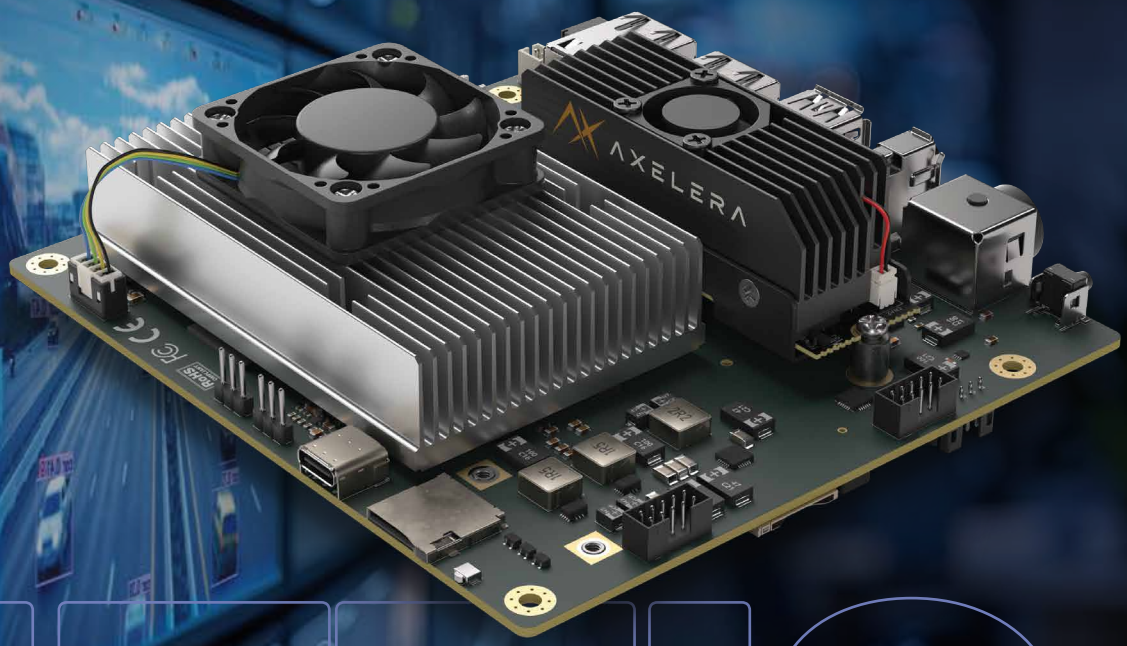
METIS M.2 EVAL SYSTEM

with Aetina RK3588 Industrial Motherboard



METIS

Security

Industry 4.0

Retail

Mobility

Logistics

Robotics

Medical

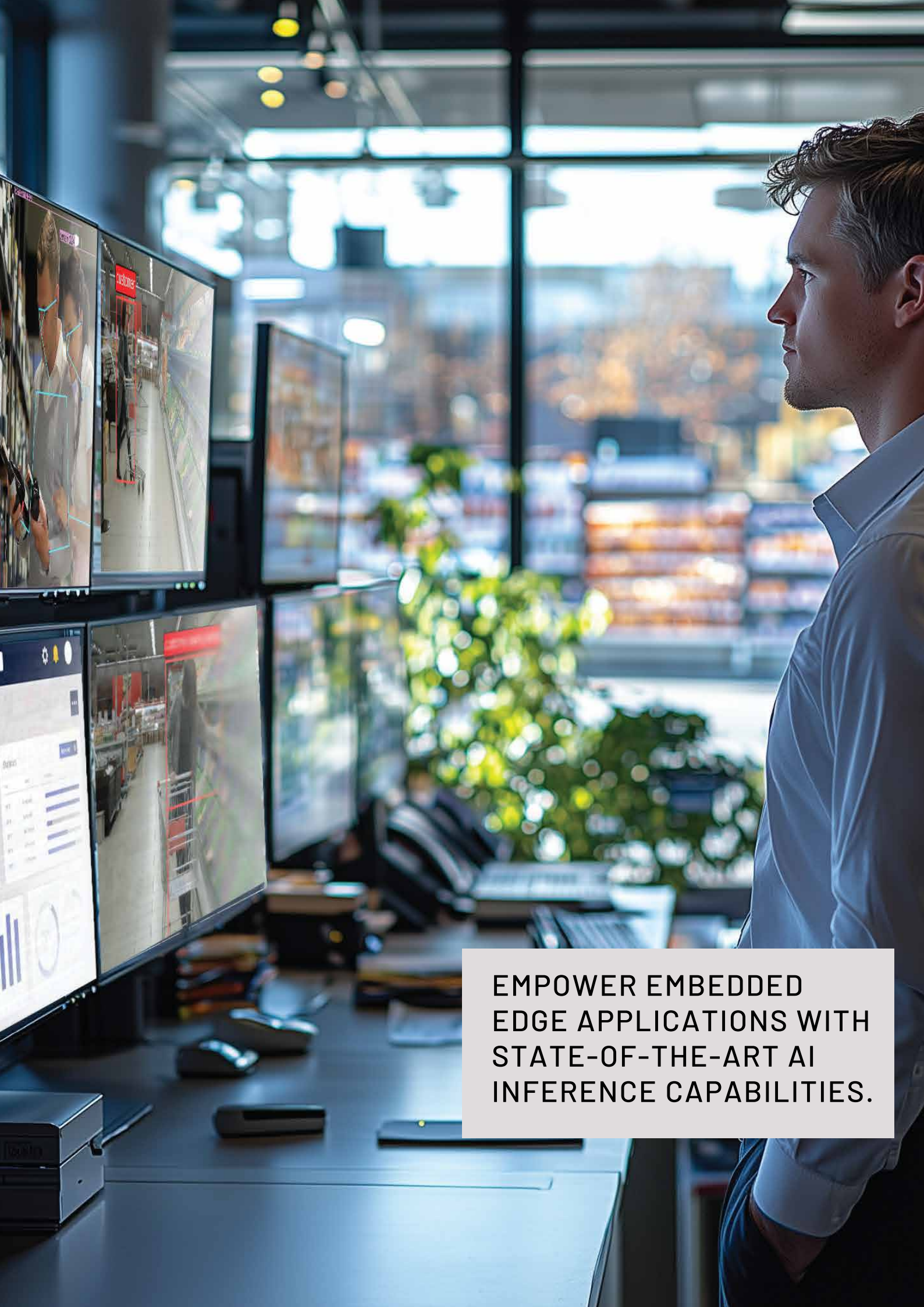
Hospitality

Utilities

Agritech

AXELERA ARTIFICIAL INTELLIGENCE

aetina


EMPOWER EMBEDDED
EDGE APPLICATIONS WITH
STATE-OF-THE-ART AI
INFERENCE CAPABILITIES.

KEY FEATURES

- Supported by Aetina RK3588 Industrial Motherboard designed for diverse applications where energy efficient Edge AI in a small form factor is critical.
- Inference at the Edge powered by Metis AIPU delivering 214 TOPS/s with industry-leading energy-efficiency
- Everything you need to get started in a single box pre-integrated Metis M.2 card and pre-installed Voyager SDK.
- **A simplified Edge AI inference** - run a preloaded neural network in under ten minutes and leverage industry-standard API combined with built-in evaluation tools.
- A growing Model Zoo with a **broad coverage** of computer vision networks for object detection, image classification, pose estimation and segmentation.

KEY TECHNICAL SPECIFICATIONS

Metis	1x Metis M.2 card with 1 GB memory
CPU	8-core 64-bit ARM (4x Cortex-A76 and 4x Cortex-A55), frequency up to 2.4 GHz
GPU	ARM Mali-G610 MP4 quad-core GPU
Memory	Onboard LPDDR4 8 GB
Storage	32 GB eMMC
Operating System	Linux: Ubuntu Desktop 20.04 with Voyager SDK in a docker platform
Ethernet/USB/ COM	1x HDMI, 2x GbE, 2x USB, 2x M.2 Key
Power	DC-in 12 V / DC Jack 4-pin
Temperature	0°C~70°C

PROVEN IN KEY MARKETS

Companies in multiple market segments have already adopted Metis M.2-based AI acceleration for different applications such as:

Security: providing multi-camera AI processing capabilities in small form factors for easy deployment in shops, building sites, factories, venues.

Robotics: enable advanced cooperation between human and robots thanks to high resolution advanced gesture recognition, pose estimation and human intention decoding.

Medical: improve accuracy of real time diagnostics, monitoring, imaging and analysis.

Agritech: enhance precision in agricultural practices with crop analysis, smart irrigation/pest control, automated harvesting.

Drones: deliver real-time video processing for navigation, object detection and surveillance in lightweight, battery-powered UAV systems.

EASY TO INTEGRATE

Axelera AI's Metis technology integrates seamlessly with host CPUs based on both x86 and ARM architectures. Our team actively tests different systems from vendors such as Dell, Lenovo, Advantech, and Aetina.

VOYAGER SDK

Thanks to Voyager Software Development Kit (SDK), users have a simple software integration path for AI inference at the edge:

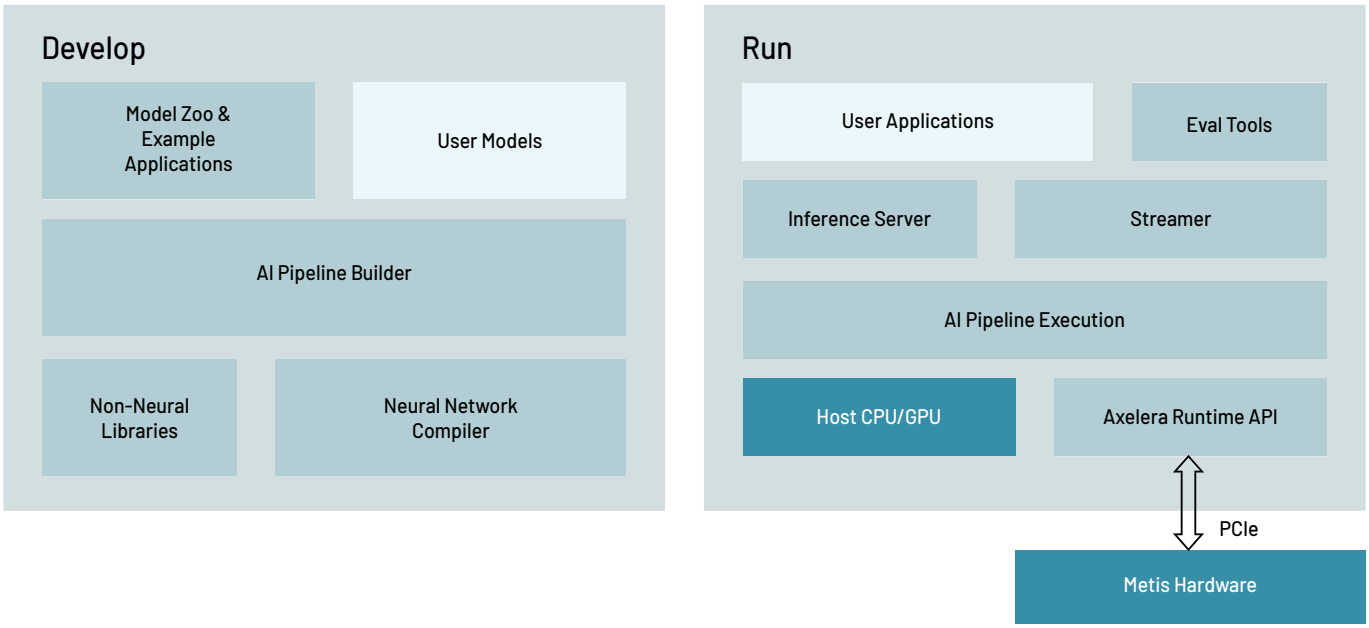
- **Great out-of-the-box experience:** The SDK's built-in tools and models allows evaluating Metis performance, accuracy and power consumption in a few minutes.
- **Fast end-to-end integration path:** The SDK provides a high-level pipeline description framework that allows building optimized end-to-end AI applications with custom inputs, datasets, models and business logic with very few lines of code.
- **Low-level knobs and APIs:** For users that have their own pipelines and software infrastructure, the SDK includes low-level APIs to directly control the inference hardware.

Voyager is a simple yet feature rich SDK:

- Large Model Zoo supporting, among others:
  - Image classification (ResNet-50, SqueezeNet 1.0/1.1, MobileNetv2)
  - Object detection (SSD-MobileNet v1/v2, Yolo v3/v5/v7/v8, YoloX)
  - Pose Estimation – Yolov8-pose
  - Segmentation – Yolov8-seg
- Compiler support for models from Pytorch and ONNX. The compiler automatically manages quantization and graph optimization without user intervention and achieves optimal performance and accuracy.

PyTorch ONNX

- Libraries including all pre- and post-processing required to run end-to-end pipelines: scaling; cropping; normalization; format conversion; non-maximal suppression (NMS) and more.
- A YAML description file is used to automatically generate the AI pipelines. The pipeline can then be run as a plugin to GStreamer or within an inference server.
- Built-in tools to test accuracy and performance of models running on Metis AIPU.



SCAN ME

Ordering information

To order the Metis M.2 Eval System with Aetina RK3588 Industrial Motherboard, please visit: www.axelera.ai/metis-evaluation-kit

Part Number: AXE-SABAE010
Description: AETINA RK3588 Industrial Motherboard w/ M.2 using 1x Metis Omega chip M.2 card with 1 GB of memory. Rev1

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