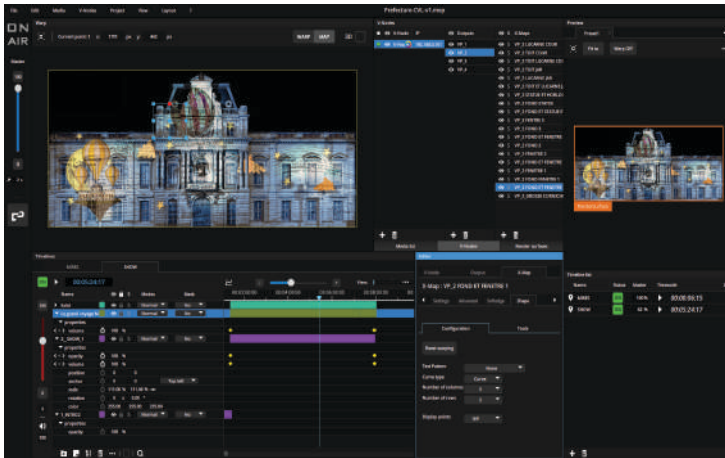# Modulo Kinetic with ruggedized chassis

The high-end fully-integrated media server platform

Modulo Kinetic is the ultimate video solution tailored for the most challenging projects.

Reliable across the complete workflow, Modulo Kinetic enables 3D study, simulation, show creation, encoding, playback and control,... all of it through **one straightforward platform** with intuitive user interface.

Designed and manufactured to mix pre-calculated and real-time generative content, Modulo Kinetic paves the way for unprecedented **interactive experiences with no code needed**.

Fully scalable, the platform relies on **Modulo Kinetic Designer**, a powerful user interface with a dedicated workstation, connected to one or several **Modulo Kinetic V-Node media servers.**
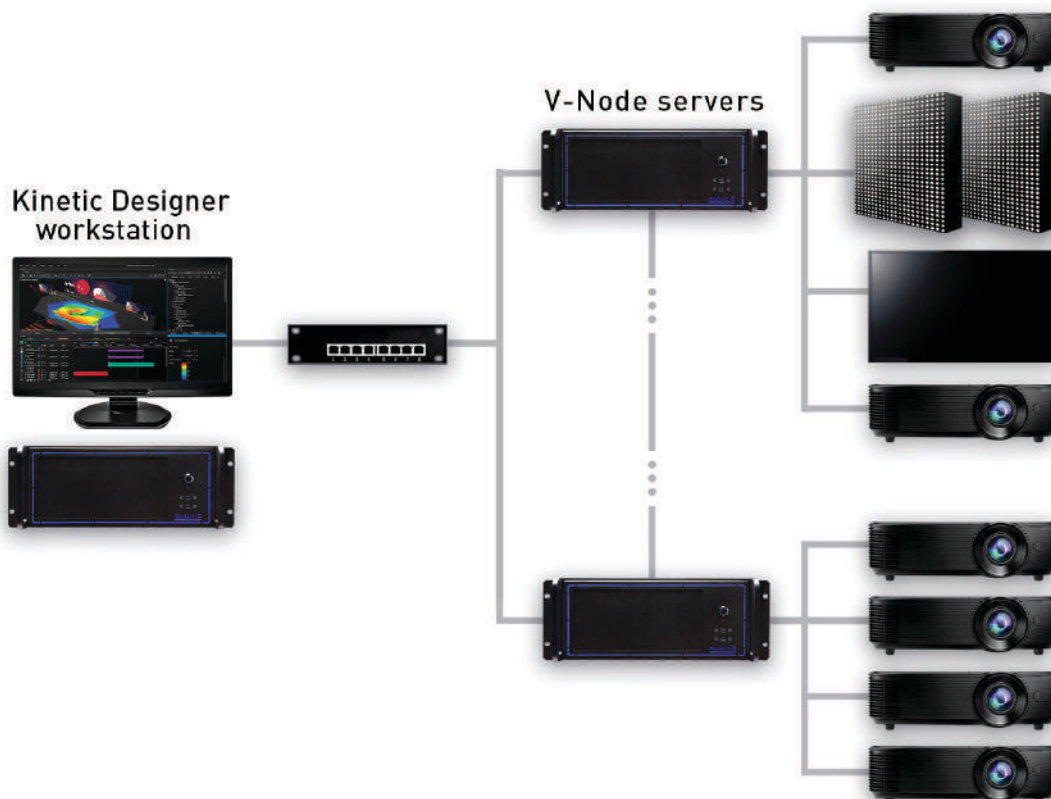
Modulo Kinetic Designer

REF: RKI-DES

A powerful user interface with dedicated workstation

The Modulo Kinetic Designer is the cornerstone of your workflow. It comes with a dedicated workstation and powerful software. It can be used offline for show study, simulation, and pre-encoding. In its ruggedized enclosure version, Modulo Kinetic Designer can endure the roughest conditions. Its reinforced suspended chassis and professional connectivity ensure utmost reliability.

Versions

Reference		
RKI-DES	2TB PCIE NVMe SSD	250GB system SSD

Options

Reference			
TC-PCIE-R	Time code reader card - Pcie	TC-USB-R	Time code reader card - USB
TC-PCIE-RW	Time code reader generator card - Pcie	KM-SOFT	KineMotion tracking add-on software

Modulo Kinetic V-Node

REF: RKI-VNO-1, RKI-VNO-2, RKI-VNO-4, RKI-VNO-6, RKI-VNO-2x4K, RKI-VNO-3x4K, RKI-VNO-4x4K

Versatile media servers

One or several Modulo Kinetic V-Node servers can be connected to your Kinetic Designer. When connected to the V-Node, Kinetic Designer will automatically distribute the media content to the V-Node servers on the network. In its ruggedized enclosure version, Modulo Kinetic V-Node can endure the roughest conditions. Its reinforced suspended chassis and professional connectivity ensure utmost reliability.

Versions

Reference	Physical outputs	Outputs	Storage Data
RKI-VNO-1	4 x DP 1.4	1 output up to WQXGA[1]	2TB PCIE NVMe SSD
RKI-VNO-2	4 x DP 1.4	2 outputs up to WQXGA[1]	2TB PCIE NVMe SSD
RKI-VNO-4	4 x DP 1.4	4 outputs up to WQXGA[1] or 1 output up to 4K[2]	2TB PCIE NVMe SSD
RKI-VNO-6	6 x DP 1.4	6 outputs up to WQXGA[1] or 1 output up to 4K[2]	2TB PCIE NVMe SSD
RKI-VNO-2x4K	6 x DP 1.4	6 outputs up to WQXGA[1] or 2 outputs up to 4K[2]	4TB PCIE NVMe SSD
RKI-VNO-3x4K	6 x DP 1.4	6 outputs up to WQXGA[1] or 3 outputs up to 4K[2]	4TB PCIE NVMe SSD
RKI-VNO-4x4K	6 x DP 1.4	6 outputs up to WQXGA[1] or 4 outputs up to 4K[2]	4TB PCIE NVMe SSD

[1] 2560 x1600
[2] 4096x2160

Options

Reference		Reference	
DELTA-2x3G	Live Capture 2 x 3G SDI	MOD-HDMI	Flex module single HDMI 2.0
DELTA-1x12G	Live Capture 1 x 12G SDI + 2 x 3G SDI or 4 x 3G SDI	MOD-DP	Flex module single DP1.2
DELTA-2x12G	Live Capture 2 x 12G SDI + 4 x 3G SDI or 8 x 3G SDI	MOD-SDI4	Flex module 4 x 3G SDI
DELTA-6x12G	Live Capture 6 x 12G SDI or 12 x 3G SDI	TC-PCIE-R	Time code reader card - Pcie
DELTA-2xHDMI	Live Capture 2 x 4K HDMI 2.0	TC-PCIE-RW	Time code reader generator card - Pcie
DELTA-MIXED	Live Capture 1 x 12G SDI + 2 x 3G SDI + 1 x HDMI 2.0 or 4 x 3G SDI + 1 x 4K HDMI 2.0	TC-USB-R	Time code reader card - USB
DELTA-HOST	Flex Host Card		

Related products, software, and tools

Modulo Kinetic Designer 2D: License for offline programming (requires Modulo Pi key)

Modulo Kinetic Designer 2D+3D: Monthly license for offline programming, study, and simulation (requires Modulo Pi key)

Warp Remote: Companion app for flexible multi-projector edge blending, warping, and 3D calibration from PC/Mac

Kinetic Panel: Companion app to host and use your custom user panels on Mac, PC, Android or iOS devices

2D Auto-Calibration: Multi-projector auto-calibration module for planar, curved, and dome surfaces

Modulo Bridge: Compact hardware solution to create a network bridge with Modulo Kinetic

KineMotion: Real-time tracking module for creative & interactive visual experiences

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Hardware specifications (Hardware Revision 2024-1)

Operating System: Windows 11 CBB x64
RAM: From 64GB to 128GB
Storage: 1 x SSD 250GB OS / DATA: Depending on version
Processor: AMD EPYC™
LAN: 2 x RJ45 10GbE etherCON
Audio: 2 x XLR symmetrical audio outputs

USB: Back panel: 4 x USB 3.0
       Front panel: 2 x USB 3.0
Graphics Card: AMD Radeon Pro
Pro Power Neutrik® TRUE 1 Connection
Power Supply: 100-240 VAC / 50-60Hz / 850W
Average power consumption (high load): 450W

Software specifications

Modulo Kinetic Designer
Dedicated application (PC) to control any number of networked Modulo Kinetic V-Node servers
Reliable across the complete workflow, from show design and simulation, to show encoding and control
Smart easy-to-use user interface
Fully reliable solution with an automatic primary/secondary back-up

Timelines
Unlimited number of timelines, unlimited number of layers
High flexibility allowing last-minute changes
Command layers with control cue (Pause/loop/device action...)

Settings per Layer
Animate all parameters with keyframes
Position, scale, rotation, opacity, color, fade in/out
Advanced colorimetry, crop, progressive mask, clip, keyframed animation
Advanced chroma keyer for green screen studio
LUT format .cube support: Color grading, creative filter
Database of 2D GPU effects
Support for interactive shader format
Movie: In/out time, loop mode, speed change with frame blending

3D Engine
Import point cloud, GLTF, FBX or COLLADA 3D scenes
Build advanced projection study & simulation in 3D & VR
Import video-projectors from a csv file
Clone and symmetry tool for video-projectors distribution
Export video-projectors list and specs in pdf
Create client documentation with dimensions, annotations, Lux and pixel density views
Integrated extensive video-projectors database
3D animation editor
Integrated Prefabs (plane, sphere, cube, torus...)
Lighting including shadows
Advanced materials including PBR, MatCap, and Substance by Adobe
Real-time 3D engine with generative content including CPU & GPU particles
Render camera, projector, or mesh instance in a timeline layer with post-process Reflection, Ambient Occlusion (SSAO), Depth of Field (DOF), Glow and advanced Anti-aliasing

Virtual studios and Extended Reality (XR)
Compatible with green screen and LED screen
FreeD protocol support
Stype protocol support
Integrated FreeD calibration file for the Panasonic AW-UE100 and AW-UE150 PTZ cameras

Pose calibration and intrinsic calibration of a fixed camera
Multi-zoom camera calibration (intrinsic, nodal, and pose estimation)
Support of SteamVR tracker
Possibility to add a delay through render surface layer
Overscan function for camera and video-projector

Synchronization
Synchronize any number of Modulo Kinetic VNode with a unified view from the Modulo Kinetic Designer
Synchronization with MTC or LTC timecode (optional)
Genlock/Framelock: Contact us for more information

Outputs tools
Warping grid (keystone or curve), advanced soft edge, mask, test pattern generator, advanced color adjustment
Exclusive X-Map feature for complex video mapping
3D video-projector calibration
LED Pixel mapper (Art-Net)
Multi-user warp remote to optimize calibration phase
Multi-projector auto-calibration system (optional)

Low-latency Live Mixer
Dedicated multi-user remote application (Mac/PC)
Live Preview/Program/Confidence screens
Unlimited number of destinations and mix engines
Preset and Quickset
Mask & keying
Transition effects: Cut, fade, flying,...
Cut & Take buttons
Sources: Workspace, HDMI 2.0, low-latency SDI 3G/12G, NDI
Full support of Stream Deck and Stream Deck XL control pads

Medias
MPEG-2 (4:2:2), H264 (4:2:0)
HAP, HAP alpha, HAP Q, HAP R support
Apple ProRes 10bit support
NotchLC 10bit support
GoPro CineForm 10bit support
Notch Block support
Uncompressed still sequence TGA or 10 bits DPX
QuickTime uncompressed RGB, YUV8 or YUV10bit
Multichannel audio file (wav,aiff)
Still images: png, jpg, tiff
Other media: Text, counter, countdown, clock, web page
Automatic generation of lower resolution proxy in the Modulo Kinetic Designer for a full preview

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Show Control

Create, control, and play automated tasks for a wide number of preloaded external devices including video-projectors, matrix switchers, video processors

The devices' main parameters are available in our extensive library to ensure fast and easy control through Modulo Kinetic Designer

Trigger tasks from specific devices such as Calendar, MIDI, OSC, GPIO, Art-Net, DMX, Stream Deck, WebSocket

Possibility to control Modulo Kinetic Designer with ASCII TCP/IP command with an extensive protocol

Interactivity

Easily control the parameters of your media – including position, rotation, opacity, color,… – using external devices (OSC, Art-Net, MIDI, TCP/IP rotary encoder)

Audio reactive effects using FFT and level from external audio input or virtual channel

Create custom web applications to interact with your Modulo Kinetic projects using WebSocket protocol

Support of touchless sensors including 2D & 3D LiDARs and depth cameras

Nodal programming to compute data, including Javascript block

Graphic nodal programming for effects (Render Graph)

Send beacon position using PosiStageNet protocol (PSN)

KineMotion: Powerful optical tracking module (optional)

User Panel

Easily create different user panels: Drag & drop tasks, add buttons, texts, images, web pages, etc.

User panels are compatible with PC, Mac, iOS, and Android devices

Hardware Control & Monitoring

Set up and monitor your hardware
Force EDIDs using embedded EDID generator
Set up multi-screen configurations
VNC integrated

Environmental specifications

Max altitude: 2 700 m
Operation temperature: 10°C ~ 35°C
Non operation temperature: -40°C ~ 70°C
Non operation humidity: 20% ~ 90% (Non condensing)

Complimentary

powerCON TRUE1 cable connector
EU power cord
1 x active DisplayPort to HDMI adapter per output
Warp Remote: PC/Mac software dedicated to warping
Kinetic Panel: PC/Mac application to host your custom user panels. Also available on iOS and Android

Warranty
2-year return-to-base

Physical specifications

Frame	19-inch rack 4U		
Product	**W**	**H**	**D**
Dimensions without handles	431 mm 16.97"	176,80 mm 6,96"	645 mm 25,39"
Dimensions with handles	482 mm 18,98"	176,80 mm 6,96"	690 mm 27,17"
Weight	~ 29 kg	~ 64 lbs	
Shipping	**W**	**H**	**D**
Dimensions	550 mm 21,65"	310 mm 12,20"	800 mm 31,50"
Weight	~ 31 kg	~ 68 lbs	

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