

Panasonic CONNECT

Jan. 2024

IT/IP Platform "KAIROS" Product Lineup and Specification Comparison Chart

KAIROS

Incredible Productivity





Kairos Core (Main Frame) Lineup and Specifications

Product Name Model Number	Kairos Core 2000 AT-KC2000S1	Kairos Core 2000 AT-KC2000	Kairos Core 200 AT-KC200	Kairos Core 1000 AT-KC1000	Kairos Core 100 AT-KC100
Product Image					
Rear Panel Connectors					
MSRP					
General					
Power Requirement	AC IN x2, 100-127 V/200-240 V, 50/60 Hz			AC IN x2, 100-127 V/200-240 V, 50/60 Hz	
Current Consumption	10.0 A / 5.0 A			12.0 A / 9.0 A	8.0 A / 4.0 A
Operating/Storage Temperature	5 to 35 °C / -20 to 60 °C			5 to 35 °C / -20 to 60 °C	
Operating Humidity	10% to 90%, no condensation			10% to 90%, no condensation	
Weight, without accessories & options	Approx. 17 kg / 37.47 lb			Approx. 17.4 kg / 38.30 lb	Approx. 10.6 kg / 23.36 lb
Rack Mount Size	4 RU			2 RU	1 RU
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"			438 mm x 88 mm x 620 mm 17-1/4" x 3-15/32" x 24-13/32"	438 mm x 43.5 mm x 620 mm 17-1/4" x 1-23/32" x 24-7/16"
OS	Linux			Linux	
Redundant Power Supply	✓			✓	
Number of Video I/O					
Agile Input Routing Support	✓			✓	
ST 2110	1.5G	64 in / 40 out**1		64 in / 40 out	24 (48) in / 12 (32) out**2
	3G	32 in / 40 out**1		32 in / 20 out	24 (32) in / 12 (16) out**2
	4K	8 in / 10 out**1		8 in / 5 out	6 (8) in / 3 (4) out**2**3
ST 2022-7 Redundancy	✓ No halving of both input/output**1		✓ No halving of input**1, halving of output	✓ Both in/out halved	—
SDI**4**5	1.5G	Max. 16 in / 8 out**1**4	Max. 32 in / 16 out**1**4	32 in / 32 out**5	
	3G	Max. 16 in / 8 out**1**4	Max. 32 in / 16 out**1**4	32 in / 32 out**5	
	4K	Max. 8 in / 4 out**1**4	Max. 16 in / 8 out**1**4	8 in / 8 out**5	
NDI**6 (HD only)	2 in / 2 out, 16 CH audio for each			2 in / 2 out, 16 CH audio for each	
SRT/RTSP/RTMP (HD only)	16 in / 4 out (only input for RTSP)		8 in / 2 out (only input for RTSP)	8 in / 2 out (only input for RTSP)	6 in / 2 out (only input for RTSP)
I/O Terminals					
QSF (ST 2110, PTP sync)	100G QSFP28 x 4		100G QSFP28 x 2		100G QSFP28 x 2
DisplayPort (for Multiview Output)	DisplayPort 1.4 x 4			DisplayPort 1.4 x 2	
LAN	RJ-45 x 2, 1 GbE			RJ-45 x 2, 1 GbE	
SDI**4**5	Micro BNC x Max. 24**1**4		Micro BNC x Max. 48**1**4		Gateway Port x 8**5
HDMI	Use external converters. Please refer to "KAIROS Alliance Partners/Tested Third Party Products".				
DisplayPort	—			Use external converters. Please refer to "KAIROS Alliance Partners/Tested Third Party Products".	
VGA (for system installation)	Dsub-15 pin			Dsub-15 pin	
USB (for system installation)	USB3.2 Gen1 Type-A x 4			USB3.0 Type-A x 2	USB3.0 Type-A x 2, USB2.0 Type-A x 2
Video Format (same for all models)					
4K**3	2160/60p, 59.94p, 50p, 30p, 29.97p, 25p, 24p, 23.98p				
FHD	1080/60p, 59.94p, 50p, 30p, 29.97p, 25p, 24p, 23.98p				
HD	1080/59.94i, 50i, 720/60p, 59.94p, 50p				
Signal Processing	Y/PB/PR, 4:2:2 10 bit				
ST 2110-20	✓				
Audio Format (same for all models)					
ST 2110-30 (AES67)	48 kHz/24 bit				
Synchronization (same for all models)					
PTP Sync	QSFP and GbE, both ports supported				
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				
Multiviewer/Canvas					
Multiviewer Output Format, Display	HD/4K x 4 out, max. 36 PiP for each			HD/4K x 2 out, max. 36 PiP for each	HD/4K x 2 out, max. 36 PiP for each
Canvas	Up to 12K (66 M-pixels)			Up to 8K (32 M-pixels)	Option**7 Up to 8K (32 M-pixels)
Layer (same for all models)					
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		7 GB storage, up to 4K	12 GB storage, up to 4K	750 MB storage, up to FHD**3
RAM Player	8 CH, 96 GB storage, Uncompressed		8 CH, 32 GB storage, Uncompressed	8 CH, 64 GB storage, Uncompressed	8 CH, 24 GB storage, Uncompressed**3
Clip Player (Share capacity with audio player)	2 CH, 850 GB storage, compressed AVC-Intra/H.264/DN×HD/ProRes		2 CH, 400 GB storage, compressed AVC-Intra/H.264/DN×HD/ProRes	2 CH, 180 GB storage, compressed AVC-Intra/H.264/DN×HD/ProRes	2 CH, 70 GB storage, compressed**3 AVC-Intra/H.264/DN×HD/ProRes
Audio Player (Share capacity with clip player)	4 CH, 850 GB storage, compressed WAV/MP3/Ogg/FLAC/AIFF		4 CH, 400 GB storage, compressed WAV/MP3/Ogg/FLAC/AIFF	4 CH, 180 GB storage, compressed WAV/MP3/Ogg/FLAC/AIFF	4 CH, 70 GB storage, compressed WAV/MP3/Ogg/FLAC/AIFF
Tally, External Device Support (common to all models) *This is only a partial list. For details and supported KAIROS versions, please refer to our website "KAIROS Alliance Partners/Tested Third Party Products".					
6-color Independent Tally Indicators	✓				
NDI® Tally	✓				
Supported Tally Protocol	✓ TSL 5.0, Compatible with Panasonic PTZ Camera and AK-UC4000 4K Studio Camera.				
Compatible External Tally Box	✓				
Connectable Control Panel	Total 16 units (AT-KC10C1G or AT-KC10C2G, each up to 8 units)				
PTZ Control of Panasonic PTZ Camera	✓				
Supported Standards and Protocols (common to all models) *This is only a partial list. For details and supported KAIROS versions, please refer to our website "KAIROS Alliance Partners/Tested Third Party Products".					
REST API	✓ Protocol, The command table is available from the PASS KAIROS Website.				
Ross Talk**8	✓ Optional AT-SFE01 is required.				
TSL 5.0	✓				
NMOS**9	✓ Optional AT-SFE03 is required.				
AMP (Advanced Media Protocol)	✓				
ST 2110	ST 2110-10, ST 2110-20, ST 2110-30				
Common Features of All Models *Functions listed here are only a part of the features. For details, please check our website.					
Effect	Luminance Key, Chroma Key, DVE (2D/2.5D), Soft Border, Corner Fix, Color Correction, Crop				
Transition	Multimix, Offset Transition, Transition Effects				
Macro	Scene-Specific Macros, LUA Script Support				
Color Mat	Bicolor Wash Mat, Test Pattern				
Other Functions	Audio Mixer**10, Title Generator, Snapshot, Multiviewer Display (GPU Meter, Audio Level Meter, Clock, etc.), User Management Function**1				

*1: Requires software version 1.6 or later. *2: AT-KC100 input/output numbers in () are when the optional AT-SF002 is added. *3: The optional AT-SF001 is required to use 4K video on the AT-KC100. *4: The optional AT-KC20M1 SDI I/O boards are required. The numbers of input/output shown here are the maximum numbers that can be loaded. *5: Deltacast FLEX modules are required. For details, please refer to our website "KAIROS Alliance Partners". *6: NDI® is a new protocol developed by NewTek, Inc. that supports IP video production workflow. NDI® is a registered trademark of NewTek, Inc. in the United States and other countries. In this instance, NDI® is used to indicate low latency with high bandwidth NDI®. *7: The CANVAS function of AT-KC100 requires the optional AT-SF003. Some functions may not be available. *8: RossTalk, Ross and XPression, are trademarks or registered trademarks of Ross Video Limited. *9: NMOS (Networked Media Open Specifications) is a protocol standardized by AMWA (Advanced Media Workflow Association) for controlling and managing devices via IP networks. *10: Optional AT-SF005 is required.

Kairos Control (Control Panel) Lineup and Specifications

Product Name Model Number	Kairos Control (Control Panel) AT-KC10C1	Kairos Control (Control Panel) AT-KC10C2
Product Image		
MSRP		
General		
Power Requirement*	DC 12V, XLR 4 pin x 2	DC 12V, XLR 4 pin x 2
Current Consumption	8.0 A	4.0 A
Redundant Power Supply	√	√
Dimensions (W x H x D, excluding protrusion)	1140 mm x 94 mm x 420 mm 44-7/8" x 3-45/64" x 16-17/32"	600 mm x 90 mm x 420 mm 23-5/8" x 3-35/64" x 16-17/32"
Operating Temperature	0 to 40 °C	0 to 40 °C
Operating Humidity	10% to 90%, no condensation	10% to 90%, no condensation
Weight	Approx. 15.4 kg / 33.95 lb	Approx. 8.5 kg / 18.74 lb
Rear Panel Terminals		
LAN	RJ-45 x 1, 1 GbE	RJ-45 x 1, 1 GbE
USB	USB2.0 type A x 1	USB2.0 type A x 1
Control Panel Terminal		
USB	USB2.0 type A x 1	—

*AC adapter not included. Please check recommended products.

KAIROS; Platform for Innovative Live Video Production

Flexible Input/Output

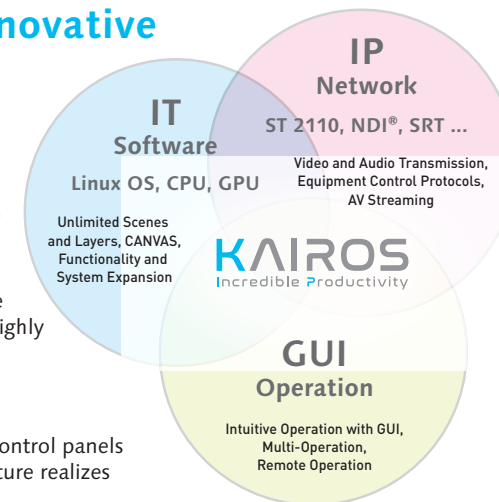
Support for extensive baseband and IP packet signals, video formats, and inputs and outputs.

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.



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

GUI Software and Various Options with Kairos Core

Model Number	Product Name	MSRP	AT-KC2000 AT-KC2000S1	AT-KC200	AT-KC1000	AT-KC100
AT-SFC10 OS: Windows 10, 11 macOS Monterey, Ventura, Sonoma	Kairos Creator		√	√	√	√
	Kairos Media		√	√	√	√
	Kairos Painter		√	√	√	√
	Kairos Audio Mixer		√*1	√*1	√*1	√*1
AT-SFTC10 OS: Windows 10, 11	Touch Control Panel Software		√	√	√	√
AT-SFCM10 *2 OS: Windows 10, 11	Kairos Core Manager		√*3	√*3	√*3	√*3
AT-SF001	4K option		include	include	include	√
AT-SF002	I/O Option		include	include	include	√
AT-SF003	Canvas Option		include	include	include	√
AT-SF005	Audio Mixer Option		√	√	√	√
AT-SFE01	RossTalk*4 Option		√	√	√	√
AT-SFE03	NMOS*5 Option		√	√	√	√
AT-KC20M1	SDI I/O Board*6		√*7	√*7	—	—

*1: Requires AT-SF005 *2: Scheduled to be released in FY2023 4Q. *3: Requires software version upgrade. *4: RossTalk, Ross and XPression, are trademarks or registered trademarks of Ross Video Limited. *5: NMOS (Networked Media Open Specifications) is a protocol standardized by AMWA (Advanced Media Workflow Association) for controlling and managing devices via IP networks. *6: Up to 8 inputs/4 outputs (in HD/FHD) per board. *7: Requires software version 1.6 or later. Up to two cards can be attached to the AT-KC2000S1 and up to four cards to the AT-KC2000/KC200.

KAIROS Case Studies

See website for many other case studies.



KAIROS helps realize unprecedented ballpark

Es Con Field Hokkaido
(Staging & Event & HOW)
Country: Japan
Installation: March 2023



KAIROS delivers next-level concert experiences

GGGLUE
(Staging & Event & HOW)
Country: U.S.A.
Installation: April 2022



RTL2 Television uses KAIROS to enhance remote production

RTL2
(Broadcast Studio)
Country: Germany
Installation: Summer 2021



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

Specifications are subject to change without notice.

SP-KCCOMPWEB1 202410Z

Printed in Japan



Factories of Panasonic Connect Co., Ltd. have received ISO14001:2015-the Environmental Management System certification. (Except for 3rd party's peripherals.)