

A white security camera is mounted on a textured wall. The camera is angled downwards and to the right. A black cable runs horizontally across the wall, passing behind the camera. The entire image has a blue color overlay.

# Security Surveillance Video Processing

**Smart VPU** | ASIC Video Processing Unit, powered by AI



## A grayscale image of a crowded pedestrian walkway, likely a subway station. The image is annotated with numerous bounding boxes and labels for face and object detection. Blue boxes identify faces, with labels such as FACE465W2, FACE463P2, FACE92H524, and FACE9023907. Red boxes identify objects, with labels such as OBJ9364, OBJ4899, OBJ784, and OBJ6988. The scene is busy with many people walking in various directions, and the background shows architectural elements like stairs and walls.

Need robust infrastructure to increase throughput 10X  
and push more high-quality camera streams to the cloud.

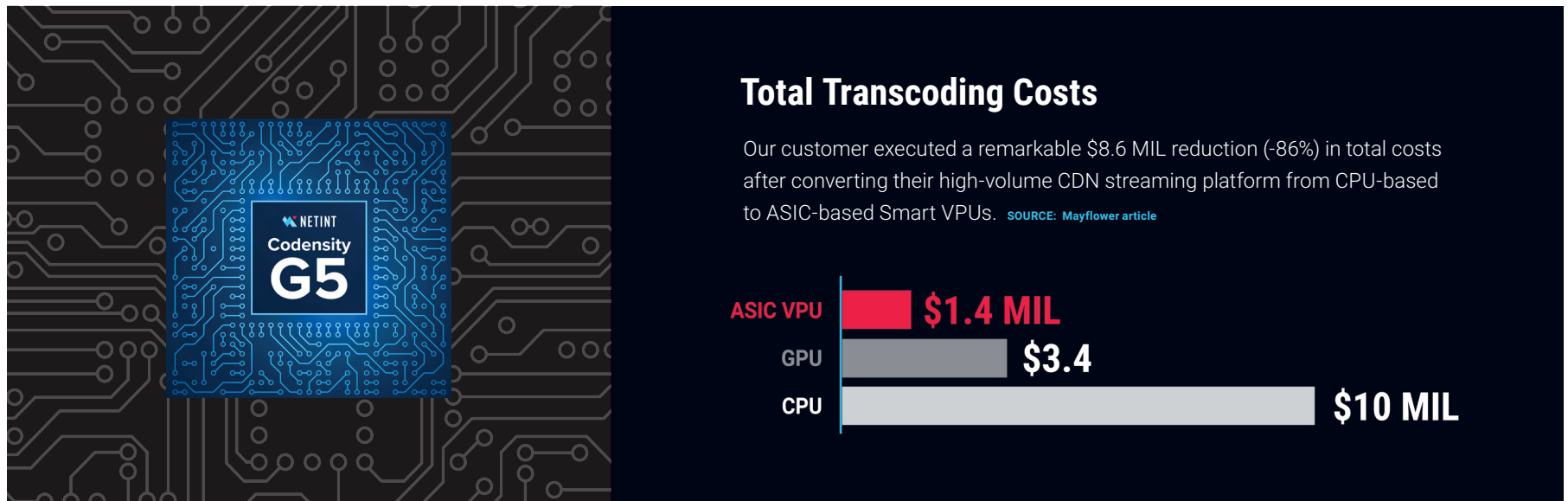
Reduce costs and power consumption at least 80% for large-scale surveillance camera deployments.

Ensure video data is securely captured, transmitted and stored with privacy, protection and compliance.

Our Smart VPUs are engineered with ASIC technology, for the sole purpose of encoding, transcoding and processing video.

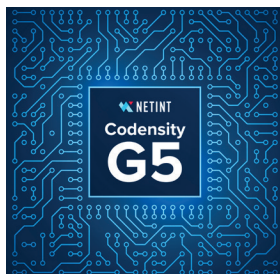
## Our Video Processing Units are built with a single purpose. They only process video.

By tasking VPUs with all video transcoding, the workflow frees up the CPU to do its thing, resulting in massive 10X more throughput at 1/10<sup>th</sup> operational costs. The results are phenomenal, as demonstrated by our customer below.



# NETINT Smart VPUs with AI

Our VPUs are smart because the added AI inferencing will supercharge your productivity 10X.



**NETINT Quadra Smart VPU**  
ASIC chip, 2nd Gen G5

## **Built for Speed**

Tasking VPUs with only video transcoding, they process, scale, and overlay streams faster than any other transcoder.

## **Built for Volume**

VPUs shift substantial computational loads to the cloud by specializing in a singular processing task so it pushes 10X more streams to the cloud.

## **Eats Less Power**

VPUs have a tiny appetite for power, drawing <7W, and uses 80% less energy than CPU-processing.

## **Boosted with AI**

AI inferencing accelerates accuracy and productivity with key object filtering and facial recognition.

**NETINT**  
**2024 Winner**

**TECH**  
**EMMYS®**

**Design & Deployment  
of Efficient Hardware Video  
Accelerators for Cloud**

We feel it's worth mentioning,  
co-winners for this same category  
were Google, Meta and AMD.

<https://theemmys.tv/tech-75th-award-recipients/>

# Smart VPUs



**What makes them so smart?**



## Our VPUs are smart:

- Functions like scaling and overlay (formerly performed in software) now occur onboard the VPU chip at phenomenal speeds that can only be achieved with hardware
- AI accelerated processing power up to 18 TOPS for tasks like video analysis and content moderation make it robust and future-proof
- Universal operating system and kernel compatibility make the VPU agnostic to any platform (Linux, Windows, Android and Mac) or hardware architecture (x86 and ARM servers)
- Virtualization and containerization enable easy deployment inside data centers with security integrity for hyperscalers
- NVMe compatibility makes it easy to upgrade existing hardware chassis with VPUs that are inexpensive, low power and highly scalable



# Analyze 10X more volume of camera streams and catch more threats with AI

Finally, an efficient streaming technology for security providers to monitor, stream and archive surveillance video for 80% less CAPEX.

Quadra Video Processing Units (VPUs) are built for high-volume, low-bitrate, network digital video recording (NDVR), transcoding, and archiving for streaming and large storage arrays required by security and surveillance monitoring providers.

The built-in Deep Neural Network (DNN) AI engine accelerates reliable detection, classification and segmentation of high-volume streams unlocking your 10X operational advantage.

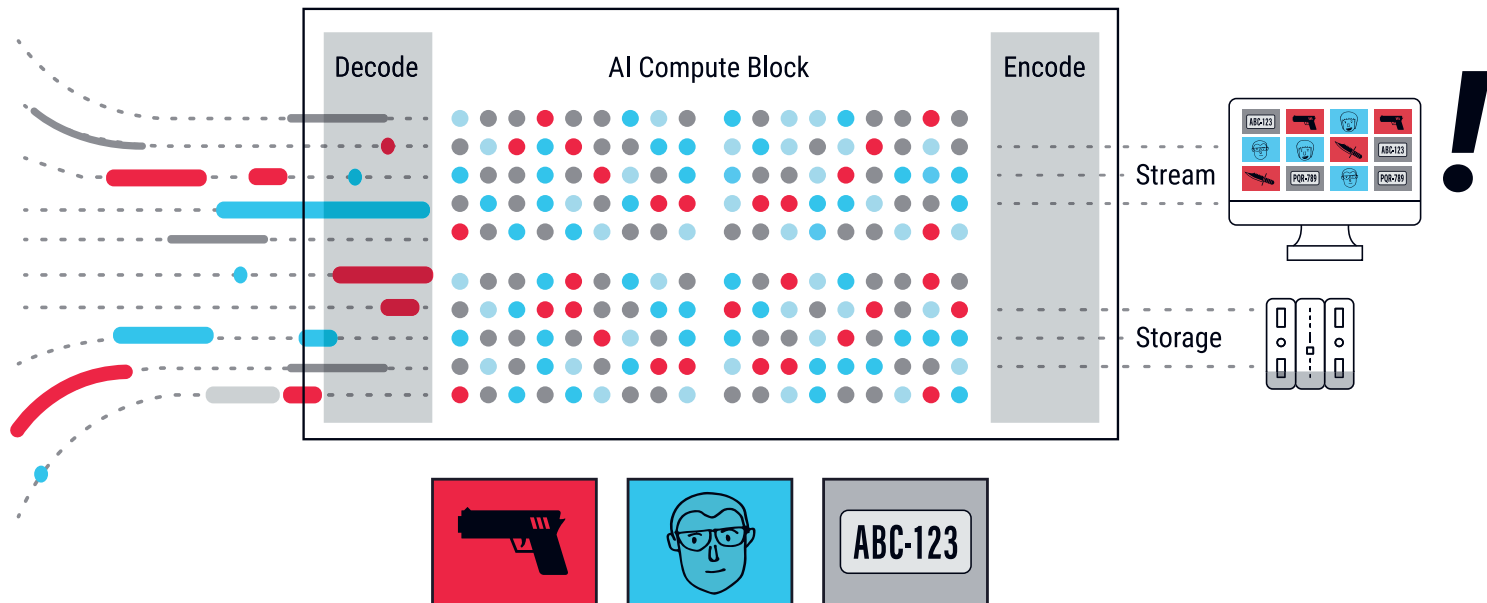
- **Get bullet-speed transcoding by converting your server architecture from CPU-based to ASIC-based VPUs**
- **Increase throughput 10x with on-chip processing**
- **Accelerate object detection and accuracy with AI filtering**



# Supercharge your productivity 10X with AI object filtering

Key frame detection identifies and escalates alerts so you can focus on the priorities.

Increase your capacity by 10x by filtering out 90% of the noise. Smart VPUs streamline video analysis and eliminates bottleneck with high-efficiency prescreening security models. The key frame detection spot analyzes every 10th decoded frame, searching to identify key objects triggering escalated alerts for agent analysis or intervention.

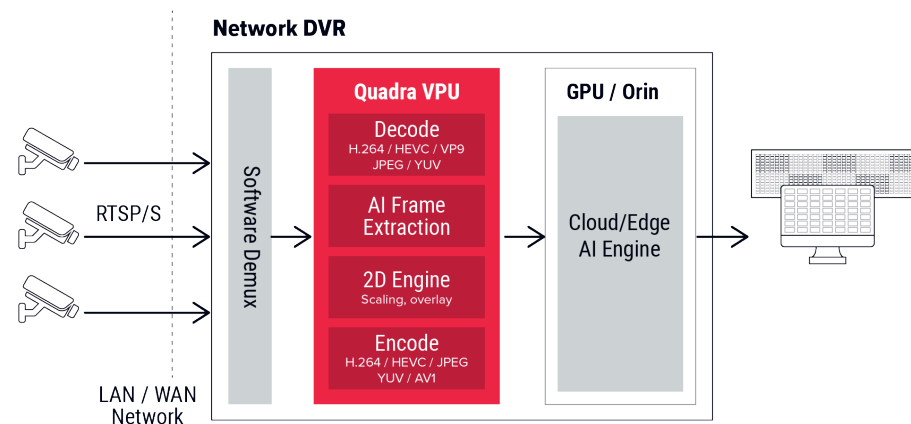




# Stream 10X more camera feeds into the cloud

Smart VPUs enable AI inferencing for threat detection.

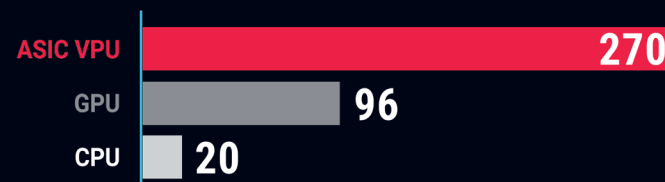
Quadra handles the heavy lifting of video codec processing, supporting formats like H.264, HEVC, and AV1. Its low-latency processing supports real-time applications like threat detection and facial recognition while scaling for workload demands.



## Server Stream Density

Customer increased throughput volume by 1,250% with Smart VPUs

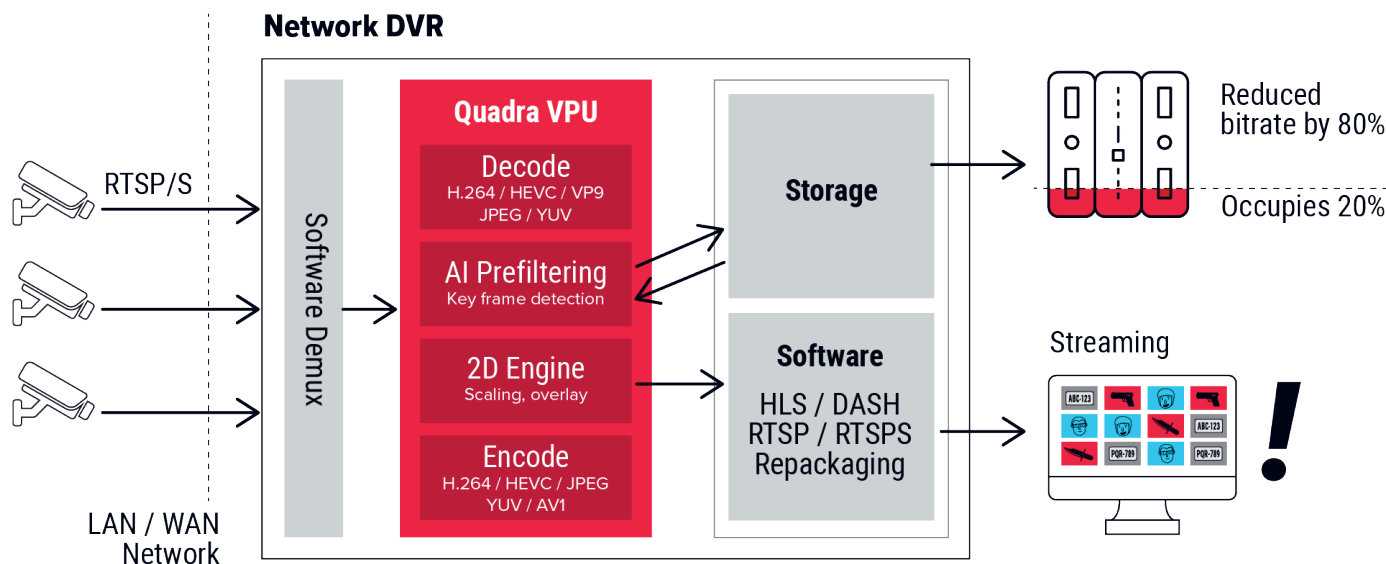
SOURCE: Mayflower article



# Archive high-quality surveillance footage without the bulk.

Smart VPUs use AI to reduce the bit rate of your large archive libraries with zero quality loss.

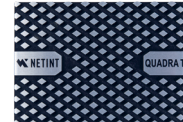
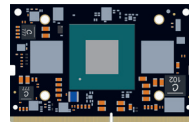
Typically, the storage capacity of a video surveillance system is directly correlated to the CAPEX and OPEX investment; the more you spend, the more you get. That's not the case here. Smart VPUs use AI powered video compression and processing capability enabling nDVR storage to occupy only 20% the volume.



# Security Application: Quadra Modules

ASIC Smart VPU | Codensity G5

Process your video streams with video processing units; the industry's most efficient hardware for encoding video.



	T1S	T1U	T1A	T2A
<b>Form Factor</b>	SODIMM-260	U.2	AIC, HHHL	AIC, HHHL
<b>ASIC Codensity Chip</b>	G5	G5	G5	G5 (2x)
<b>Power</b>	< 10.5 Watts	17 Watts	20 Watts	40 Watts
<b>Video Encoding Standards/Formats</b>	Encoder: H.264, HEVC, JPG, YUV, AV1 Decoder: H.264, HEVC, VP9, JPG, YUV Audio: MP3, AAC-LC, HE-AAC			
<b>Decoding Throughput</b>	Up to 48x 1080p30			Up to 96x 1080p30
<b>Encoding Throughput</b>	Up to 32x 1080p30			Up to 64x 1080p30
<b>AI Capacity</b>	n/a	15 TOPS	18 TOPS	36 TOPS



NETINT is a proud member of the Security Industry Association.







For more information on NETINT  
encoding solutions, contact us.

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