



SOLUTION BRIEF

Vanguard by Beamr V.264 and V.265 CODEC SDK – Powered by Artesyn

Performance Highlights

- High performance live and VOD software CODEC
- OpenCL/GPU support for Intel® Core™ i7-5650U Processor with Intel HD Graphics 6000 and Intel® Xeon® E3 processors with Intel® Iris™ Pro graphics P6300
- Multistream support for fast and easy ABR profile preparation
- Advanced on-the-fly encoder controls of resolution, bitrate and dozens of other key parameters
- Advanced Rate Control modes CBR, VBR, Fixed QP

Just like telecommunications and audio before it, video is undergoing an IP revolution. Where previously video signals were transmitted using satellite or terrestrial broadcasting techniques, the adoption and continued advancement of high-speed broadband technologies has allowed video to be packetized and sent over an IP network with limited or no impact to perceived video quality. This, in turn, has led to a change in consumer consumption habits, from scheduled broadcast to video on demand viewing.

This shift in viewer habits has placed increasing demands on service providers responsible for providing Internet services. As video may be played at any time and any location, demand is growing exponentially and service providers now face a two-pronged problem. The first part of the problem is how to minimize the traffic over the network such that quality and network performance are not compromised. The second is how to monetize the take-up of video to pay for the increased infrastructure costs.

Transcoding plays an essential part in the first problem. Efficient transcoding ensures that each video stream takes the minimum system resource or bandwidth, without comprising perceived quality. For example, transcoding ensures that the resolution and frame rate transmitted matches the target device; there is no point in sending very high definition video (and audio) to a small screen mobile device when a lower resolution file could be sent without any perceived loss of quality or viewer experience.

Tradeoffs can be made by the operator when it comes to video file transcoding. For example, seldom watched video files could be transcoded to a target resolution only when needed, as opposed to a more widely viewed video where it may make sense to encode in advance and store multiple copies to avoid constant reprocessing. In this real-time use case, transcoding only as needed will decrease storage requirements, while increasing processing resource requirements.



Artesyn has a long pedigree and expertise in IP connected computer systems, originally developing telecommunications systems with IP backbones. This work led to developing audio CODEC acceleration engines and then from there to video CODEC acceleration. Artesyn expertise in designing systems specifically to maximize IP connectivity underpins all of these solutions. Artesyn now offers a complete portfolio of transcoding solutions.

Beamr also has a long history in video processing technology, encoder and CODEC development; having acquired Vanguard Video, a preferred supplier to leading OTT streaming services, managed service operators and on-line video platforms.

Artesyn and Beamr have collaborated to integrate the Vanguard by Beamr V.265 HEVC and V.264 AVC CODEC SDKs with the Artesyn SharpStreamer™ line of acceleration add-in cards. The combined solution provides flexibility, quality and TCO optimization for virtual video cloud solutions, cloud DVR, or even desktops and workstations used for encoding and delivery of high-quality real-time video.

Vanguard by Beamr V.265 SDK
The World's Highest Performing HVEC CODEC SDK

V.265 is a widely deployed HEVC software based encoder and decoder SDK that is in use by the largest streaming service and managed network providers in the world to deliver up to 4K UHD HDR10 and Dolby Vision compatible content.

As one of the most commercially deployed HEVC CODECs today, V.265 SDK provides OTT service providers, MSOs, satellite operators, telcos and OEMs an encoding framework that includes versatile libraries and sophisticated APIs. V.265 SDK employs industry leading content adaptive technology to ensure the highest quality at the lowest possible bitrate is always achieved. V.265 SDK can be easily integrated into custom workflows and configured to suit demanding offline file-based and real-time workflows.

Artesyn SharpStreamer™ Products

SharpStreamer™ PCIE-7207	SharpStreamer™ Pro PCIE-7210	SharpStreamer™ Mini PCIE-7205	MaxCore™ Platform
High density video transcoding accelerator card for H.264 applications	High performance HEVC video transcoding accelerator card	Video accelerator card for medium density transcoding and encoding applications	Enables highest density, economical and application-focused systems



Vanguard by Beamr V.264 SDK
Industry Leading Broadcast Quality H.264 CODEC SDK

Vanguard by Beamr V.264 is a fully compliant H.264 software based encoder and decoder SDK that includes profile support for AVC, MVC, and SVC.

With over 10 years of CODEC maturity and hundreds of real-world deployments, V.264 SDK offers top-tier OTT service providers, MSOs, satellite operators, telcos and OEMs a robust, cross-platform solution to deliver the highest video quality possible with the flexibility of a fully supported commercial product. V.264 SDK can be integrated with almost any custom workflow and is designed for high scale, robust file VOD and real-time operating environments.

Legacy Support

In addition to providing cutting-edge transcode capability, Beamr's solutions support legacy APIs which reference Beamr's heritage and allow customers to seamlessly port existing solutions to current generation hardware and software architectures with a committed roadmap.

Performance

As voice and video streaming becomes more pervasive and customer demand for media consumption continues to rise, Artesyn's PCI Express server accelerators enable existing servers to scale up to higher densities, and support higher-density traffic at a fraction of the cost and server footprint, ultimately reducing CapEx and OpEx costs.

About Beamr

Beamr is a global technology leader in H.264 and HEVC video CODEC, encoding and optimization solutions. The company was founded in 2009 by a team of leading image science experts and is backed by Marker LLC, Disruptive and Alphabet (Google) Chairman Eric Schmidt's fund, Innovation Endeavors. Beamr has more than 80 employees located in Palo Alto, Tel Aviv and St. Petersburg, Russia.

Hollywood studios, MSOs and some of the world's largest OTT distributors use Beamr technology to ensure video quality, reduce delivery costs, improve streaming user experience, and lower TCO of cDVR, VOD and TVE systems. Beamr's software is available across a broad range of platforms including cloud and on-premises installations, and the company has received 20 granted patents with another 30 pending for the industry's first fully content adaptive perceptual optimization process that reduces the bitrate of video streams and files up to 50% without compromising quality.

www.beamr.com



About Artesyn Embedded Technologies

Artesyn Embedded Technologies is a global leader in the design and manufacture of highly reliable embedded computing solutions for a wide range of industries including communications, military, aerospace and industrial automation. Building on the acquired heritage of industry leaders such as Motorola Computer Group and Force Computers, Artesyn is a recognized leading provider of advanced network computing solutions ranging from application-ready platforms, single board computers, enclosures, blades and modules to enabling software and professional services. For more than 40 years, customers have trusted Artesyn to help them accelerate time-to-market, reduce risk and shift development efforts to the deployment of new, value-add features and services that build market share. Artesyn has over 20,000 employees worldwide across ten engineering centers of excellence, four world-class manufacturing facilities, and global sales and support offices.

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