Datasheet

AVNEX-90K-EN/DN
| 4k 60Hz, Integrated Encoder HDMI 2.0, 4:4:4 With KVM Collaboration





Key features

- "Uncompressed 4K60Hz HDMI 2.0 transmission (4:4:4) for ultra-high-definition displays.
- Seamless switching, windowing, scaling, cross-screen roaming, and superimposed display capability.
- Real-time preview groups: Up to 9 groups, each with 7 windows for simultaneous multi-source monitoring.
- Highly customizable video wall layouts including picture-in-picture and various multi-zone configurations.
- Integrated KVM collaboration for operator efficiency – mouse cross-screen, OSD quick switching, USB passthrough.
- Built-in privacy protection features such as mosaic video blur.
- Advanced embedded management software with B/S architecture, browser-based control, and multi-user access.
- Redundant signal transmission via optical/network and DVI-I output; RS232/485 for external control integration.
- Low-latency operation (as low as 42ms switching, 32ms KVM) and reliable 24x7 operation with high security.
- Voice intercom and transparent USB/audio via KVM for collaborative AV workflows.
- Multi-protocol support: SIP, ONVIF, RTSP, and more for seamless AV/IT integration."

Product Overview

The Macsys AVNEX-90K-EN/DN 4K 60Hz Integrated Encoder and Decoder solution is designed for enterprise-level video wall management, multi-viewer processing, and KVM collaboration over IP networks. Delivering uncompressed 4K60Hz HDMI 2.0 video with 4:4:4 chroma, it ensures seamless integration for operation management, security monitoring, and emergency command centers. This advanced encoder/decoder empowers cloud-based large screen presentations, multi-zone collaboration, and secure signal switching. Unique privacy features, real-time preview groups, seamless splicing, and sophisticated control functions are paired with a powerful B/S embedded management system compatible across browsers. Supporting cross-screen mouse control, OSD fast switching, versatile external control options (RS232/485), and network/optical signal transmission, the Macsys AVNEX-90K-EN/DN stands out as a future-proof solution for mission-critical AV environments. Its seamless switching, customizable layouts, low-latency operation, and robust KVM collaboration take unified production and dispatching to new heights, making it ideal for video conferencing, emergency response, and large command center deployments.

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Technical Specification

Feature	Details
AVNEX-90K-EN Encoder Specifications	
System	Embedded Linux system, quad-core ARM Cortex A55 @1.4GHz
Video Input	1× HDMI 2.0 (up to 3840×2160@60Hz, 4:4:4), HDMI2.0, HDCP2.2
Video Output	1× HDMI 2.0 loop/monitoring output, 1× HDMI output 4K@60
Audio Input	1× stereo line input (left/right), 1× HDMI embedded audio, 1× 3.5mm headset interface
Audio Output	1× stereo output, supports HDMI embedded audio pass-through
Encoding Algorithm	H.265, H.264 (HP/MP/BP profiles)
Encoding Resolution	4K60fps (adaptive source capture, pass-through)
Encoding Channel	1× 4K@60Hz
Frame Rate	5–60fps
Bitrate Range	32kbps–16Mbps
Audio Codec / Sampling / Bitrate	G.711A, G.722.2, AAC-LC, OPUS; 8–48kHz; 8–320kbps; 1-channel encoding
LCD	Front LCD displays IP, CPU, network, running time information
Status Indication	4 Indicator Light for Network, Operation, Encoding, Decoding status
Preview Groups	Up to 9 preview groups, each group supports 7 windows
Privacy Features	Video blur/mosaic, privacy protection
KVM Collaboration	Mouse cross-screen, OSD quick switching, take over/push, USB passthrough, keyboard/mouse KVM
Latency	Encoding/decoding ≤42ms, KVM ≤32ms
External Control Interfaces	1× RS232, 1× RS485, 4× Programmable IO/IR, 1× Relay, 1× IR receiver, USB-B for source control
USB Ports	4 ports (2× USB 3.0, 2× USB 2.0) – keyboard, mouse, USB drives, USB AV devices
Network	1× RJ45 100/1000M PoE support, 1× Gigabit Fiber Ethernet
Supported Protocols	TCP/IP, UDP, RTSP, RTP, ONVIF, SIP, HTTP, RTMP
Device Management	Embedded B/S web browser (IE, Chrome, etc.), C/S client for Windows, iOS, Android
Functions	Mode save/recall, scene save/recall, plan round-robin, shortcut key definition
Signal Transmission	Optical/network backup, Support DVI-I signal output
Power Supply	DC 12V 3A, PoE (Optional)
Full-load Power Consumption	<20W
Operating Temperature	0°C–55°C, temp rise <20°C
Physical Dimensions / Weight	220×140×30mm / <1kg
Certifications	CE, RoHS

Technical Specification

Feature	Details
AVNEX-90K-DN Decoder Specifications	
System	Embedded Linux system, quad-core ARM Cortex A55 @1.4GHz
Video Input	1× LAN, 1× Fiber
Video Output	1× HDMI 2.0 (4K@60, loop-out configurable)
Decoding Algorithm	H.265, H.264 (HP/MP/BP profiles)
Decoding Resolution	4K/1080P/720P/576P/480P/1920×1200, 4K60fps (adaptive support)
Decoding Channels	1× 4K@60Hz or 8× 1080P30
Frame Rate	5–60fps
Bitrate Range	32kbps–16Mbps
Audio Input	1× left/right stereo line input (intercom/mic)
Audio Output	1× stereo out, HDMI embedded audio
Audio Codec	PCM 2.0/5.1/7.1, Dolby TrueHD, Dolby Atmos, DTS-HD Master Audio, DTS:X, G.711A, G.722.2, AAC-LC, OPUS
Audio Sampling Rate	8–48kHz
Audio Bitrate	8–320kbps
Audio Channels	8-channel decoding
Intercom Audio	1× 3.5mm headset interface
LCD	Front LCD displays IP, CPU, network, running time information
Status Indication	4 Indicator Light for Network, Operation, Encoding, Decoding status
Preview Groups	Up to 9 groups, each supporting 7 windows
Window/Video Processing	Seamless switching, windowing, scaling, cross-screen roaming, superimposed display, overlay, scrolling captions
Custom Layouts	Customizable window count/layout modes, picture-in-picture
Privacy Features	Video blur/mosaic, privacy protection
KVM Collaboration	Mouse cross-screen, OSD fast/quick switching, take over/push function, USB passthrough, keyboard/mouse KVM
Latency	Decoding ≤42ms, KVM ≤32ms
Control Interfaces	1× RS232, 1× RS485, 4× Programmable IO/IR, 1× Relay, 1× IR receiver, 1× USB-B for source control
USB Ports	2× USB 3.0, 2× USB 2.0 (keyboard, mouse, USB drives, AV devices)
Network	1× RJ45 Gigabit Ethernet (PoE supported), 1× Fiber Gigabit Ethernet
Network Protocols	TCP/IP, UDP, RTSP, RTP, ONVIF, SIP, HTTP
Device Management	Embedded B/S web browser (IE, Chrome), C/S client for Windows/iOS/Android
Functions	Mode save/recall, scene save/call, layout save/recall, plan round-robin, shortcut key definition

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Technical Specification

Feature	Details
Panel	0.9-inch OLED display, 4 indicator LEDs
Power Supply	DC 12V 3A, PoE (Optional)
Full-load Power Consumption	<20W; dual power (12V DC/3A and PoE)
Operating Temperature	0°C–55°C, temperature rise <20°C
Physical Size	220mm × 140mm × 30mm
Net Weight	<1kg
Certifications	CE, RoHS compliance

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