# Panasonic CONNECT

## IT/IP Centric Live Video Processing Platform

# AT-KC200

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

# AT-KC200

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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 ℃ |
| General -> Storage Temperature | –20 to 60 ℃ |
| 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] |
| Number of Video I/O -> ST 2110 -> 1.5G | 64 in / 40 out [*2] |
| Number of Video I/O -> ST 2110 -> 3G | 32 in / 40 out [*2] |
| Number of Video I/O -> ST 2110 -> 4K | 8 in / 10 out [*2] |
| Number of Video I/O -> ST 2022-7 Redundancy | √ No halving of input, halving of output [*2] |
| Number of Video I/O -> SDI -> 1.5G | Max. 32 in / 16 out [*2] [*3] |
| Number of Video I/O -> SDI -> 3G | Max. 32 in / 16 out [*2] [*3] |
| Number of Video I/O -> SDI -> 4K | Max. 16 in / 8 out [*2] [*3] |
| 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) | 8 in / 2 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 [*3] |
| I/O Terminals -> REF IN/OUT | Micro BNC x Max. 8 [*3] |
| I/O Terminals -> HDMI IN/OUT | Use external converters. Please refer to "KAIROS Alliance Partners/ Tested Third Party Products". |
| I/O Terminals -> VGA (for system installation) | Dsub-15 pin |
| I/O Terminals -> USB (for system installation) | USB3.2 Gen1 Type-Ax4 |
| Video Format -> 4K | 2160/60p, 59.94p, 50p, 30p, 29.97p, 25p, 24p, 23.98p |
| Video Format -> FHD | 1080/60p, 59.94p, 50p, 30p, 29.97p, 25p, 24p, 23.98p |
| Video Format -> HD | 1080/59.94i, 50i, 720/60p, 59.94p, 50p |
| Video Format -> Signal Processing | Y/PB/PR, 4:2:2 10 bit |
| 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 8K (32 M-pixels) |
| Layer -> Number of Layer, Scene (ME) and Key | No restriction, depend on GPU performance, Visible usage with GPU meter |
| Player -> Still Store | 7 GB storage, up to 4K |
| Player -> RAM Player (uncompressed) | 8 CH, 32 GB storage [*4] |
| Player -> Clip Player (compressed) | 2 CH, 400 GB storage (share with audio player), AVC-Intra/H.264/DNxHD/ProRes |
| Player -> Audio Player (compressed) | 4 CH, 400 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 | ✔ |

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| **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** [5] | ✔ Optional AT-SFE01 is required. |
| **Supported Standards and Protocols -> TSL 5.0** | ✔ |
| **Supported Standards and Protocols -> NMOS** [6] | ✔ 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 |
| **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 [7], Title Generator, Snapshot, Multiviewer Display (GPU Meter, Audio Level Meter, Clock, etc.), User Management Function [2] |
| **Footnote Description** | NDI® is a registered trademark of Vizrt NDI AB in the United States and other countries. |

1. Requires software version 1.7 or later.
2. Requires software version 1.6 or later.
3. 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.
4. Please note that the max capacity of the RAM player reduces as below when SDI I/O boards are installed. SDI I/O boards Not installed 1 board 2 boards 3 boards 4 boards AT-KC2000 96GB 93GB 90GB 87GB 84GB AT-KC2000S1 86GB 83GB 80GB — — AT-KC200 32GB 31GB 30GB 29GB 28GB AT-KC200L1 — — — 32GB 32GB
5. RossTalk, Ross and XPression, are trademarks or registered trademarks of Ross Video Limited.
6. NMOS (Networked Media Open Specifications) is a protocol standardized by AMWA (Advanced Media Workflow Association) for controlling and managing devices via IP networks.
7. Optional AT-SF005 is required.

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| **Number of Video I/O -> HDMI -> 1.5G** [6] | Max.8 in*7 or Max. 8 out*8 |
| **Number of Video I/O -> HDMI -> 3G** [6] | Max.8 in*7 or Max. 8 out*8 |
| **Number of Video I/O -> HDMI -> 4K** [6] | Max.8 in*7 or Max. 8 out*8 |
| **Number of Audio I/O -> ST 2110** [9] | 64 in / 40 out*3 |
| **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) |