



COMPUTATIONAL STORAGE AND VIDEO PROCESSING SOLUTIONS

PRODUCT BRIEF

T432 Massif™

HIGH DENSITY VIDEO TRANSCODER

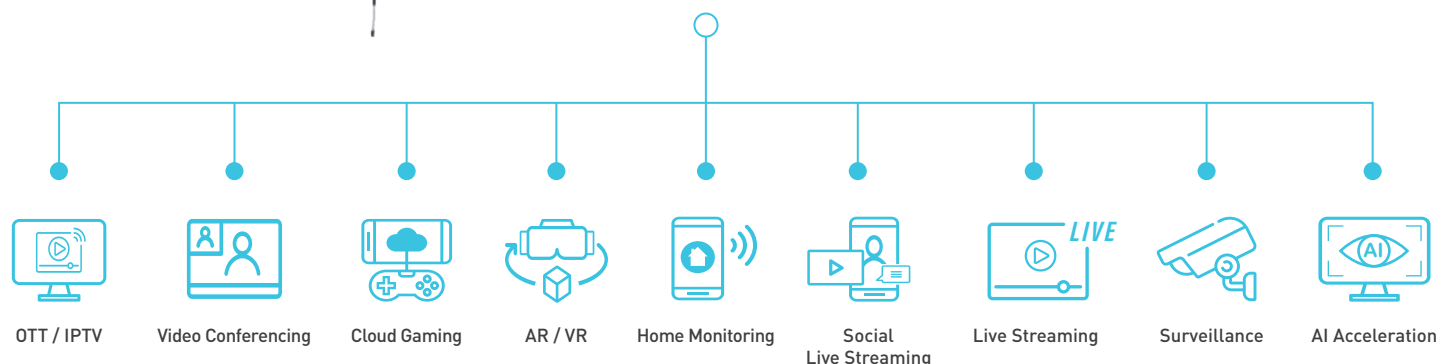
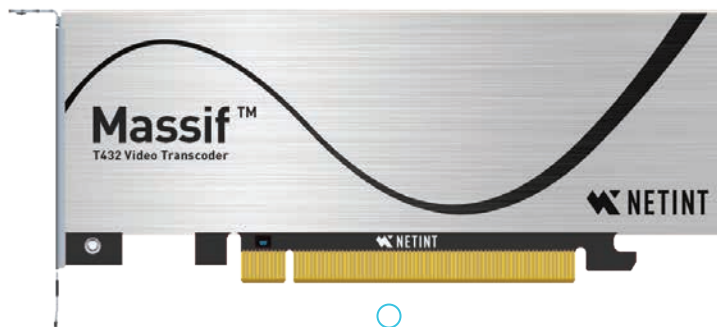
T432 Massif™

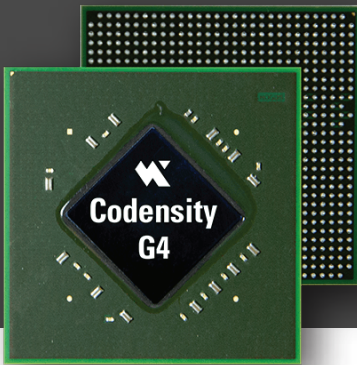
High Density Video Transcoder

The **T432 Massif** is an ultra-high density, low power video transcoder that leverages the inherent efficiencies of computational storage technology to create the highest density video encoding solution in a flexible add-in card form factor, that enables content distributors to rapidly adapt to changing business requirements.

Streaming video has become the dominant type of internet traffic and existing software-based encoding infrastructures are straining to meet this new demand. Content distributors now need a scalable solution to increase their encoding capacity.

NETINT's T432 Massif is a next generation ultra-dense video processing solution supporting HDR and 4K encoding that complements NETINT's family of storage and transcoding solutions. Massif is targeted at applications requiring low-latency, ultra-dense video encoding, decoding and transcoding including: **OTT/IPTV, Video Conferencing, Cloud Gaming, AR/VR, Home Monitoring, Social Live Streaming, Live Streaming, Surveillance, AI acceleration.**

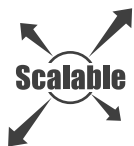




Codensity™ G4

The heart of the T432 Massif is NETINT's in-house designed **Codensity G4 ASIC** (application specific integrated circuit). The advanced functionality of the Codensity G4 ASIC enables the T432 Massif to provide the industry's highest density encoding solutions.

FEATURES and BENEFITS



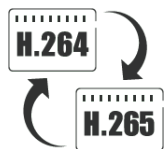
Scalable PCIe Add-in-card Form Factor

Simple upgrade for existing server infrastructures



Reduces bandwidth up to 50%

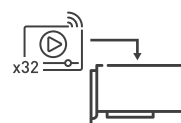
Lowering costs and increasing network capacity



H.264/H.265 Real-Time Encoding

Can be used in a wide variety of encoding applications:

- OTT
- IPTV
- E-Learning
- Surveillance
- AR,VR
- mobile Cloud Gaming



Ultra-High Density

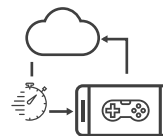
Up to 32x 1080p30 streams per T432.

- Smaller server footprint
- Ideal for Edge encoding



Compatible with FFMPEG

Simplified System Integration



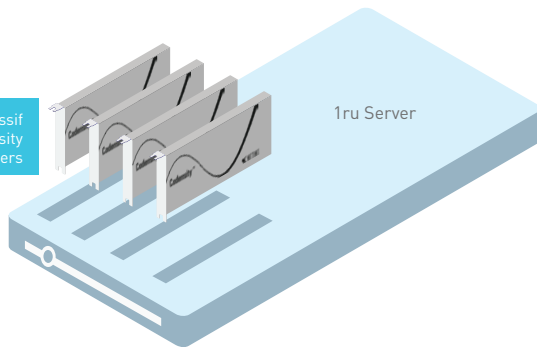
Ultra-Low Latency Performance

Optimized for the Cloud

DESIGNED FOR THE CLOUD

High Density, Low Power Transcoding

T432 Massif is packaged as a PCIe add-in-card that can be installed into any server and is equipped with an ultra-high capacity H.264 AVC/H.265 HEVC encoder and decoder. A single Massif module can process up to 4 x 4Kp60 or 128 individual transcoding streams in real time. In addition, each Massif module consumes only 27 watts of power. The high-density transcoding architecture and ultra-low power consumption of Massif enables content distributors to effectively address the growing demand for internet based streaming video while minimizing overall operational expenditures.



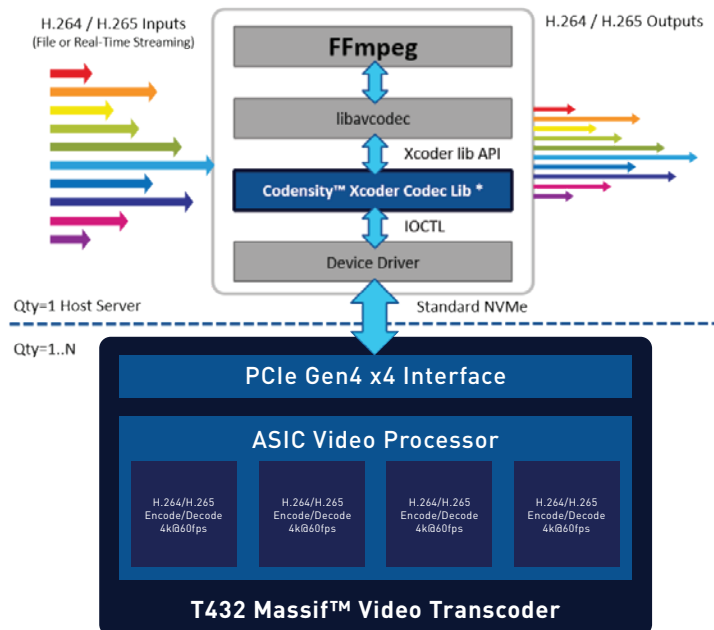
A mid-range Intel® multi-core 1U server populated with 4x Massifs can support 128x simultaneous 1080p @ 30 fps real-time transcoding sessions.

High Power Efficiency

Each T432 Massif PCIe add in card consumes only 27W of power at full load. A server fully populated with Massifs is able to offer ultra dense encoding capabilities in a space efficient form factor.

Software Integration with FFmpeg Library Support

Many video processing and transcoding applications developers are familiar with FFmpeg, an open-source software library with a vast suite of video processing functions. The T432 Massif solution includes a highly-efficient FFmpeg compatible SDK, requiring operators to simply apply a FFmpeg/libavcodec patch to complete the integration. The libavcodec patch on the host server functions between the T432 Massif PCIe interface and the FFmpeg software layer, allowing existing video transcoding applications already using FFmpeg to achieve quick and significant performance and capacity upgrades with T432 Massif Transcoders.



TECHNICAL SPECIFICATIONS

T432 Massif - AIC

Form Factor	AIC (HHHL)
Interface	PCI-Express 3.0x16 bifurcated to 4x4
Protocol	NVMe
Power Consumption (Typical)	27W
Usage	24/7 Operation
Operation Temperature	0 degrees C to 70 degrees C
RoHS Compliance	Meets requirements of European Union (EU) ROHS Compliance Directives
Product Health Monitoring	Self-Monitoring, Analysis, and Reporting Technology (SMART) commands; Temperature Monitoring and Logging
Hardware Interface	Available PCIe slot

VIDEO ENCODE/DECODE

Profile	H.264 AVC H.265 HEVC	CBP / BP / XP / MP / HiP / HiP10 Main / Main10
Level	H.264 AVC H.265 HEVC	1 to 6.2 1 to 6.2 Main-Tier
Max Resolution		8192 x 5120
Min Resolution		32 x 32
Scan Type		Progressive
Bitrate		64kbit/s to 700Mbit/s
Software Integration		FFmpeg SDK Direct Integration with LibXcoder API
Capacity		Up to 4x 4K @ 60 fps 4x 1080p @ 240 fps

ADVANCED FEATURES

Region of Interest (ROI)	ROI permits the quality of some regions to be improved at the expense of other regions
Closed Captioning	T432 supports EIA CEA-708 closed captions for H.264 and H.265 encode and decode
High Dynamic Range (HDR)	T432 supports HLG, HDR10 and HDR10+ for H.264 and H.265 encode and decode
Low Latency	T432 supports sub-frame latency
IDR Insert	Forced IDR frame inserts at any location
Flexible GOP Structure	8 presets plus customizable GOP structure



NETINT Technologies is an innovator of SoC solutions intersecting computational storage and video processing. Its Codensity portfolio enables cloud data centers, edge computing companies, and content providers to deploy scalable high-performance applications, while minimizing their data storage and video processing costs. NETINT, founded by an experienced team of storage SoC veterans, is a Canadian venture-funded high-tech company with R&D facilities in Vancouver, Toronto and Shanghai, China.

For more information, please visit our official website at: www.netint.ca or contact us by E-mail: info@netint.ca

