

Panasonic





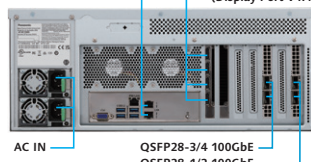
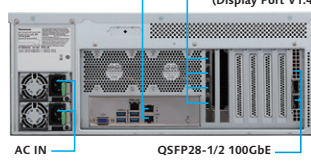
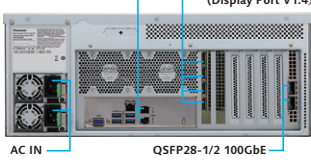
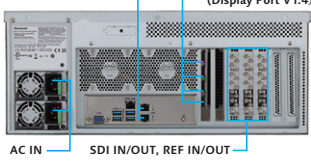
April 2025

IT/IP Platform "KAİROS"

Product Lineup and Specification Comparison Chart



Kairos Core (Main Frame) Lineup and Specification Comparison

Product Name Model Number		Kairos Core 2000 AT-KC2000S1		Kairos Core 2000 AT-KC2000		Kairos Core 200 AT-KC200		Kairos Core 200 AT-KC200L1	
Product Image									
Rear Panel Connectors									
MSRP									
Number of Video I/O Please check the web for details on the number of I/O due to operation.									
Agile Input Routing		√						√ *3	
Smart Routing *1		√						— *3	
ST 2110 *4	1.5G	64 in / 40 out						64 in / 40 out *3	
	3G	64 in / 40 out		32 in / 40 out				32 in / 40 out *3	
	4K	16 in / 10 out		8 in / 10 out				8 in / 10 out *3	
ST 2022-7 Redundancy		√ No halving of both input/output		√ No halving of input, halving of output				√ No halving of input, halving of output *3	
SDI *5*6	1.5G	Max. 16 in / 8 out *5		Max. 32 in / 16 out *5				24 in / 12 out (Max. 32 in / 16 out) *6	
	3G	Max. 16 in / 8 out *5		Max. 32 in / 16 out *5				24 in / 12 out (Max. 32 in / 16 out) *6	
	4K	Max. 8 in / 4 out *5		Max. 16 in / 8 out *5				12 in / 6 out (Max. 16 in / 8 out) *6	
NDI® High Bandwidth (HD only)		2 in / 2 out, 16 CH audio for each							
SRT/RTSP/RTP/RTMP (HD only)		16 in / 4 out (only input for RTSP)				8 in / 2 out (only input for RTSP)			
Number of Audio I/O *7									
ST 2110		64 in / 40 out						64 in / 40 out *3	
ST 2022-7 Redundancy		√ No halving of both input/output						√ No halving of both input/output *3	
I/O Terminals									
QSFP (ST 2110, PTP sync)		100G QSFP28 × 4		100G QSFP28 × 2				Optional support, 100G QSFP28 × 2 *3	
SDI IN/OUT		Micro BNC × Max. 24 *5		Micro BNC × Max. 48 *5				Micro BNC × Max. 36 (Max. 48 with option) *6	
REF IN/OUT		Micro BNC × Max. 4 *5		Micro BNC × Max. 8 *5				Micro BNC × Max. 6 (Max. 8 with option) *6	
Canvas									
Canvas		Up to 12K (66 M-pixels)				Up to 8K (32 M-pixels)			
Player									
Still Store		32 GB storage, up to 4K				7 GB storage, up to 4K			
RAM Player (uncompressed)		8 CH, 86 GB storage *8		8 CH, 96 GB storage *8		8 CH, 32 GB storage *8		8 CH, 32 GB storage	
Clip Player (compressed)		2 CH, 850 GB storage (share with audio player), AVC-Intra/H.264/DNxHD/ProRes				2 CH, 400 GB storage (share with audio player), AVC-Intra/H.264/DNxHD/ProRes			
Audio Player (compressed)		4 CH, 850 GB storage (share with clip player), WAV/MP3/Ogg/FLAC/AIFF				4 CH, 400 GB storage (share with clip player), WAV/MP3/Ogg/FLAC/AIFF			

*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: At AT-KC200, AT-KC200L1 (when ST 2110 is made available), AT-KC2000 and AT-KC2000S1, using 1.5G or 3G, the maximum output per QSFP port is 20 outputs, and the maximum combined output of two QSFP ports is 40 outputs.

When using 4K, the maximum output per QSFP port is 5 outputs, and the maximum combined output of two QSFP ports is 10 outputs.

*5: 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.

*6: 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.

*7: The number of inputs and outputs when both Audio1 and Audio2 are used.

*8: Max. RAM capacity is reduced with SDI I/O boards installed. The maximum capacity is reduced by 2 GB when updating to Ver. 1.8. For details, please check SDI I/O board web page.

Kairos Core (Main Frame) Specifications Common to the Entire Lineup

General	
Power Requirement, Current Consumption	AC IN x 2, 100-127 V/200-240 V, 50/60 Hz, 10.0 A / 5.0 A Redundant Power Supply
Operating/Storage Temperature	5 to 35 °C / -20 to 60 °C
Operating Humidity	10% to 90%, no condensation
Weight, without accessories & options	Approx. 17 kg / 37.47 lb, AT-KC200L1: approx. 17.8 kg / 39.24 lb
Dimensions (W x H x D)	430 mm x 176 mm x 505 mm / 16-15/16" x 6-15/16" x 19-7/8" (4 RU)
OS	Linux

Video/Audio Format		
4K	3840 x 2160	60p, 59.94p, 50p, 30p, 29.97p, 25p, 24p, 23.98p
FHD	1920 x 1080	60p, 59.94p, 50p, 30p, 29.97p, 25p, 24p, 23.98p, 60i, 59.94i, 50i
HD	1280 x 720	60p, 59.94p, 50p, 30p, 29.97p, 25p, 24p, 23.98p
SD NTSC ^{*9}	720 x 480	59.94i
SD PAL ^{*9}	720 x 576	50i
DCI 2K ^{*9}	2048 x 1080	60p, 59.94p, 50p, 30p, 29.97p, 25p, 24p, 23.98p
DCI 4K ^{*9}	4096 x 2160	60p, 59.94p, 50p, 30p, 29.97p, 25p, 24p, 23.98p
16:9 ^{*9}	1366 x 768, 1600 x 900	60p, 59.94p, 50p, 30p, 29.97p, 25p, 24p, 23.98p
4:3 ^{*9}	640 x 480, 1024 x 768, 1400 x 1050, 1600 x 1200	60p, 59.94p, 50p, 30p, 29.97p, 25p, 24p, 23.98p
16:10 ^{*9}	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
5:4 ^{*9}	1280 x 1024	60p, 59.94p, 50p, 30p, 29.97p, 25p, 24p, 23.98p
Color Space and Bit Depth	YCbCr 4:2:2 - 8/10/12 bit YCbCr 4:4:4 - 8/10/12 bit ^{*9} RGB - 8/10/12 bit ^{*9} RGBA - 8/10/12 bit ^{*9} Key - 8/10/12 bit ^{*9}	
Video IP Transmission Format	ST 2110-20	
Audio Format	ST 2110-30(AES67), 48kHz/24bit	

I/O Terminals	
DisplayPort	DisplayPort 1.4 x 4, for Multiview Output External converters are required for video output.
LAN	RJ-45 x 2, 1 GbE
HDMI IN/OUT	Use external converters. Please refer to "KAIROS Alliance Partners/Tested Third Party Products".
VGA (for system installation)	Dsub-15 pin
USB (for system installation)	USB 3.2 Gen1 Type-A x 4

Synchronization	
PTP Sync	QSFP and GbE, both ports supported ^{*10}
FS (Frame Synchronizer)	All input channels, always ON (without ON/OFF)
Frame Delay	0 frame to 12 frame, by 1-frame step
Latency	Min. 1-frame

Tally, External Device Support, Supported Standards and Protocols	
Tally	6-color Independent Tally Indicators, NDI® Tally, Compatible External Tally Box
Supported Tally Protocol	TSL 5.0, Compatible with Panasonic PTZ Camera and AK-UC4000 4K Studio Camera.
Connectable Control Panel	Total 16 units (AT-KC10C1 or AT-KC10C2, each up to 8 units), Up to two Kairos Core units can be operated from one control panel ^{*11}
PTZ Control	Panasonic PTZ Camera
Supported Standards and Protocols	REST API, Protocol and command tables is available from the PASS KAIROS Website. Ross Talk ^{*12} , Optional AT-SFE01 is required. TSL 5.0 NMOS ^{*10*13} , Optional AT-SFE03 is required. AMP (Advanced Media Protocol) SNMP ^{*14} ST 2110 ^{*10} (ST 2110-10, ST 2110-20, ST 2110-30) HTML5 Graphics ^{*11}

*This is only a partial list. For details and supported KAIROS versions, please refer to our website "KAIROS Alliance Partners/Tested Third Party Products".

Functions	
Multiviewer	HD/4K x 4 out, max. 36 PiP for each Display: GPU Meter, Audio Level Meter, Clock, Vectorscope, Waveforms, etc.
Number of Layer	No restriction, depend on GPU performance, Visible usage with GPU meter
Scene (ME)	No restriction, depend on GPU performance, Visible usage with GPU meter
Key	No restriction, depend on GPU performance, Visible usage with GPU meter
Effect	Luminance Key, Chroma Key, DVE (2D/2.5D), Soft Border, Corner Fix, Color Correction, Crop, Film-look Effect ^{*14} , Glow Effect ^{*14} etc.
Transition	Multimix, Offset Transition, Transition Effects
Macro	Scene-Specific Macros, LUA Script Support
Color Mat	Bicolor Wash Mat, Test Pattern
Other Functions	Audio Mixer ^{*15} , Title Generator, Snapshot, User Management Function

*Functions listed here are only a part of the features. For details, please check our website.

*9: Requires software version 1.8. Supported only with IP input/output. Depend on using resolution, input/ouput numbers are changed.

*10: Please contact your distributor for details on using ST 2110 inputs and outputs on the AT-KC200L1.

*11: Requires software version 1.8.

*12: RossTalk, Ross and XPression, are trademarks or registered trademarks of Ross Video Limited.

*13: NMOS (Networked Media Open Specifications) is a protocol standardized by AMWA (Advanced Media Workflow Association) for controlling and managing devices via IP networks.

*14: Requires software version 1.7.0 or later.

*15: Optional AT-SF005 is required.

• NDI® is a registered trademark of Vizrt NDI AB in the United States and other countries.

KAIROS System Equipment

Kairos Control (Control Panel)



AT-KC10C1 Kairos Control (Control Panel)
24XPT style, standard type control panel. Can be connected to up to two Kairos Core units with Ver. 1.8.

- Power Requirement: DC 12V,* XLR 4 pin x 2, Redundant Power Supply •Current Consumption: 8.0 A •Dimensions: 1140 mm x 94 mm x 420 mm (44-7/8" x 3-45/64" x 16-17/32"), W x H x D, excluding protrusion •Weight: Approx. 15.4 kg (33.95 lb)
- Terminals: LAN (RJ-45 x 1, 1 GbE), USB 2.0 (type A) x 2 (1 on Rear Panel, 1 on Control Panel)



AT-KC10C2 Kairos Control (Control Panel)
12XPT style, compact type control panel. Can be connected to up to two Kairos Core units with Ver. 1.8.

- Power Requirement: DC 12V,* XLR 4 pin x 2, Redundant Power Supply •Current Consumption: 4.0 A •Dimensions: 600 mm x 90 mm x 420 mm (23-5/8" x 3-35/64" x 16-17/32"), W x H x D, excluding protrusion •Weight: Approx. 8.5 kg (18.74 lb)
- Terminals: LAN (RJ-45 x 1, 1 GbE), USB 2.0 (type A) x 1

* AC adapter not included. Please check recommended products.

KAIROS Option

Optional Hardware

AT-KC20M1 SDI I/O Board
Enables SDI (micro BNC) input/output. Each board has 8 inputs, 4 outputs, and REF input/output. 1 to 4 boards can be installed on a single Kairos Core.

- Installation on the main frame is carried out by the dealer. Always consult your dealer for installation.

* When installed, max. capacity of the RAM player is reduced. For details, please check our website.



SKAARHOJ's Panasonic Special Model

PAN-MKO-V2B-BU	Master Key One *1
PAN-MK48-V1B-BU	Master Key 48 *1
PAN-WB-V2B-BU	Wave Board *2
PAN-QSP-V1B-BU	Quick Shot Pro *2
PAN-QS-V1B-BU	Quick Shot *2

*1: Requires version 1.7 or later. Operation-verified in Oct. 2024

*2: Requires version 1.8. Operation-verified in Jan. 2025

• SKAARHOJ's Panasonic Special Models are not products handled by Panasonic Connect Co. Panasonic Connect does not guarantee the specifications, etc. Please contact SKAARHOJ <<https://www.skaarhoj.com/>> or SKAARHOJ's resellers <<https://www.skaarhoj.com/discover/reseller-list>> for more information about the product. Please contact your area's Panasonic Sales Companies for purchase.

Kairos Creator (GUI Software)



AT-SFC10 Kairos Creator (GUI Software)
Intuitive GUI for easy configuration of inputs/outputs, scenes, layers, etc.

- OS: Windows 10/11, macOS Ventura/Sonoma/Sequoia

Kairos Emulator

Free software that allows production and training with Kairos Creator in offline environments such as outside the studio or at home.

- OS: Windows10/11
- * Requires version 1.7.0 or later.
- * Some functions can't use on Kairos Emulator.

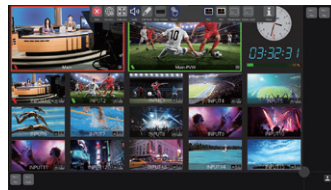


Kairos Creator Subset Software

Kairos Media, Kairos Painter, Kairos Audio Mixer*
Free of charge for Kairos Creator users.

- OS: Windows10/11
- * The AT-SF005 Audio Mixer Option is required for use.

Optional Software



AT-SFTC10 Touch Control Panel Software
Intuitive operation by touching the multi-viewer screen.

- OS: Windows10/11
- * Requires version 1.5 or later.

AT-SFCM10 Kairos Core Manager • OS: Windows10/11

AT-SF005 Audio Mixer Option

AT-SFE01 RossTalk Option

AT-SFE03 NMOS Option For use on AT-KC200L1, please contact your distributor.

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KAIROS; Platform for Innovative Live Video Production

Flexible Input/Output

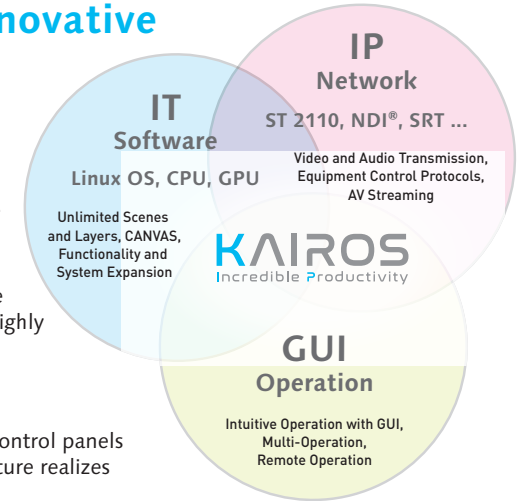
Support for extensive baseband and IP packet signals, video formats, and inputs and outputs.

Unlimited Expression

KAIROS's unlimited scenes and layers combine with CANVAS's unrestricted aspect ratios for highly flexible video production.

Advanced Operation

IP connection enables operation via multiple control panels as well as remote operation. Software architecture realizes high system scalability.



Three technologies that make up KAIROS

KAIROS Alliance Partners

KAIROS leverages ever-expanding IT ecosystems for function expansion via new software and linkage with external devices. To further accelerate such linkage, Panasonic collaborates with diverse IT companies, video equipment manufacturers and suppliers.

KAIROS
Alliance Partners

Update



See website for latest list of KAIROS Alliance Partners and certified devices.

KAIROS Case Studies

See website for many other case studies.



Streamlining sports production with KAIROS

GlobeStream Media & LA Tech

(Rental & Staging)
Country: U.S.A.

Installation: July 2024



IP-based production provides scalability for music festivals

CPL & Camper Calling2024

(Rental & Staging)
Country: UK

Installation: August 2024



More expressive live streaming of e-sports competitions

PLAYBRAIN Inc.

(E-sports management)
Country: Japan

Installation: March 2024



Panasonic Entertainment & Communication Co., Ltd.

1-10-12 Yagumo-higashi-machi, Moriguchi City, Osaka 570-0021, Japan

Specifications are subject to change without notice.

SP-C-KCCOMPEN24



For more information, please visit Panasonic web site
<https://pro-av.panasonic.net/en/gr/>