

Kiloview Offers NDI and NDI|HX Encoding & Decoding Solutions with AMD Devices

AMD Zynq[™] UltraScale+[™] MPSoC Helps Kiloview N60 Support 4K HDMI to NDI[®] Bidirectional Conversion

PARTNER



INDUSTRY

Pro AV / Broadcast

CHALLENGES

Video processing consumes significant computing resources and memory bandwidth. When the video resolution is upgraded from HD to 4K or 8K, the performance requirements increase exponentially.

SOLUTION

The AMD Zynq UltraScale+ MPSoC helps solve the technical, cost, power, and othe challenges of embedded NDI codecs.

RESULTS

The solution enables 4K HDMI to NDI bidirectional transmission with end-to-end ultra-low latency (<80 ms), supports H.264/H.265 video encoding formats up to 10-bit color depth, and fills the industry's need for an NDI & NDI|HX encoding and decoding solution in IP-based video transmission.

AMD TECHNOLOGY AT A GLANCE

AMD Zynq[™] UltraScale+[™] MPSoC

Kiloview is a professional solution provider of IP-based video transmission, with products across the range of video encoding, decoding, conversion, IP-based video switching and streaming, recording, and management. The company's product portfolio supports many different combinations of inputs and outputs, making it a versatile provider of AVover-IP solutions.

Network Device Interface (NDI) AV-over-IP technology has developed rapidly in recent years, enabling compatible video products to communicate, transmit, and receive broadcast-quality video over IP in a low-latency, frame-accurate format.

High-end video streaming media, remote live broadcasting, production, and telemedicine all have high requirements for IP-based video transmission. However, few solutions on the market can fully meet these needs.

Through full IP layout, Kiloview's encoding/decoding solutions enable NDI technology to be used across the entire video transmission and production process. This significantly reduces the cost of video transmission and production and makes the technology accessible to small- and mid-sized companies.

CHALLENGE

Different from traditional video coding and transmission equipment used in the computer room, NDI coding products are being widely used in multi-point video transmission. The devices must be installed in a limited space near the camera and be small in size.

Video processing consumes significant computing resources and requires a lot of memory bandwidth. When the video resolution is upgraded from HD to 4K or 8K, the performance requirements increase exponentially.

In short, users expect, high-definition video quality, low latency, and low power consumption in a small form-factor product.

SOLUTION

Kiloview's N60 is a full-function NDI converter built on the AMD Zynq[™] UltraScale+[™] MPSoC, which helps solve the performance, cost, and power challenges of embedded NDI codecs. It integrates a high-performance FPGA and Arm[®] processor, baseband video IP for SDI interface, as well as a high-speed interconnection bus to complete the video capture, NDI coding, and streaming media transmission of three key links, educing cost and size.

The unique programmable logic (PL) feature of the Zynq device provides a high level of hardware and software reconfiguration and parallel computing capabilities, as well as a higher internal running clock that uses fewer logical resources than competing solutions.

The Zynq UltraScale+ MPSoC also uses its high-processing system memory controller performance and efficient Advanced eXtensible Interface (AXI) bus to share memory resources.

"The AMD Zynq UltraScale+ MPSoC device's high-quality, lowlatency audio and video processing and transmission capabilities allow us to easily respond to flexible customer requirements," said Jacob Zuo, chief technology officer at Kiloview. "Using the AMD MPSoC architecture, the Kiloview N60 can easily meet our customers' codec requirements, from standard definition to 4K Ultra HD."

Zuo added that the support from AMD has been great throughout product design. "Whenever we encounter technical difficulties and need help, we know we can always count on AMD. The support team arranged local engineers to analyze issues from the very beginning, actively deploying hardware verification resources, consulting with technical experts, and moving the project forward according to the plans we made."

RESULT

With AMD technology, the Kiloview N60 :

- Enables 4K HDMI to NDI bidirectional transmission with end-to-end ultra-low latency (<80ms).
- Supports H.264/H.265 video encoding formats up to 10bit color depth.
- Fills the industry's need for an NDI & NDI|HX encoding and decoding solution in IP-based video transmission.

WANT TO LEARN MORE?

About <u>AMD Zynq UltraScale+ MPSoC</u> About 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/SG-LTE, etc.

Kiloview provides 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. Discover more of Kiloview at https://www.kiloview.com/en/.

About AMD

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