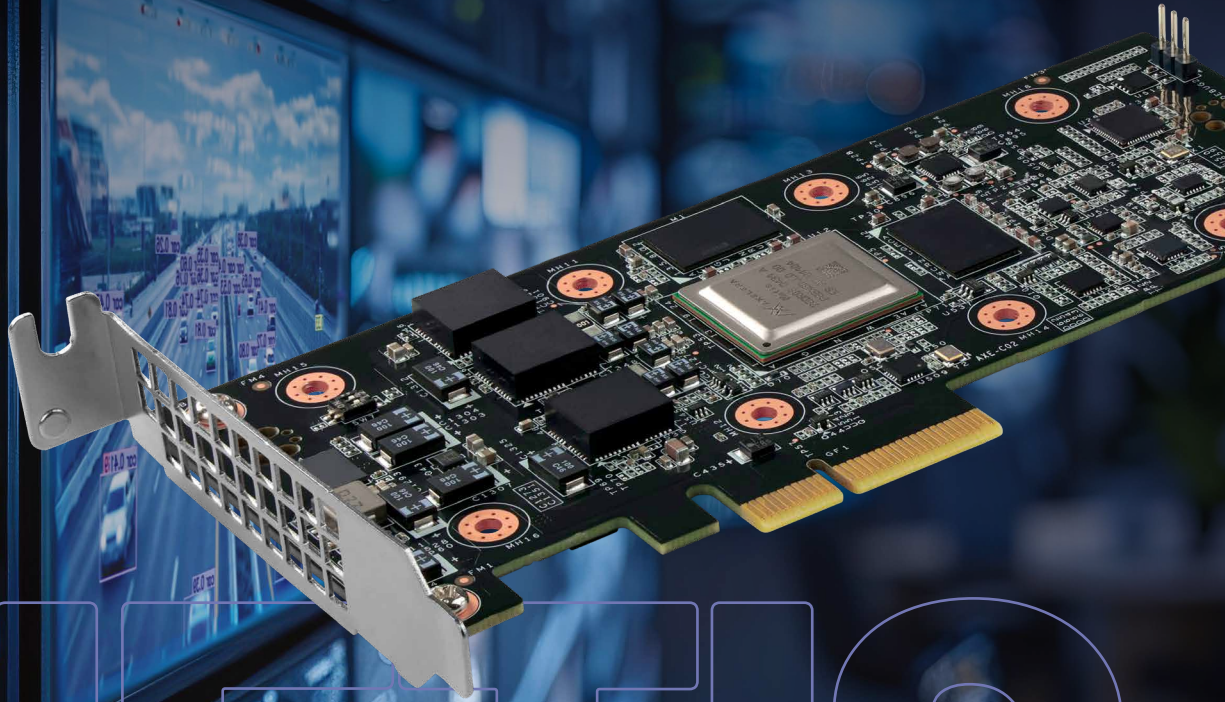


METIS® PCIe CARD

Unmatched Performance for
Edge AI applications



METIS



Security



Industry 4.0



Retail



Mobility



Logistics



Robotics



Medical



Hospitality



Utilities



Agritech



AXELERA®
ARTIFICIAL INTELLIGENCE

PROVEN IN KEY MARKETS

Companies in multiple market segments have already adopted Metis® PCIe-based AI acceleration. What are they using it for?

AXELERA® AI'S PCIE CARD, POWERED BY METIS AIPU, OFFERS THE HIGHEST PERFORMANCE INFERENCE ACCELERATION ON THE MARKET, COMBINING EASE OF USE, POWER EFFICIENCY, AND SCALABILITY.



Security: reduce the time to detect and resolve incidents (abandoned baggage, intrusion, fall) thanks to high resolution, high throughput processing of tens of camera feeds.



Industry 4.0: improve accuracy and speed in defect detection and quality control. Increase worker safety with automated PPE control.



Retail: improve operational efficiency and customer experience with in-store customer behavior, stock monitoring and automated checkout systems.



Mobility: real-time vehicle detection, identification and tracking from multiple traffic cameras to enhances tolling, enforcement and parking management.



Logistics: monitor the movement of goods and personnel to improve operational efficiency and safety of logistic centers by improving resource allocation and detecting safety hazards.

METIS® PCIE - KEY FEATURES

- The highest-performance AI-accelerator PCIe card in the market for edge AI applications. Powered by Metis AIPU.
- A single board can run inference on dozens of cameras as well as support multiple parallel neural networks.
- A wide range of end-to-end AI pipelines and models are available out of the box.
- Hassle free evaluation and software integration thanks to Voyager® SDK.
- Uncompromised prediction accuracy thanks to advanced quantization tools.

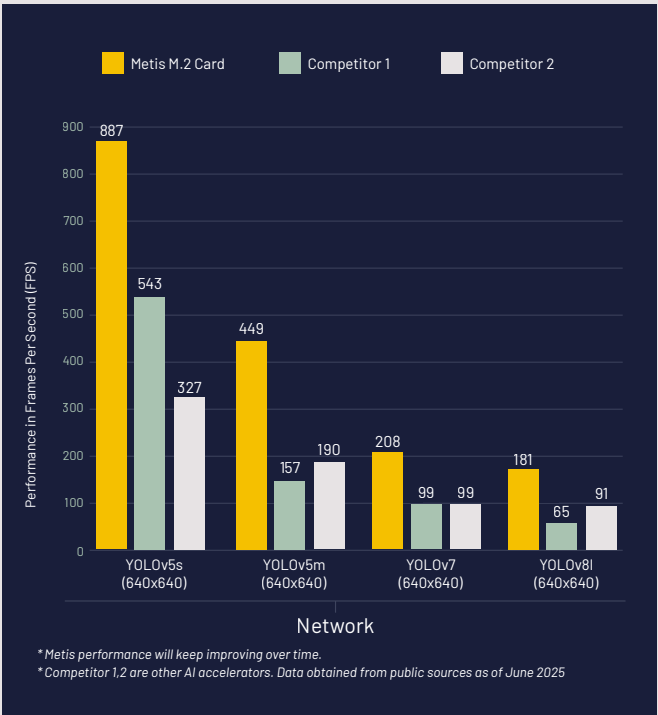
KEY TECHNICAL SPECIFICATIONS

Form Factor	PCIe single slot, HHHH (Half Height, Half Length)
Host Interface	PCIe Gen3 x4 – 4 GB/s bidirectional
AIPU (AI Processing Unit)	1x Metis AIPU
AIPU Memory	4 or 16 GB DRAM
Peak INT8 TOPS	214
Operating temperature	-20 to +70°C
Thermal solution	Active air cooling
Typical Application Power	8-15 W
Security Features	Secure Boot, Root of Trust

WORLD-CLASS PERFORMANCE

Metis outperforms other competing AI accelerators all while maintaining a superior power efficiency. At the same time, Metis meets much larger and expensive GPU performance while providing a massive efficiency boost.

PERFORMANCE BENCHMARK (FPS). HIGHER IS BETTER



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 making it easy for embedded developers to prototype AI applications.

VOYAGER^{SDK}

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

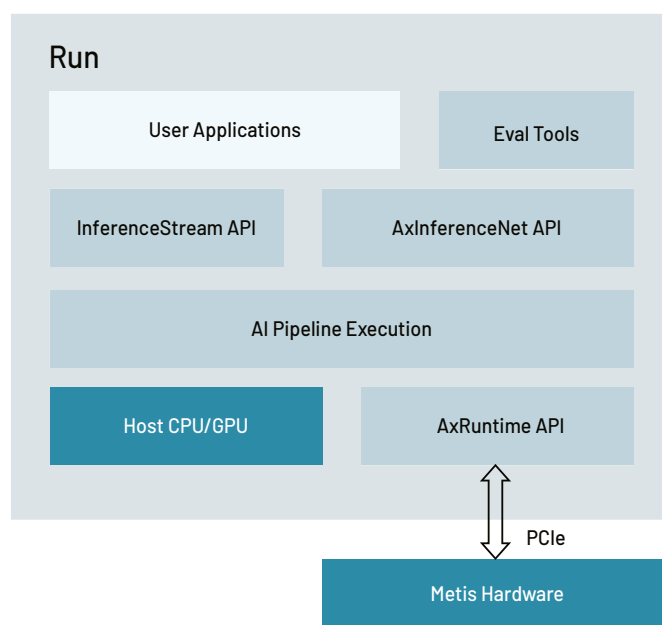
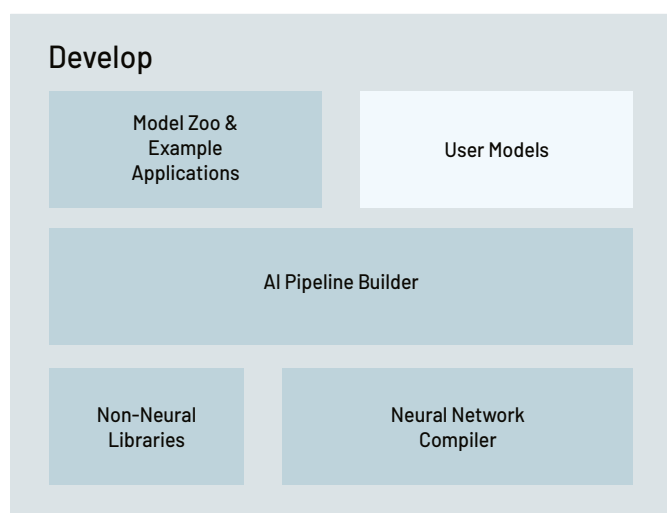
- **Great out-of-the-box experience:** The SDK's built-in tools and models allows evaluating Metis performance, accuracy and power consumption in a few minutes.
- **Fast end-to-end integration path:** The SDK provides a high-level pipeline description framework that allows building optimized end-to-end 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:
 - Small Language Models (Phi3-mini, Llama-3.1 8B etc.)
 - Image Classification (EfficientNet, ResNet etc.)
 - Object Detection (YOLO models, RetinaFace etc.)
 - Semantic Segmentation (U-Net FCN)
 - Instance Segmentation (YOLO models)
 - Keypoint Detection (YOLO models)
- 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.



- Libraries including all pre- and post-processing required to run end-to-end pipelines: scaling; cropping; normalization; format conversion; nonmaximal 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.



Ordering information

To order the PCIe AI Edge Accelerator Card, please visit:
<https://store.axelera.ai/products/>

Part Number: AXE-BME20P1AJ04A02

Description: Metis AI Accelerator PCIe Card with 1x AIPU, 4 GB of RAM and active cooling, Rev1.1

Part Number: AXE-BME20P1AE16A02

Description: Metis AI Accelerator PCIe Card with 1x AIPU, 16 GB of RAM and active cooling, Rev1.1

