Panasonic

KAIROS Live Production Platform
Product Lineup and Specification Comparison Chart

KAIROS
Incredible Productivity

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 ℃	0 to 40 ℃
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 × 1, 1 GbE	RJ-45 × 1, 1 GbE
USB	USB2.0 type A × 1	USB2.0 type A × 1
Control Panel Terminal		
USB	USB2.0 type A × 1	—

*AC adapter not included. Please check recommended products.

GUI Software and Various Options with Kairos Core

Model Number/Product Name	MSRP	AT-KC2000S1	AT-KC2000	AT-KC200	AT-KC200L1
AT-SFC10 Kairos Creator OS: Windows10/11, macOS Monterey, Ventura, Sonoma *¹		√	√	√	√
Kairos Creator subset software (Kairos Media, Kairos Painter, Kairos Audio Mixer*²) OS: Windows10/11		√	√	√	√
AT-SFTC10 Touch Control Panel Software OS: Windows10/11		√	√	√	√
AT-SFCM10 Kairos Core Manager OS: Windows10/11		√	√	√	√
AT-SF005 Audio Mixer Option		√	√	√	√
AT-SFE01 RossTalk*³ Option		√	√	√	√
AT-SFE03 NMOS*⁴ Option		√	√	√	future support
AT-KC20M1 SDI I/O Board *⁵ *⁶		√ max. 2 boards	√ max. 4 boards		√ 1 board

· AT-SF001G/SF002G/SF003G functions are standard for AT-KC2000/KC2000S1/KC200/KC200L1.

*1: Kairos Creator subset software is only compatible with Windows 10/11.
*2: The AT-SF005 Audio Mixer Option is required for use.
*3: RossTalk, Ross and XPression, are trademarks or registered trademarks of Ross Video Limited.
*4: NMOS (Networked Media Open Specifications) is a protocol standardized by AMWA (Advanced Media Workflow Association) for controlling and managing devices via IP networks.

*5: Each board has 8 input terminals, 4 output terminals and REF IN/OUT (max. 8 inputs/4 outputs in FHD/HD). Installation of the optional board is carried out by the dealer. Always consult your dealer for installation.
*6: When installed, max. capacity of the RAM player is reduced. For details, please check our website.

KAIROS; Platform for Innovative Live Video Production
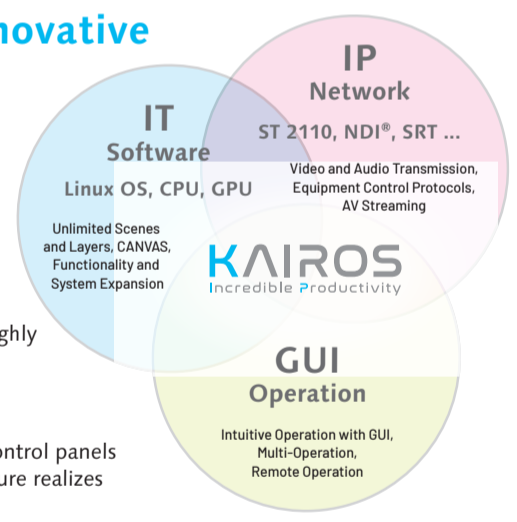
Flexible Input/Output
Support for extensive baseband and IP packet signals, video formats, and inputs and outputs.

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.

IT Software — Linux OS, CPU, GPU
Unlimited Scenes and Layers, CANVAS, Functionality and System Expansion

IP Network — ST 2110, NDI®, SRT ...
Video and Audio Transmission, Equipment Control Protocols, AV Streaming

KAIROS Incredible Productivity

GUI Operation
Intuitive Operation with GUI, Multi-Operation, Remote Operation

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

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

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

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 200 / AT-KC200L1
Product Image				
Rear Panel Connectors				
MSRP				
General				
Power Requirement	AC IN ×2, 100-127 V/200-240 V, 50/60 Hz			
Current Consumption	10.0 A / 5.0 A			
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			Approx. 17.8 kg / 39.24 lb
Rack Mount Size	4 RU			
Dimensions (W x H x D)	430 mm × 176 mm × 505 mm / 16-15/16" x 6-15/16" x 19-7/8"			
OS	Linux			
Redundant Power Supply	√			
Number of Video I/O				
Agile Input Routing	√			√ *3
Smart Routing	√ *1			√ *1*3
ST 2110 — 1.5G	64 in / 40 out *2			64 in / 40 out *3
ST 2110 — 3G	64 in / 40 out *2	32 in / 40 out *2		32 in / 40 out *3
ST 2110 — 4K	16 in / 10 out *2	8 in / 10 out *2		8 in / 10 out *3
ST 2022-7 Redundancy	√ No halving of both input/output *2	√ No halving of input, halving of output *2		√ No halving of input, halving of output *3
SDI *4*5 — 1.5G	Max. 16 in / 8 out *2*4	Max. 32 in / 16 out *2*4		24 in / 12 out (Max. 32 in / 16 out) *5
SDI *4*5 — 3G	Max. 16 in / 8 out *2*4	Max. 32 in / 16 out *2*4		24 in / 12 out (Max. 32 in / 16 out) *5
SDI *4*5 — 4K	Max. 8 in / 4 out *2*4	Max. 16 in / 8 out *2*4		12 in / 6 out (Max. 16 in / 8 out) *5
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)	
Connectors				
QSFP (ST 2110, PTP sync)	100G QSFP28 × 4	100G QSFP28 × 2		Optional support, 100G QSFP28 × 2 *3
DisplayPort (for Multiview Output)	DisplayPort 1.4 × 4			
LAN	RJ-45 × 2, 1 GbE			
SDI IN/OUT	Micro BNC × Max. 24 *2*4	Micro BNC × Max. 48 *2*4		Micro BNC × Max. 36 (Max. 48 with option) *5
REF IN/OUT	Micro BNC × Max. 4 *2*4	Micro BNC × Max. 8 *2*4		Micro BNC × Max. 6 (Max. 8 with option) *5
HDMI IN/OUT	Use external converters. Please refer to "KAIROS Alliance Partners/Tested Third Party Products".			
Displayport	—			
VGA (for system installation)	Dsub-15 pin			
USB (for system installation)	USB3.2 Gen1 Type-A×4			
Video Format (same for all models)				
4K	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 (QSFP is a future option for AT-KC200L1.)			
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 × 4 out, max. 36 PiP for each			
Canvas	Up to 12K (66 M-pixels)		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	
RAM Player (uncompressed)	8 CH, 86 GB storage *6	8 CH, 96 GB storage *6	8 CH, 32 GB storage *6	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	
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*7	√ Optional AT-SFE01 is required.			
TSL 5.0	√			
NMOS*8	√ Optional AT-SFE03 is required. *3			
AMP (Advanced Media Protocol)	√			
ST 2110	ST 2110-10, ST 2110-20, ST 2110-30 *3			
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 *9, Title Generator, Snapshot, Multiviewer Display (GPU Meter, Audio Level Meter, Clock, etc.), User Management Function *2			

*1: Requires software version 1.7 or later.
*2: Requires software version 1.6 or later.
*3: Optional equipment is required for ST 2110 in/out of the AT-KC200L1, future support.
*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: The AT-KC200L1 is pre-installed with three boards and only one additional board can be installed. Installation of the optional board is carried out by the dealer. Always consult your dealer for installation.
*6: Max. RAM capacity is reduced with SDI I/O boards installed. For details, please check SDI I/O board web page.
*7: RossTalk, Ross and XPression, are trademarks or registered trademarks of Ross Video Limited.
*8: NMOS (Networked Media Open Specifications) is a protocol standardized by AMWA (Advanced Media Workflow Association) for controlling and managing devices via IP networks.
*9: Optional AT-SF005 is required. • NDI® is a registered trademark of Vizrt NDI AB in the United States and other countries.