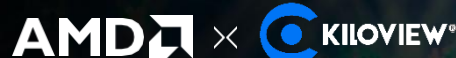


KILOVIEW EXPANDS HIGH-DENSITY, SOFTWARE-DEFINED AV-OVER-IP WORKFLOWS WITH AMD x86 EMBEDDED AND ADAPTIVE COMPUTING TECHNOLOGIES

CASE STUDY



As broadcast and professional AV workflows shift from traditional video infrastructure to IP-based and software-defined production, teams need systems that can support more sources, formats and locations without adding complexity.

With deep expertise in NDI and IP-based video, Kiloview supports a wide range of fixed and mobile production environments using scalable AV-over-IP workflows, from broadcast studios and live events to sports, education, enterprise communications, healthcare, content creation and streaming.

Rather than offering stand-alone devices, Kiloview delivers a complete IP video ecosystem for capture, transmission, routing, media processing, monitoring, recording and centralized management. This approach helps production teams simplify remote production, scale modular rack-based IP media systems and manage unified media hub workflows with greater flexibility.

CHALLENGE

Professional media teams are under pressure to do more with less: manage more cameras, signals, formats and destinations while keeping systems compact, flexible and cost-effective. For Kiloview, that meant finding platforms that could deliver high-performance video processing, professional I/O support and software flexibility in compact embedded designs.

Kiloview's relationship with AMD began when the company selected the AMD Zynq™ UltraScale+™ MPSoC platform for its encoder, decoder and NDI product lines. At the time, Kiloview needed compact, edge-deployed video devices capable of 4K image processing, real-time NDI High Bandwidth encoding and decoding, and simultaneous execution of the NDI software protocol stack within a power-efficient and reliable hardware design.

Before adopting AMD FPGA-based SoC platforms, Kiloview evaluated Arm®-based SoC solutions for software-based NDI High Bandwidth workflows. A pure CPU-based architecture was not efficient enough for Kiloview's requirements. Arm cores alone struggled to consistently deliver real-time 4K performance, and built-in hardware codecs on those SoCs also could not be used for NDI High Bandwidth, limiting their practical value in Kiloview's pipeline.

Kiloview also needed support for professional video interfaces such as 3G-SDI and 12G-SDI, as well as 10-bit video capture and output, which are critical for broadcast-grade applications.

INDUSTRY

Broadcast & Pro AV

AT A GLANCE

- Kiloview provides a complete AV-over-IP ecosystem for capture, transmission, routing, media processing and centralized management across professional video workflows
- AMD adaptive SoCs help power Kiloview's N-series NDI converters, enabling ultra-low-latency video processing and transmission in compact edge devices
- AMD Ryzen™ Embedded 8845HS powers the FXC-A8800 compute card with "Zen 4" CPU cores, AMD RDNA™ 3 integrated graphics and AMD XDNA™ NPU acceleration in a single embedded SoC

CHALLENGES

Kiloview needed to support more cameras, signals, formats and destinations while keeping professional AV-over-IP systems compact, flexible and cost-effective.

SOLUTION

Kiloview uses AMD Zynq™ UltraScale+™ adaptive SoCs and AMD Ryzen embedded processors to power edge video devices and high-density, software-defined media processing inside its RF02 platform

RESULTS

With AMD technology, Kiloview can deliver scalable multi-channel 4K processing, real-time NDI workflows, professional I/O support and x86 software flexibility in a compact modular AV-over-IP system

AMD TECHNOLOGY AT A GLANCE

AMD Zynq™ UltraScale+™ MPSoCs
AMD Ryzen™ Embedded 8845HS processor

SOLUTION

Kiloview selected the AMD FPGA-based Zynq UltraScale+ MPSoC platform for their combination of hardware acceleration, system flexibility, performance, reliability and I/O support. The Zynq SoC architecture allowed Kiloview to use FPGA fabric for real-time 4K NDI High Bandwidth encoding and decoding, while an Arm CPU running Linux® executed the NDI software protocol stack on the same chip. This helped Kiloview deliver high-performance video processing and software flexibility on a single integrated platform.

AMD technologies now play an important role across multiple Kiloview product lines. On the edge-device side, AMD adaptive SoCs power Kiloview's N-series NDI converters, enabling ultra-low-latency video processing and transmission. On the media infrastructure side, AMD Ryzen embedded processors provide the compute foundation for the FXC-A8800 compute card, supporting multi-channel 4K processing, software-based media workflows and future AI-enabled applications.



For the FXC-A8800 compute card, Kiloview selected the AMD Ryzen Embedded 8845HS processor. This

processor combines a "Zen 4" CPU with eight cores and 16 threads, RDNA 3 integrated graphics with AMD Radeon™ 780M and 12 compute units and a dedicated XDNA NPU delivering 16 TOPS. Together, the SoC delivers 39 TOPS of AI compute without requiring a discrete GPU, helping the card fit within two slots of the RF02 modular chassis while staying within an 88-watt power envelope.

The AMD Ryzen Embedded 8845HS also provides hardware-accelerated H.264, H.265, AV1, VP9 and MPEG-2 encode and decode up to 8K at 60 frames per second, aligning with Kiloview's multi-channel 4K broadcast workloads. The x86 platform supports full Windows® and Linux compatibility, enabling customers to run mainstream production software such as vMix and OBS Studio directly on the card.

Long-term availability was another key consideration. As an industrial-grade embedded processor, AMD Ryzen Embedded helps Kiloview provide an up-to-10-year product supply commitment for broadcast customers that require dependable supply and platform stability.

"AMD combines industry-leading FPGA and embedded processing technologies with outstanding technical support, making them a trusted long-term partner for Kiloview," said Jacob Zuo, founder and CTO of Kiloview.

RESULTS

AMD adaptive SoCs helped Kiloview build a complete portfolio of compact N-series NDI conversion products, combining real-time 4K NDI High Bandwidth processing with

the NDI software stack in a single integrated platform. This architecture enabled ultra-low-latency video processing and transmission while supporting the power efficiency, reliability and professional video I/O required for edge-deployed broadcast and Pro AV systems. Kiloview credits the AMD Zynq platform with helping establish its position in the professional AV-over-IP and NDI market.

Building on that success at the edge, Kiloview turned to AMD Ryzen Embedded technology to strengthen the FXC-A8800's processing performance, system density and software-defined AV flexibility.

The AMD platform supports up to six concurrent 4K streams or 17 concurrent 1080p streams for pure decode, along with simultaneous encode and decode of two 4K at 60 fps H.265 streams.

In real-world NDI testing with vMix on Windows 11, one FXC-A8800 card stably decoded five 4K at 60 fps NDI HB channels or 19 1080p at 60 fps NDI HB channels.

At the system level, the RF02 chassis supports up to four FXC-A8800 compute cards with dual internal 10GbE links per card, giving customers a compact way to scale broadcast and AV-over-IP workflows. By running Windows- or Linux-based AV applications directly inside the RF02



system, customers can reduce reliance on external PCs or separate servers while handling video processing, monitoring, recording, media control and third-party production software in a modular 2U platform.

The AMD powered FXC-A8800 also helps Kiloview support changing video standards and customer requirements. Hardware support for H.264, H.265, AV1 and VP9, combined with Windows and Linux compatibility, allows Kiloview and its customers to address new protocols, NDI variants and software-based workflows through software updates rather than hardware redesigns.

Looking ahead, Kiloview is exploring AI-powered video processing, including frame interpolation for slow-motion replay, object detection and tracking, intelligent framing, image enhancement, super-resolution, intelligent color space conversion and AI-assisted video encoding. The company is also developing large language model-based user experience enhancements to simplify configuration, management and troubleshooting.

AMD has also supported Kiloview's development through local engineers, technical specialists, validation resources, documentation, reference designs and engineering teams in Shenzhen and Shanghai.

"The support from the AMD team, from local FAE support and ComTech to AMD engineering teams in Shenzhen and Shanghai, has consistently provided fast, professional and highly effective technical assistance whenever development

challenges arose. Their responsiveness and expertise helped us overcome complex engineering issues and accelerate product development,” said Jacob Zuo, founder and CTO of Kiloview.

ABOUT KILOVIEW

Founded in 2011, Kiloview is a provider of IP-based video transmission solutions, with products across the range of video encoding, decoding, conversion, IP-based video switching, and streaming, including SDI/HDMI (HD or 4K UHD) to IP via H.264/H.265/NDI by Ethernet, WiFi, or 4G-LTE bonding/5G-LTE, etc. Kiloview provided hardware and software solutions that can handle different inputs and outputs, either baseband interfaces or IP streams with different protocols, in the format of standalone units, or rack-mount units, together with functions such as PTZ control, OSD, cropping, recording, and streaming services, making Kiloview the most versatile AV-over-IP solution provider in the world. Learn more [here](#).

ABOUT AMD

For more than 50 years AMD has driven innovation in high-performance computing, graphics, and visualization technologies. Billions of people, leading Fortune 500 businesses, and cutting-edge scientific research institutions around the world rely on AMD technology daily to improve how they live, work and play. AMD employees are focused on building leadership high-performance and adaptive products that push the boundaries of what is possible. For more information about how AMD is enabling today and inspiring tomorrow, visit the AMD (NASDAQ: AMD) website, blog, LinkedIn, and Twitter pages.

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