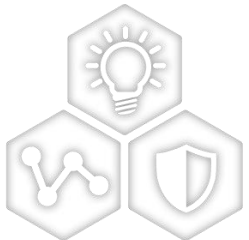


Microchip Hailo Update



A Leading Provider of Smart, Connected and Secure Embedded Control Solutions



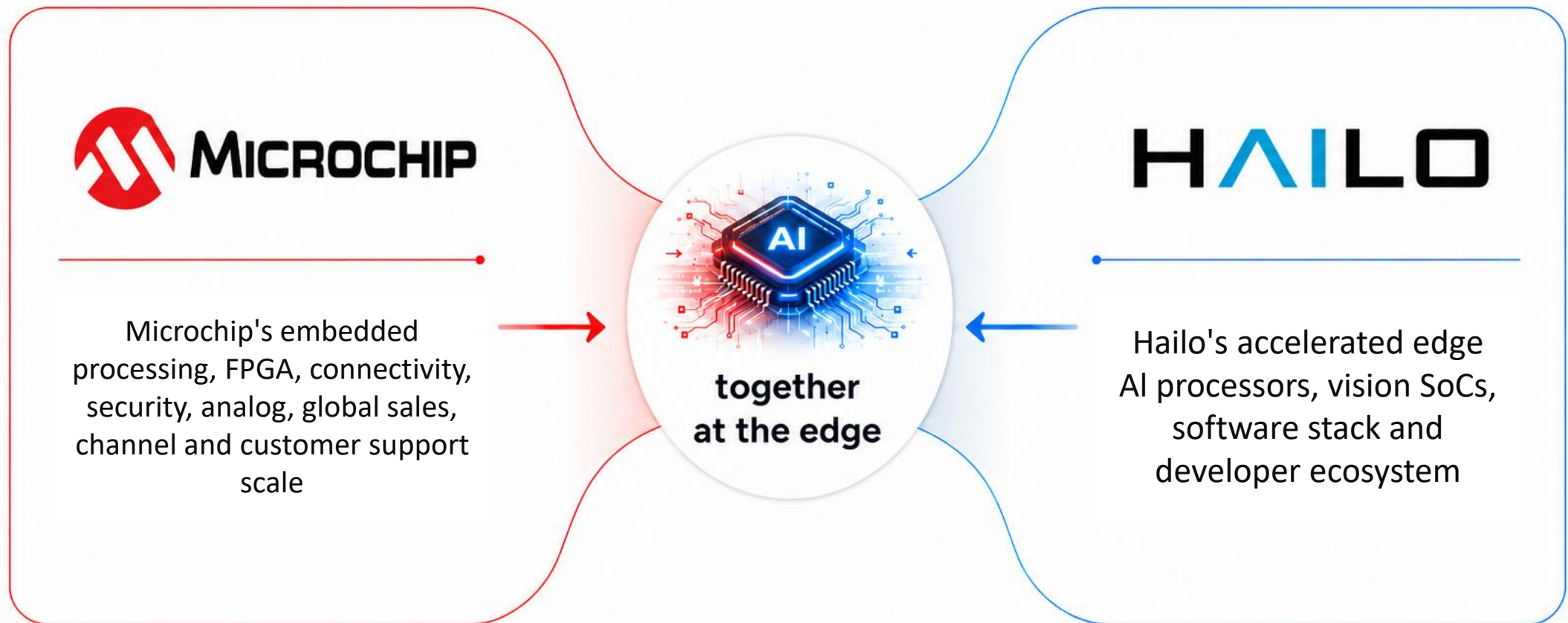
SMART | CONNECTED | SECURE

ICBU G.China Marketing

SEP 2026

Accelerating Edge AI at Scale with Hailo

Stronger Together



The goal: a stronger, more scalable Edge AI platform for industrial, vision, automotive, retail, IoT, and Physical AI

Microchip Edge AI Portfolio

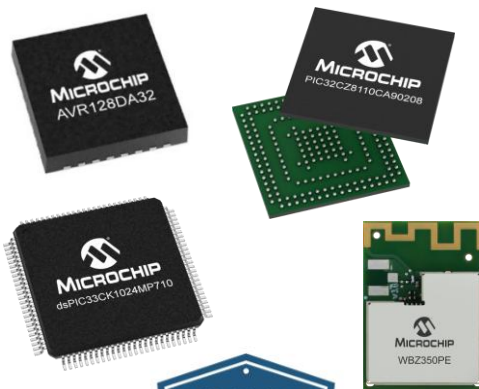
Hardware platforms by runtime environments & workloads

RTOS

Linux



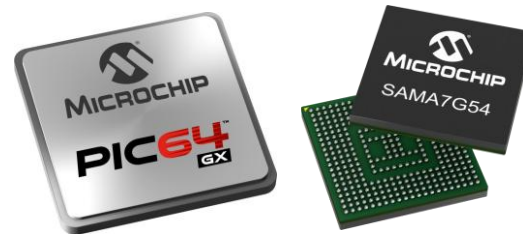
MCU



8-bit to 32-bit | SAM® | dsPIC® | PIC® | AVR®

Sensors, Industrial control, IoT nodes

MPU



32-bit to 64-bit Linux MPU | SAM® | PIC64®

HMI, industrial networking & connectivity

FPGA



64-bit PolarFire® programmable FPGA logic

Customized industrial, enterprise, A&D

In-fabric acceleration, or attach Hailo over PCIe®

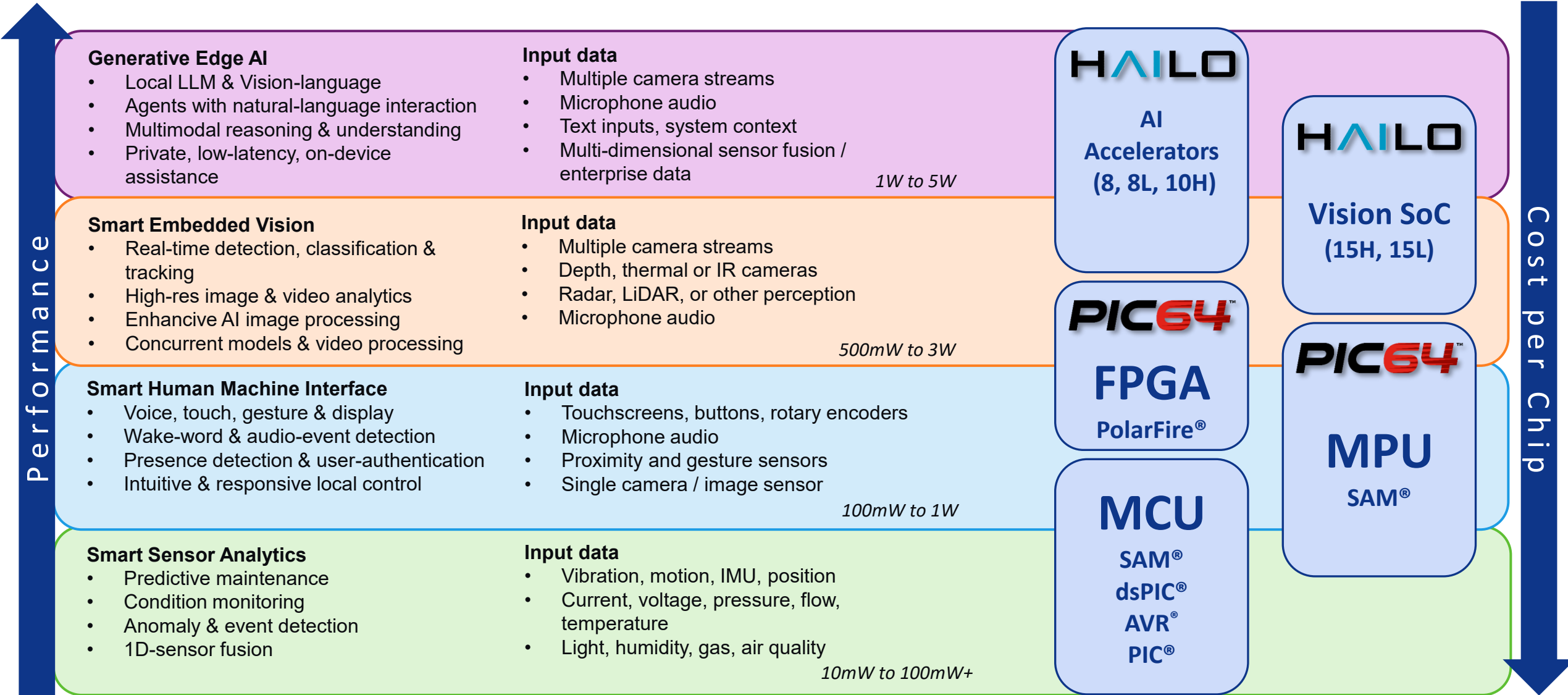
Hailo



AI Accelerators (MPUs, x86) & Vision SoCs

Smart Cameras, Robotics/Physical AI

Silicon Platforms for Edge AI Use Cases



Hailo Edge AI Portfolio – At a Glance

Premier Edge AI Processors

AI VISION PROCESSORS | complete camera SoC

Mass-market camera SoC

Hailo-15L

7 TOPS



- Quad Arm® A53 @ 1.1 GHz, 10.1 kDMIPS
- AI-ISP + ISP to 4K30, 12 MP
- Vector DSP 380 GOPS
- Encode to 4K60 multi-stream
- 2K 30fps full pipeline under 3 W
- PCIe® x2, GbE, USB3, CAN
- 13 × 13 mm FCCSP

Premium camera SoC

Hailo-15H

20 TOPS



- Quad Arm® A53 @ 1.3 GHz, 12 kDMIPS
- AI-ISP + ISP to 4K30, 12 MP
- Vector DSP 350 GOPS
- Encode to 4K45 multi-stream
- 4K 30fps full pipeline under 5 W
- PCIe® x4, GbE, USB3
- 15 × 15 mm FCCSP

AI ACCELERATORS | co-processor to a Host (ARM/x86)

Entry

Hailo-8L

13 TOPS



- INT8 / INT16
- No external DRAM
- PCIe® Gen3 x4
- 1.5 W typical
- 17 × 17 mm FCPGA
- IC, M.2
- Industrial

Volume

Hailo-8

26 TOPS



- INT8 / INT16
- No external DRAM
- PCIe® Gen3 x4
- 2.5 W typical
- 17 × 17 mm FCPGA
- IC, M.2, PCIe Cards (multi-chip)
- Ind. + automotive

Generative AI

Hailo-10H

20 | 40 TOPS



- INT4 / 8 / 16 mixed
- GenAI Support
- 32-bit LPDDR4X
- PCIe® x4 + USB3
- 2.5 W typical
- 15 × 15 mm FCCSP
- IC, M.2
- Ind. + automotive

Specifications from the device datasheets, available through the Hailo Developer Zone. Hailo-15 power figures are for a complete camera pipeline including ISP, analytics and encode; accelerator figures are device power. Hailo-8 and Hailo-10H offer AEC-Q100 Grade 2 automotive variants. Device images © Hailo.

Hailo-8 / 8L vs Hailo-10H: Application Fit

Hailo-8 / Hailo-8L

26 TOPS / 13 TOPS • CNN & Vision AI

Application scenarios

- Smart cameras & security (ITS, perimeter protection, access control)
- Industrial automation (AOI inspection, anomaly detection, sorting, OCR)
- Retail (POS, supply chain analytics)
- Robotics & Physical AI
- ADAS perception

Best fit: Smart Embedded Vision • Smart Sensor Analytics • Smart HMI

Hailo-10H

Generative & Multimodal AI Accelerator
40 TOPS

Application scenarios

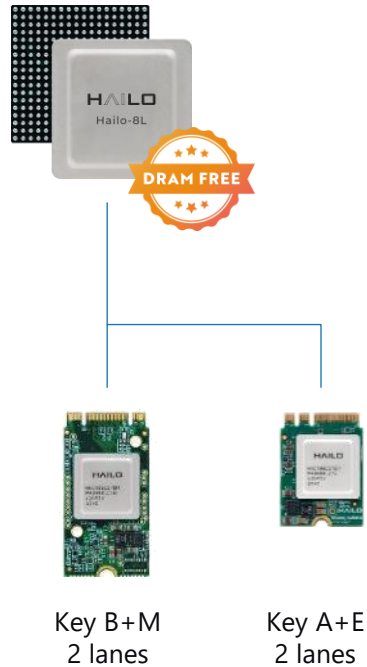
- Local LLM & vision-language model inference
- Natural-language AI agents
- Multimodal reasoning (vision + voice + text)
- Private, low-latency on-device assistants
- Smart cockpit / IVI generative AI, PC copilot

Best fit: Generative Edge AI

Hailo-8L Product Portfolio

TOPS	13
Host Interface	PCIe Gen 3, 4 Lanes
Supported Architectures	CNN, Transformers
Numeric Representation	INT8/16
Package	17x17 FCPGA
Form Factors	IC, M.2
Typical power	1.5W
Temp. range	Industrial: -40°C – 85°C

Hailo-8L AI Accelerator



Hailo-8 Product Portfolio

TOPS	26
Host Interface	PCIe Gen 3, 4 Lanes
Supported Architectures	CNN, Transformers
Numeric Representation	INT8/16
Package	17x17 FCPGA
Form Factors	IC, M.2, PCIe Cards (Multi Chip)
Typical power	2.5W
Temp. range	Industrial: -40°C – 85°C Automotive: -40°C – 105°C

Hailo-8 AI Accelerator



CoB – 26 TOPS

Hailo-8 Century High Performance PCIe Cards

**M.2 AI Acceleration
Module**
26 TOPS



Small Form Factor
52-104 TOPS



0802, 0802s, 0803, 0804
Available from Hailo

Wide Host Compatibility
104-208 TOPS

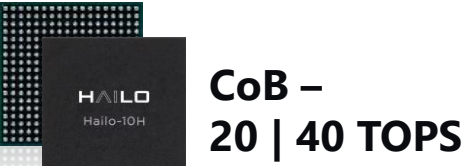


0804S, 0805S, 0806S, 0807S, 0808S
Available from 3rd party

Hailo-10H Product Portfolio

TOPS (INT8 4)	20 40
Host Interface	PCIe Gen 3, 4 Lanes, USB
Supported Architectures	CNN, Transformers, LLM, VLM
Numeric Representation	INT8/16 and 4bit with double TOPS
Package	15x15 FCCSP
Form Factors	IC, M.2
Typical power	2.5W
Temp. range	Industrial: -40°C – 85°C Automotive: -40°C – 105°C

Hailo-10H AI Accelerator



M.2 AI Acceleration Module

M.2 2242



- Key M
- 4 lanes
- 4GB DDR

M.2 2280



- Key M
- 4 lanes
- 4/8GB DDR options

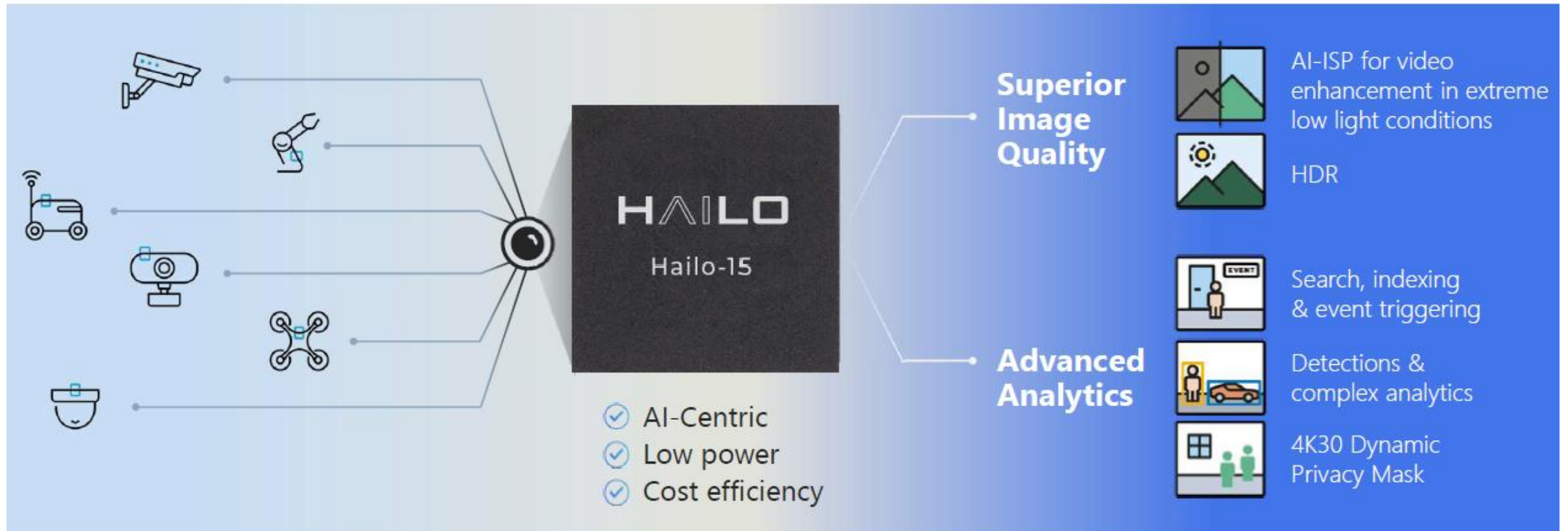
Support Models

Hailo NPUs support a wide variety of AI models spanning traditional computer vision (CNNs) and Generative AI (LLMs/VLMs). These models are readily available as pre-compiled .hef binaries via the official **Hailo Model Zoo** GitHub and the **Hailo AI Software Suite**.

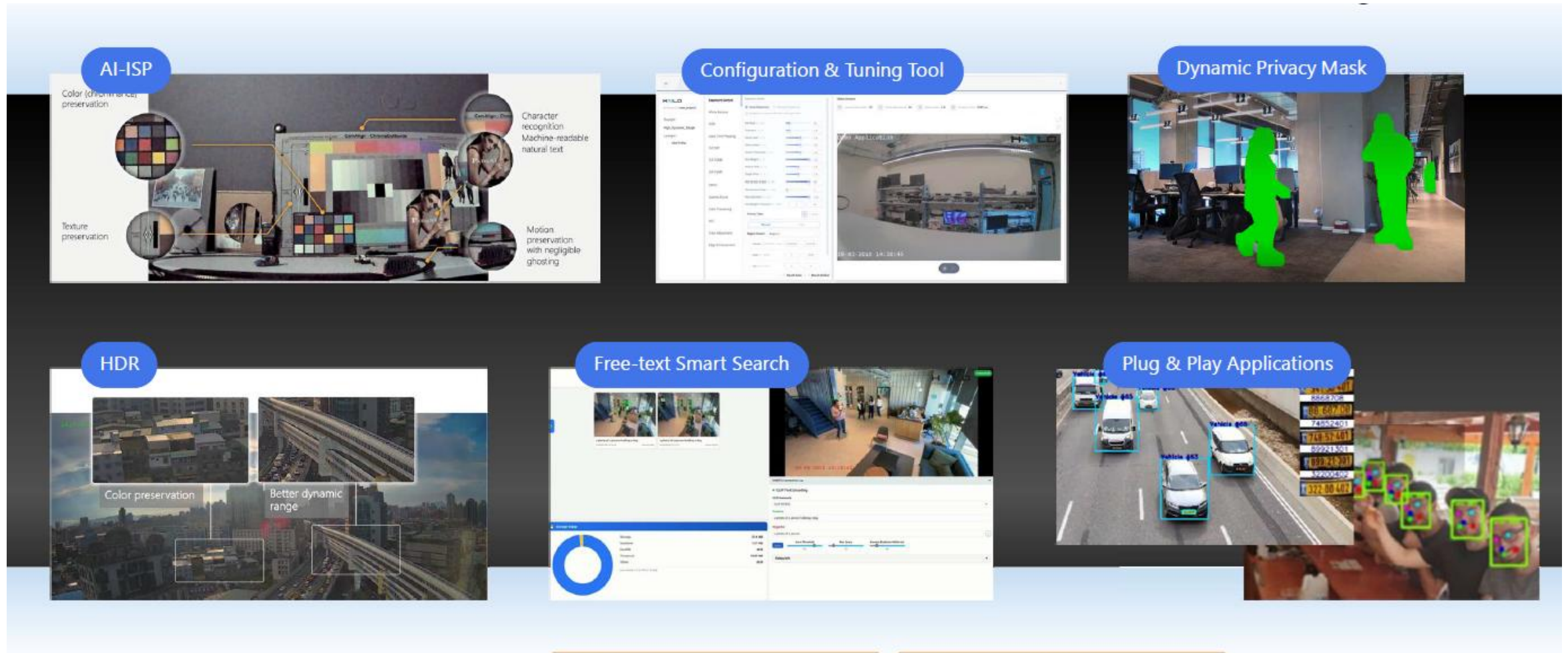
- **Object Detection & Tracking**
 - YOLO Series: YOLOv5, YOLOv6, YOLOv7, YOLOv8, YOLO11, and the NMS-free YOLO26.
 - Oriented Object Detection: YOLOv11-obb.
 - Other Architectures: EfficientDet, SSD, CenterNet, and Detr (Transformer-based).
- **Image Classification & Feature Extraction**
 - ResNet Family: ResNet-18, ResNet-34, ResNet-50, and ResNet-101.
 - Mobile & Edge Networks: MobileNet (v1/v2/v3), HardNet, FastViT, and RepVGG.
 - Vision Transformers: ViT (Tiny, Small, Base).
- **Segmentation & Depth Estimation**
 - Semantic & Instance Segmentation: YOLOv5-seg, YOLOv8-seg, and YOLO26-seg.
 - Depth Estimation: YOLO26 depth models and specialized depth-sensing pipelines.
- **Pose Estimation & Face Detection**
 - Human Pose: YOLOv8-pose, YOLO11-pose, and standard keypoint detection models.
 - Facial Analysis: RetinaFace and MediaPipe-compatible architectures.
- **Generative AI (LLMs & VLMs)**
 - Large Language Models (LLMs): Llama 3.2 (1B), Qwen2 / Qwen2.5 (1.5B), Qwen2.5-Coder (1.5B), and DeepSeek-R1-Distill-Qwen (1.5B).
 - Vision-Language Models (VLMs): Qwen2-VL-2B-Instruct.
 - Speech & Audio: OpenAI Whisper for automatic speech recognition.
- **OCR & Image Enhancement**
 - Text Recognition: PaddleOCR-v5 (Mobile detection and recognition).
 - Image Processing: Zero-DCE (Low-light enhancement) and super-resolution models.

Hailo-15 AI Vision Processors

- A System-on-a-Chip (SoC) that sets new standards in image quality & IA analytics for edge devices.



Complete Out-of-the-Box Camera Functionality



No training;
No dataset required

Low power consumption:
4K30 – <5W; 5M30 – <3W

The Best of Both Worlds without Compromise

Superior Video Quality



Hailo-15

Better colors,
textures, details



Leading Competitor

Superior Analytics



- P** 55 people
- C** 5 cars
- B** 1 bike

Hailo-15

Precise detection



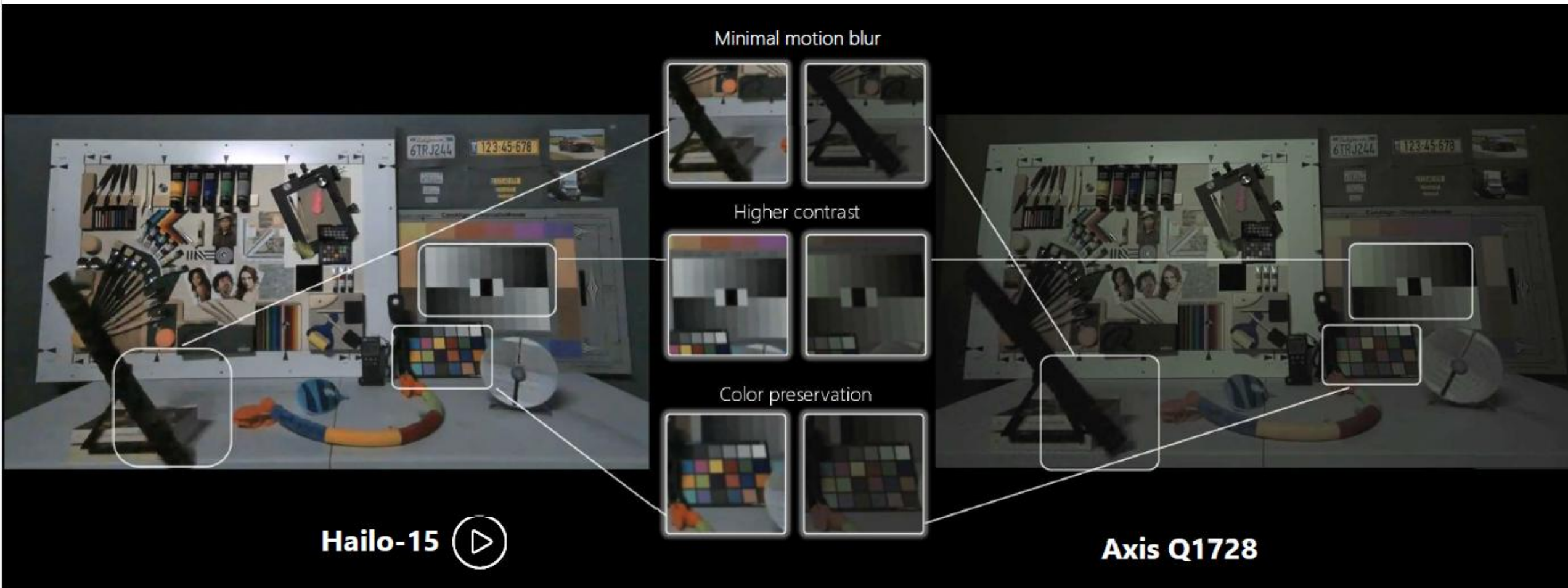
- P** 24 people

Leading Competitor

Limited AI compute
results
in miss & false detection

AI-Powered Low-Light Video Enhancement

Lux < 0.1 | 4K30 resolution



Ready-to-use Camera Applications

	Hailo-15L 5M30	Hailo-15L 4K30	Hailo-15H 4K30
AI-ISP	Supported		
Full Resolution Dynamic Privacy Mask	LinkNet_MobileNet 128x128 FPS: 1400		LinkNet_MobileNet 256x256 FPS: 1072
Multi-tile Object Detection	Yolov8s 384x640 FPS: 163		Yolov8s 384x640 FPS: 452
2 nd Stage Analytics ² : LPR, Face Attributes\LM\Recognition, Person Attributes	Up to 50 new events per sec		> 50 new events per sec
Free-Text search clip CLIP_ViT_base_32, CLIP_ViT_large_14 ³	Up to 10 queries per sec		>10 queries per sec
Encoder Multi-stream, ROI encoding, configurable CBR\VBR	4K60	4K60	4K45
Typical Power ⁴	< 3W	< 3W	3.5W

¹Demonstrating results on Hailo's system configuration (software and hardware platforms) for a specific use cases

²LPR: PP-OCRv5_mobile_rec
Face landmarks: MediaPipe Face Mesh
Face detection: InsightFace scrfd
Face recognition: arcface_mobilefacenet

³Hailo-15H only

⁴power measured on typical production units in ambient room temperature for a specific use cases scenario – daylight image profile with advanced analytics

Hailo-15 Family – Product Specifications

	Hailo-15H	Hailo-15L
NN Core	20 TOPS (8b)	7 TOPS (8b)
AI 4b Support	All H15 products support 4b quantization for every layer	
	32 TOPS (4b) Resnet50 27 TOPS (4b) YoloV5	11 TOPS (4b) Resnet50 9 TOPS (4b) YoloV5
ISP	Up to 4K30 in single stream Static or dynamic privacy mask, Rich OSD, LDC, digital zoom, EIS	
DSP	Vector DSP, 256 MACs @700 MHz supports up to 350 GOPs Warping operations in DSP	Vector DSP, 256 MACs @750 MHz supports up to 380 GOPs Warping operations in HW engine
Dual Sensor	2x 4K Streams 15 FPS	2x 5M Streams 30 FPS
HDR	Up to 4K30 (2-DOL), 4K20 (3-DOL)	
Memory Interface	LPDDR4/4X 32 bit @ 4266 MT/s	
Encoding (HEVC & AVC)	Up to 4K@45FPS Performance Multiple streams CBR/VBR profiles	Up to 4K60 Performance m Multiple streams CBR/VBR profiles
Physical	15 x 15 mm	13 x 13 mm

Hailo Confidential *Allowing 4K30 FPS + 720P30 multi-stream*

Hailo-15 Family – Product Specifications

	Hailo-15H	Hailo-15L
AP	Quad-core ARM™ A53 @ 1.3 GHz 12 kDMIPs	Quad-core ARM™ A53 @ 1.1 GHz 10.1 kDMIPs
Video in	Dual MIPI CSI (2 x 4 lane 2.5 Gbps), DVP 24 bit	MIPI CSI 2 x 2 lanes 2.5 Gbps
Video out	MIPI DSI 1 x 4 lane 2.5 Gbps	
SDIO/eMMC	2x SDIO: SD ver6.0 4bit SDR104 or eMMC 5.1 4-bit/8-bit (up to HS200)	
PCIe	Gen3.0 x 4 lanes (Endpoint or RC)	Gen3.0 x 2 lanes (Endpoint or RC)
Ethernet	10 / 100 / 1000 Mbps with RMII,RGMII	
USB	3.1 Gen2 Host/Device. 2.0 Host	
Serial interfaces	I2C x4, UART x4	
Flash controller	SPI/DSPI/QSPI up to 4 devices	
SPI	none	3 master, 1 slave
I2S in / out	1 dual channel	1 dual channel, 1 single channel
PWM	6	

Broad & Diverse Accelerator Use Cases

Spanning Industrial, Commercial, and IoT Markets



More Applications

This powerful combination enables sophisticated AI applications right at the edge.

Commercial & Industrial

- **Smart Cities:** Real-time traffic analysis, license plate recognition, and smart parking.
- **Retail Analytics:** Anonymous customer tracking for heatmaps, shelf stock monitoring, and queue management.
- **Industrial Automation:** Visual quality control on assembly lines, safety gear detection, and predictive maintenance alerts.

Home & Hobbyist

- **Advanced Home Security:** On-device person, package, and vehicle detection without subscription fees.
- **Robotics & Drones:** Autonomous navigation and intelligent object recognition for personal projects.
- **Creative Projects:** Real-time future recognition interfaces, smart wildlife cameras that identify species and more.

Immediate Information Access

- Hailo website has information on lots of use cases and fairly detailed product information

www.Hailo.ai

- To get started, for accelerator products (Hailo 8 / 8L / 10H) almost all Technical information is available on GitHub.

<https://github.com/hailo-ai>

- There is also active community support on

<https://community.hailo.ai/>

- Please contact your Microchip representative for more information and support



硬體、軟體的能力有限
應用層面的想像卻是無限

Thank you very much
