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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# AT-KC2000

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

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| **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<br>YCbCr 4:4:4 - 8/10/12 bit*11<br>RGB - 8/10/12 bit*11<br>RGBA - 8/10/12 bit*11<br>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) |

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| **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) |

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| **Footnote Description** | 1. When using the Smart Routing function, up to 64 inputs can be set and operated virtually, regardless of video format<br>2. Requires software version 1.7.1 or later.<br>3. Please contact your distributor for details on using ST 2110 inputs and outputs on the AT-KC200L1.<br>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.<br>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.<br>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).<br><br>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.<br>• The numbers of input shown here are the maximum numbers of AT-KC20M2 that can be loaded.<br>• The numbers of output shown here are the maximum numbers of AT-KC20M3 that can be loaded.<br>• The number of inputs and outputs when both Audio1 and Audio2 are used.<br>• Depend on using resolution, input/ouput numbers are changed.<br>• 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.<br>• 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.<br>• Depend on using resolution, input/ouput numbers are changed.<br>• 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.<br>• RossTalk, Ross and XPression, are trademarks or registered trademarks of Ross Video Limited.<br>• NMOS (Networked Media Open Specifications) is a protocol standardized by AMWA (Advanced Media Workflow Association) for controlling and managing devices via IP networks.<br>• Requires software version 1.7.0 or later.<br>• Requires software version 1.8.<br>• Optional AT-SF005 is required. |