# HAILO

# Hailo-8 AI Processor

## Delivering data center class performance to edge devices



## Key Features & Benefits

Unprecedented AI compute power of 26 Tera-Operations Per Second (TOPS)

Best-in-class power efficiency with typical power consumption of 2.5W

Enabling real-time, low latency & high-efficiency AI inferencing on edge devices

Highest cost-efficiency (TOPS/$) compared with existing solutions

Scalable:
→ Enabling simultaneous processing of multi-streams & multi-models
→ Supporting multiple Hailo-8 devices

Commercial, Industrial & Automotive grades, supporting:
→ Industrial: -40°C to 85°C
→ Automotive: -40°C to 105°C

Easy hardware integration; Does not require external memory

## Key Benefits of High-Performance AI Analytics on the Edge

Advanced analytics algorithms can run on high-resolution & high-frame rate video, resulting in:
→ High accuracy & ability to detect small objects
→ Detection of fast-moving objects
→ Significant reduction in false alerts
→ Generation of comprehensive metadata

Low latency & real-time alerts

Efficiency & cost-savings

More robust capabilities & richer applications

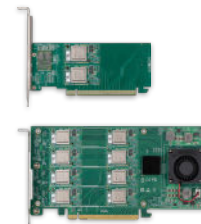## Hailo-8 Offering

**Chip On Board (COB)**



Hailo-8

**Modules** enable fast time to market & easy HW integration



Hailo-8 M.2
Key M    B+M    A+E

Hailo-8R
mPCIe

**Hailo-8 Century High Performance PCIe Cards**



**Small form factor**
52-104 TOPS
0802, 0803, 0804

**Wide host compatibility**
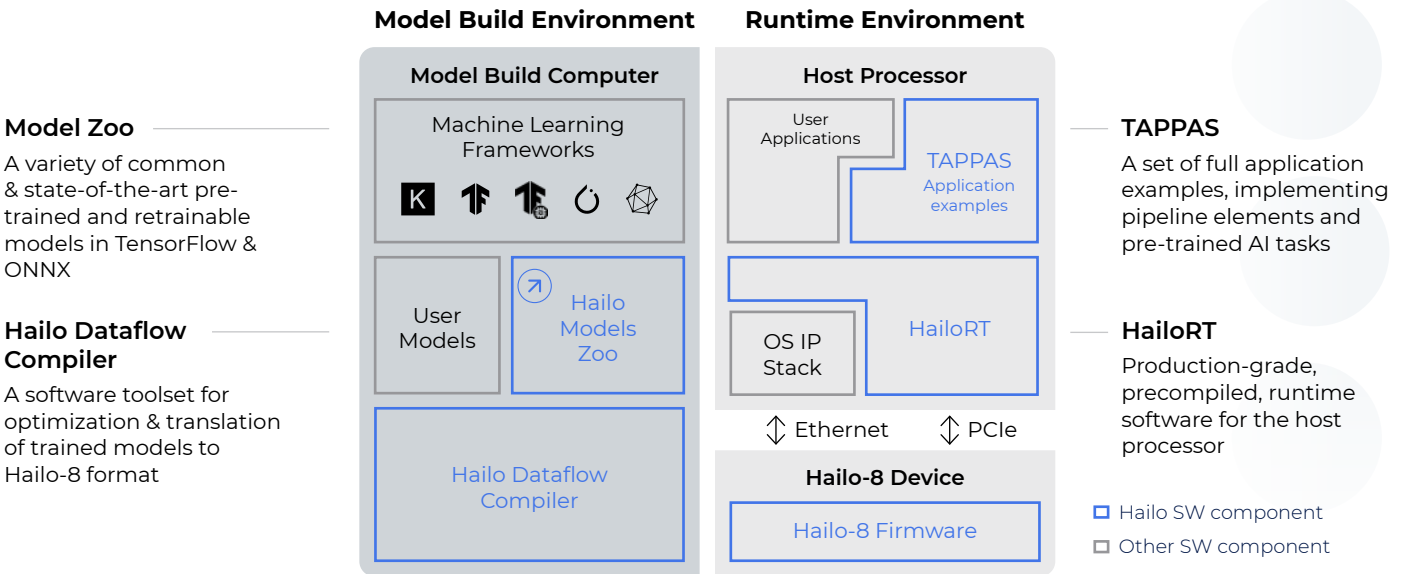104-208 TOPS
0804S, 0805S, 0806S, 0807S, 0808S

## Hailo-8 Architecture

Unique, powerful and scalable structure-driven dataflow architecture that takes advantage of the core properties of neural networks. It enables edge devices to run deep learning applications at full scale more efficiently, effectively, and substantially than traditional solutions, while significantly lowering costs.

## Comprehensive Software Suite

AI software suite which seamlessly integrates with existing deep learning development frameworks to allow smooth and easy integration in existing development ecosystems. The Hailo AI software suite includes:

**Model Build Environment**

**Runtime Environment**

**Model Build Computer**

Machine Learning Frameworks

User Models

Hailo Models Zoo

Hailo Dataflow Compiler

**Host Processor**

User Applications

TAPPAS Application examples

OS IP Stack

HailoRT

↕ Ethernet  ↕ PCIe

**Hailo-8 Device**

Hailo-8 Firmware

**Model Zoo**

A variety of common & state-of-the-art pre-trained and retrainable models in TensorFlow & ONNX

**Hailo Dataflow Compiler**

A software toolset for optimization & translation of trained models to Hailo-8 format

**TAPPAS**

A set of full application examples, implementing pipeline elements and pre-trained AI tasks

**HailoRT**

Production-grade, precompiled, runtime software for the host processor

☐ Hailo SW component
☐ Other SW component

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## Neural Network Models & Application Support

| AI frameworks: TensorFlow, TensorFlow Lite, Keras, PyTorch & ONNX | Host Architectures: X86, ARM  OSs: Linux, Windows | Comprehensive dataflow compiler enables customer to port their neural network models easily & quickly |
|---|---|---|

## Automotive Compliance

| A-SPICE L2 development flow | AEC-Q100 Grade 2 compliant | ISO-26262 ASI-B (D) compliant |
|---|---|---|

## Hailo Ecosystem

Hailo collaborates with partners globally to offer products for edge solutions — from small and fanless devices, to ruggedized industrial appliances, high capacity video analytics platforms, embedded computing platforms for automotive & robotics and more.

To select your Hailo-based AI platform click here

## System Usage

Co-processor connected to the various types of host processors via PCIe

Host processor ←→ PCIe / ethernet → Hailo-8

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**www.hailo.ai**

**Starter Kit** M.2 module with Hailo-8 for development & prototyping of edge AI & specifically, video analytics solutions

Click to order Hailo-8 M.2 Starter Kit

**HAILO**