



SOLUTION BRIEF

High Density 4K 10-bit HDR HEVC Encoding Solution

Performance Highlights

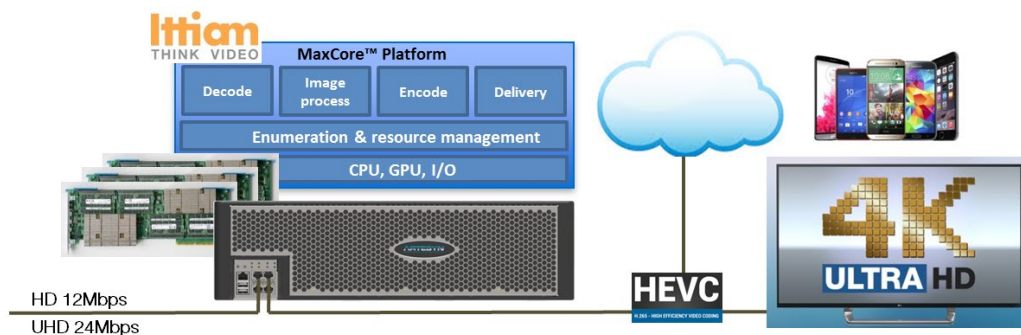
- Encode up to 28 4Kp30 10-bit HDR live video streams per 3U MaxCore™ platform
- High performance software encoder that leverages Intel® Iris™ Pro graphics P580 GPU
- Unique distributed encoding architecture for live 4Kp60 encoding at very high quality
- Codec plug-ins and workflows for Live, VOD and JIT transcoding
- Multi-format support with H264, H265, VP9 and delivery in TS, HLS, DASH, MP4
- Advanced encoding algorithms and configurability for optimal quality and performance

UHD is now a standard feature of almost all TVs and many high-end second screen devices. However, the cost of encoding UHD HDR combined with the high delivery bandwidth that is needed inhibits the mass availability of HDR and UHD content for OTT and broadcast TV. The Ittiam Intel® Iris™ Pro GPU accelerated HEVC software encoder running on the Artesyn *SharpStreamer™ Pro PCIE-7210* card overcomes these obstacles by enabling content distributors to implement cost-effective architectures for transcoding, storage, and delivery of UHD HDR video content.

The industry leading *Ittiam HEVC software encoder* combined with Artesyn's virtualizable, open-standard *MaxCore™ platform* that features x86 Intel® E3 processors with the Intel Iris Pro P580 GPU, can achieve 4Kp30 real-time (live) video encoding with 10-bit HDR on a single E3-1585L processor – density never before possible in today's video encoding workflows. Ittiam's unique distributed

encoding architecture also enables scaling to higher frame rates or quality by combining the power of multiple Intel E3 processors to encode a single live stream. Ittiam's codec SDK and FFmpeg plugin integrate easily with any video processing environment or architecture, creating a flexible and cost-effective, high-density software encoding solution.

Ittiam solutions operating on the Artesyn SharpStreamer Pro PCIE-7210 card is an ideal solution for edge encoding and JIT architectures where a single format file is distributed across the network and transcoded to individual profiles just prior to last mile delivery. This has the distinct advantage of reducing network egress and storage, while enabling the optimum profile to be created for each device. Whether the device supports full UHD with 10-bit HDR, UHD only, or just HD, user experience will be guaranteed.



Ittiam HEVC Encoding Solutions

Ittiam offers premier *software video encoding solutions* for HEVC. When paired with the Artesyn platform, the results are the highest density per RU in the industry, which translates into a highly affordable broadcast quality solution for live streaming of UHD 4K HDR content. Additional applications include user-generated video encoding where high processing density and operational cost efficiency are required.

Best-in-class Performance

- Efficient hybrid CPU+GPU encoder
- 4Kp30 on single Intel® Xeon® E3 processor
- Distributed 4Kp60 real time encoding
- Highly efficient ABR encoding

Broadcast Quality

- Configurable quality-speed presets
- Advanced algorithms for highest quality
- 2-pass encoding for offline content preparation (VOD)
- Multiple rate control modes

Multi-format Support

- H.265/HEVC, H.264/AVC, VP9
- TS, DASH, HLS, MP4

Integration-ready workflows

- Robust media transcoding workflows
- Efficient user, resource and job management
- Cloud Ingest, Egress and CDN ready
- RESTful APIs, JSON workflow interfaces
- Codec plug-ins for third-party workflows



The Artesyn MaxCore™ Platform

Artesyn brings the densest and highest performance platforms in the industry. Built on the open PCIe standard, the *MaxCore™ platform* enables flexibility, cost-effective scaling, and multi-party sourcing.

For video applications, the MaxCore platform offers the highest density of Intel® and third-party GPUs in the industry, making it ideal for video encode, transcode and delivery applications. Scalability is achieved through add-in cards or by combining additional chassis.

The high bandwidth and x86 core density create a cloud at the Edge, optimizing cost per stream and network bandwidth. The use of low power processors results in significant OpEx savings for operators when compared to pure software encoding on standard RMS.

- Highest Intel® Xeon® core density – Up to 360 Intel Xeon cores in 3U chassis
- Highest flexibility – 15 slots for dual Intel Xeon D, dual Intel E3, I/O or any PCIe cards
- Up to 400Gbps I/O shared by all processors
- Switching and load balancing in platform
- Open Stack integration available
- Edge 3U and Cloud CG OpenRack 19 & Hyperscale form factors available



MaxCore™ Platform



SharpStreamer™ Pro PCIe-7210 PCI Express Card

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