flexibility of input, output and operation for efficient production of expressive live videos

Key Features

- A variety of inputs and outputs available for use
- Resolution and format independent
- Layered structure for versatile video expression
- Flexibility and scalability
- ST 2022-7 Network Redundancy

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https://latam.connect.panasonic.com/pa/en/products/broadcast-proav/kc2000

General -> Power Requirement	AC IN x2, 100-127 V/200-240 V, 50/60 Hz
General -> Current Consumption	10.0 A / 5.0 A
General -> Operating Temperature	5 to 35 ˚C
General -> Storage Temperature	–20 to 60 ˚C
General -> Operating Humidity	10% to 90%, no condensation
General -> Weight	Approx. 17 kg / 37.47 lb (without accessories & options)
General -> Rack Mount Size	4 RU
General -> Dimensions	W 430 mm x H 176 mm x D 505 mm (16-15/16 x 6-15/16 x 19-7/8 inches) (excluding protrusion)
General -> OS	Linux
General -> Redundant Power Supply	✔
Number of Video I/O -> Agile Input Routing	✔
Number of Video I/O -> Smart Routing *1	✔*2
Number of Video I/O -> ST 2110 -> 1.5G	64 in / 40 out
Number of Video I/O -> ST 2110 -> 3G	32 in / 40 out
Number of Video I/O -> ST 2110 -> 4K	8 in / 10 out
Number of Video I/O -> ST 2022-7 Redundancy	√ No halving of input, halving of output
Number of Video I/O -> SDI -> 1.5G	Max. 32 in / 16 out
Number of Video I/O -> SDI -> 3G	Max. 32 in / 16 out
Number of Video I/O -> SDI -> 4K	Max. 16 in / 8 out
Number of Video I/O -> NDI® High Bandwidth (HD only)	2 in / 2 out, 16 CH audio for each
Number of Video I/O -> SRT/RTSP/RTP/RTMP (HD only)	16 in / 4 out (only input for RTSP)
I/O Terminals -> QSFP (ST 2110, PTP sync)	100G QSFP28 x 2
I/O Terminals -> DisplayPort (for Multiview Output)	DisplayPort 1.4 x 4
I/O Terminals -> LAN	RJ-45 x 2, 1 GbE
I/O Terminals -> SDI IN/OUT	Micro BNC x Max. 48*4
I/O Terminals -> REF IN/OUT	Micro BNC x Max. 8*4
I/O Terminals -> HDMI IN/OUT	HDMI TypeA x Max.16
I/O Terminals -> VGA (for system installation)	Dsub-15 pin
I/O Terminals -> USB (for system installation)	USB3.2 Gen1 Type-Ax4
Video Format -> Input/output -> 4K	2160/60p, 59.94p, 50p, 30p, 29.97p, 25p, 24p, 23.98p
Video Format -> Input/output -> FHD	1080/60p, 59.94p, 50p, 30p, 29.97p, 25p, 24p, 23.98p、60i、59.94i、50i
Video Format -> Input/output -> HD	720 / 60p, 59.94p, 50p, 30p, 29.97p, 25p, 24p, 23.98p
Video Format -> Color Model and Bit Depth *13	YCbCr 4:2:2 - 8/10/12 bit YCbCr 4:4:4 - 8/10/12 bit*11 RGB - 8/10/12 bit*11 RGBA - 8/10/12 bit*11 Key - 8/10/12 bit*11
Audio Format -> ST 2110-30 (AES67)	48 kHz/24 bit
Synchronization -> PTP Sync	QSFP and GbE, both ports supported
Synchronization -> FS (Frame Synchronizer)	All input channels, always ON (without ON/OFF)
Synchronization -> Frame Delay	0 frame to 12 frame, by 1-frame step
Synchronization -> Latency	Min. 1-frame
Multiviewer/Canvas -> Multiviewer Output Format, Display	HD/4K x 4 out, max. 36 PiP for each
Multiviewer/Canvas -> Canvas	Up to 12K (66 M-pixels)

Layer -> Number of Layer, Scene (ME) and Key	No restriction, depend on GPU performance, Visible usage with GPU meter
Player -> Still Store	32 GB storage, up to 4K
Player -> RAM Player (uncompressed) *14	8 CH, 96 GB storage
Player -> Clip Player (compressed)	2 CH, 850 GB storage (share with audio player), AVC-Intra/H.264/DNxHD/ProRes
Player -> Audio Player (compressed)	4 CH, 850 GB storage (share with clip player), WAV/MP3/Ogg/FLAC/AIFF
Tally, External Device Support -> 6-color Independent Tally Indicators	✔
Tally, External Device Support -> NDI® Tally	✔
Tally, External Device Support -> Supported Tally Protocol	✔ TSL 5.0, Compatible with Panasonic PTZ Camera and AK-UC4000 4K Studio Camera.
Tally, External Device Support -> Compatible External Tally Box	✔
Tally, External Device Support -> Connectable Control Panel	Total 16 units (AT-KC10C1G or AT-KC10C2G, each up to 8 units)
Tally, External Device Support -> PTZ Control of Panasonic PTZ Camera	✔
Supported Standards and Protocols -> REST API	✔ Protocol, The command table is available from the PASS KAIROS Website.
Supported Standards and Protocols -> Ross Talk *15	✔ Optional AT-SFE01 is required.
Supported Standards and Protocols -> TSL 5.0	✔
Supported Standards and Protocols -> NMOS *16	✔ Optional AT-SFE03 is required.
Supported Standards and Protocols -> AMP (Advanced Media Protocol)	✔
Supported Standards and Protocols -> ST 2110	ST 2110-10, ST 2110-20, ST 2110-30
Common Features of All Models -> Effect	Luminance Key, Chroma Key, DVE (2D/2.5D), Soft Border, Corner Fix, Color Correction, Crop, Film-look*17 Effect, Glow Effect*17 etc.
Common Features of All Models -> Transition	Multimix, Offset Transition, Transition Effects
Common Features of All Models -> Macro	Scene-Specific Macros, LUA Script Support
Common Features of All Models -> Color Mat	Bicolor Wash Mat, Test Pattern
Common Features of All Models -> Other Functions	Audio Mixer*19, Title Generator, Snapshot, Multiviewer Display (GPU Meter, Audio Level Meter, Clock, etc.), User Management Function
Number of Video I/O -> HDMI -> 1.5G *6	Max.16 in*7 or Max. 16 out*8
Number of Video I/O -> HDMI -> 3G *6	Max.16 in*7 or Max. 16 out*8
Number of Video I/O -> HDMI -> 4K *6	Max.16 in*7 or Max. 16 out*8
Number of Audio I/O -> ST 2110 *9	64 in / 40 out
Video Format -> output -> SD NTSC *10 *11	480 / 59.94i
Video Format -> output -> SD PAL *10 *11	576 / 50i
Video Format -> output -> DCI 2K *10 *11	1080 / 60p, 59.94p, 50p, 30p, 29.97p, 25p, 24p, 23.98p
Video Format -> output -> DCI 4K *10 *11	2160 / 60p, 59.94p, 50p, 30p, 29.97p, 25p, 24p, 23.98p
Video Format -> output -> 16:9 *10 *11	1366 x 768, 1600 x 900 / 60p, 59.94p, 50p, 30p, 29.97p, 25p, 24p, 23.98p
Video Format -> output -> 4:3 *10 *11	640 x 480, 1024 x 768, 1400 x 1050, 1600 x 1200 / 60p, 59.94p, 50p, 30p, 29.97p, 25p, 24p, 23.98p
Video Format -> output -> 16:10 *10 *11	1280 x 800, 1440 x 900, 1680 x 1050, 1920 x 1200, 3840 x 2400 / 60p, 59.94p, 50p, 30p, 29.97p, 25p, 24p, 23.98p
Video Format -> output -> 5:4 *10 *11	1280 x 1024 / 60p, 59.94p, 50p, 30p, 29.97p, 25p, 24p, 23.98p
Supported Standards and Protocols -> SNMP	✔*17
Supported Standards and Protocols -> HTML5 Graphics	✔*18
Video Format -> output -> Resolution-free *12	In addition to the above formats, supports any resolution up to a maximum of 9.8 megapixels (adjustable pixel units: 4 pixels)

Footnote Description	1. When using the Smart Routing function, up to 64 inputs can be set and operated virtually, regardless of video format 2. Requires software version 1.7.1 or later. 3. Please contact your distributor for details on using ST 2110 inputs and outputs on the AT-KC200L1. 4. The optional AT-KC20M1 SDI I/O boards are required. Each board has 8 input terminals, 4 output terminals and REF IN/OUT (max. 8 inputs/4 outputs in FHD/HD). Up to four boards can be installed on the AT-KC2000/200 and up to two boards on the AT-KC2000S1. The numbers of input/output shown here are the maximum numbers that can be loaded. Installation of the optional board is carried out by the dealer. Always consult your dealer for installation. 5. Three boards are preinstalled on the AT-KC200L1. One additional board can be installed. Installation of the optional board is carried out by the dealer. Always consult your dealer for installation. 6. The optional AT-KC20M2 HDMI input boards or AT-KC20M3 HDMI output boards are required. AT-KC20M2 supports 4K@60Hz 4:4:4 12bit on PORT1 and PORT2, and 4K@60Hz 4:2:2 10bit on PORT3 and PORT4. AT-KC20M3 supports 4K@60Hz 4:4:4 12bit on all four ports (PORT1–PORT4). Up to four boards can be installed on the AT-KC2000/200, and up to two boards on the AT-KC2000S1/200L1.The numbers of input/output shown here are the maximum numbers that can be loaded. Installation of the optional board is carried out by the dealer. Always consult your dealer for installation. • The numbers of input shown here are the maximum numbers of AT-KC20M2 that can be loaded. • The numbers of output shown here are the maximum numbers of AT-KC20M3 that can be loaded. • The number of inputs and outputs when both Audio1 and Audio2 are used. • Depend on using resolution, input/ouput numbers are changed. • Supported for ST 2110 input/output with software Ver. 1.8. From software Ver. 2.0 onward, supported for both ST 2110 and HDMI input/output. • From software Ver. 2.0 onward, supported for both ST 2110 and HDMI input/output. However, the number of inputs and outputs may decrease depending on the resolution used. • Depend on using resolution, input/ouput numbers are changed. • Please note that the max capacity of the RAM player reduces as below when SDI I/O boards, HDMI input boards, or HDMI output boards are installed. The maximum capacity is reduced by 2 GB when updating to Ver. 1.8 or later. • RossTalk, Ross and XPression, are trademarks or registered trademarks of Ross Video Limited. • NMOS (Networked Media Open Specifications) is a protocol standardized by AMWA (Advanced Media Workflow Association) for controlling and managing devices via IP networks. • Requires software version 1.7.0 or later. • Requires software version 1.8. • Optional AT-SF005 is required.