# Intelligent Video Systems
# 80 Channel Video Analytics

## SiMa Value Proposition

- Easily add AI to Video Management Systems (VMS) to enhance incident identification.
- Reduce industrial PC (IPC) loading and total cost of ownership (TCO), running end-to-end video pipeline all on SiMa PCIe card.
- Enable high card counts to scale AI video analytics from 16 to 80 cameras on single IPC.
- Develop and deploy fast with SiMa's Palette SDK development software for Physical AI.

**Windows and Linux Support**



5-cards, 80 channels on one IPC

**YOLOv9s**
(object detection)

**YOLOv8s-pose**
(pose estimation)

**YOLOv8n**
(object detection)

**YOLOv7n**
(object classification)



16-channels per chip
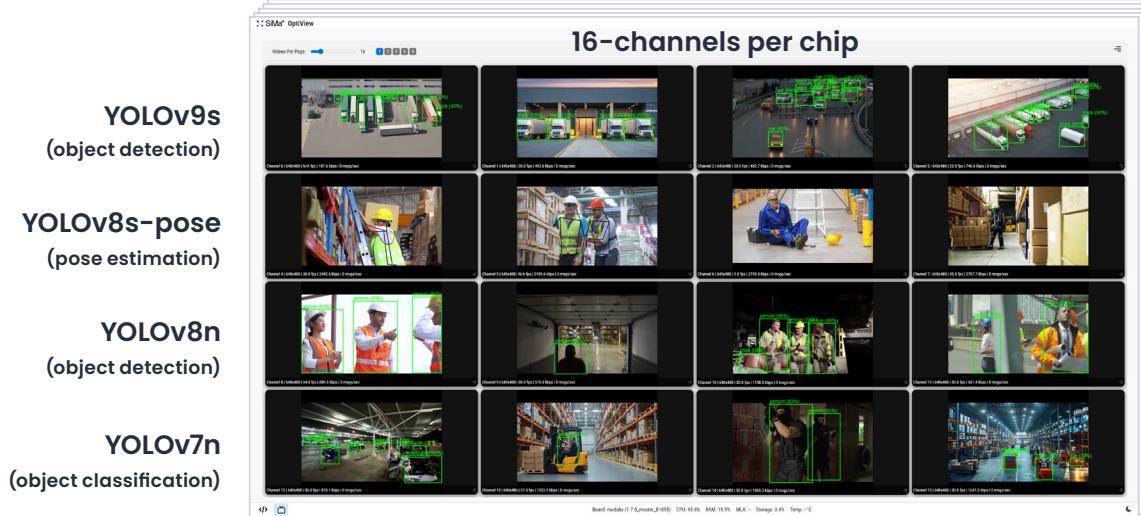
**5 x 16 channels = 80 channels of AI video analytics, running on IPC with Modalix PCIe cards**

## SiMa's Modalix SoCs redefine multi-stream AI video processing

As AI video analytics expand across cities and factories, compute-density becomes the bottleneck. By running full AI video pipelines on-chip, Modalix reduces host PC workload and power draw - enabling easy scaling from 16 to 80 real-time video streams on a single IPC. Each card delivers highly performant, multi-model AI processing with no cloud dependency.

- Extends AI video analytics from single-node to multi-card systems.
- High channel density cuts system cost, power, and footprint.
- On-device processing keeps data local and private.
- Compatible with standard industrial PCs.

# Fast, flexible, and scalable deployment of VMS systems with 80 channel, support—under 10W per card

## Technical Details

Entire video pipeline, with multiple AI inference models on single card.

80-channel, real-time AI video analytics at under 10W per chip.

30 FPS per channel (VGA).

On-chip video decode/encode, AI inference, and dynamic metadata overlay offloads host IPC for increased card count.

Octa-core Arm Cortex A65 CPU enables VMS stack, implementation of all business logic, plus native browser visualization.

## Scalable System Architecture

- Complete video pipeline on chip
- Plug-and-play on-device inference

**SiMa PCIe card**

**80x**

**Entire video processing pipeline runs on SiMa card**

Decode → Pre-Process → Model Inference → Post-Process → Encode

SiMa's Palette software provides the tools to develop, test, and deploy multi-stream AI video pipelines
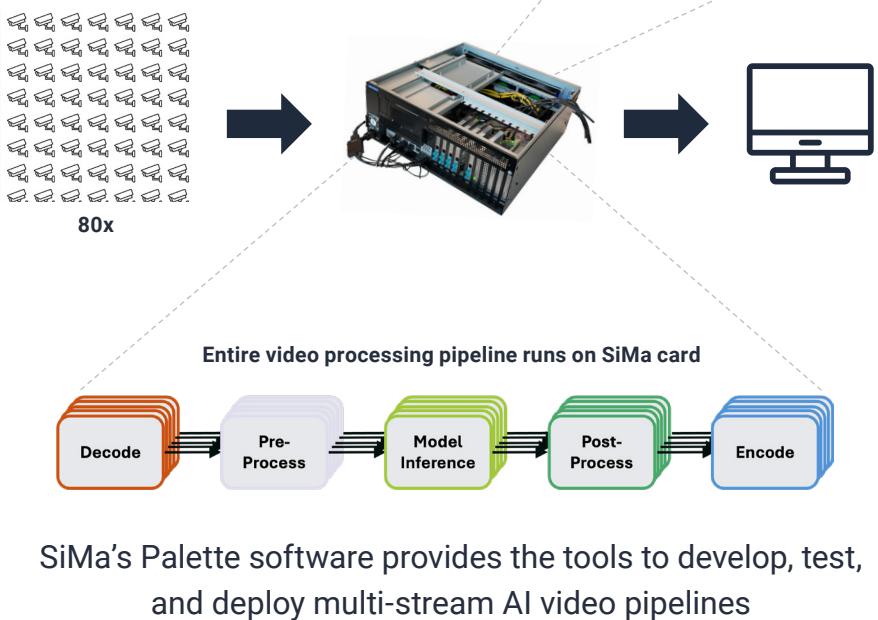
## Hardware

### Our Silicon
**Modalix**

### Our Boards
**SoM**

**SoM Dev**

**PCIe HHHL**

## Software

**Palette Edgematic™**

**Palette™ SDK**

**LLiMa by SiMa.ai**

🤗 **Hugging Face**  huggingface.co/simaai

**Model Zoo**  sima.ai/model-browser/

## About SiMa

SiMa.ai is a leader in Physical AI, delivering a purpose-built, software-centric platform that brings best-in-class performance, power efficiency, and ease of use to Physical AI applications. Focused on scaling Physical AI across robotics, automotive, industrial automation, aerospace & defense, smart vision, and healthcare, SiMa.ai is led by seasoned technologists and backed by top-tier investors. Headquartered in San Jose, California. Learn more at www.sima.ai.