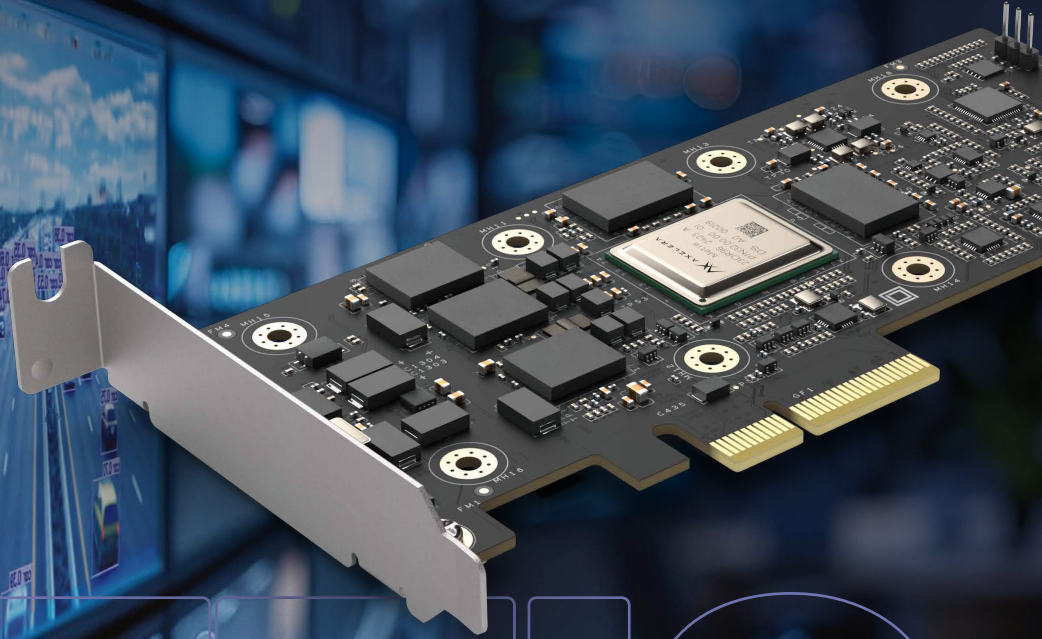


# METIS PCIe CARD

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.



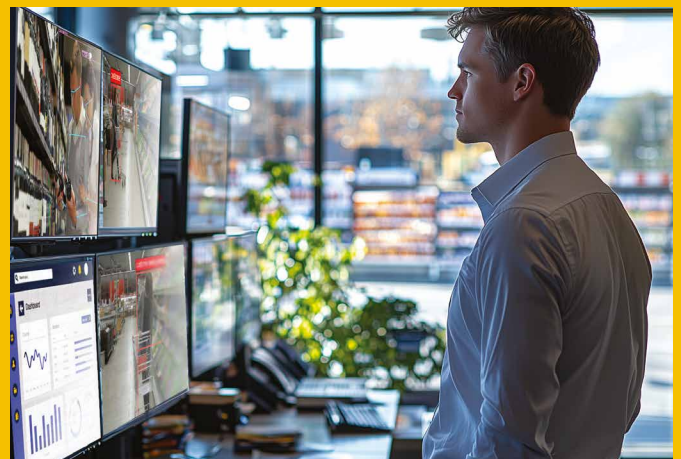
**Security:** reduce the time to detect and resolve incidents (abandoned baggage, intrusion, fall) thanks to high resolution, high throughput processing of tens of camera feeds.



**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 SW integration thanks to Voyager SDK.
- Uncompromised prediction accuracy thanks to advanced quantization tools.

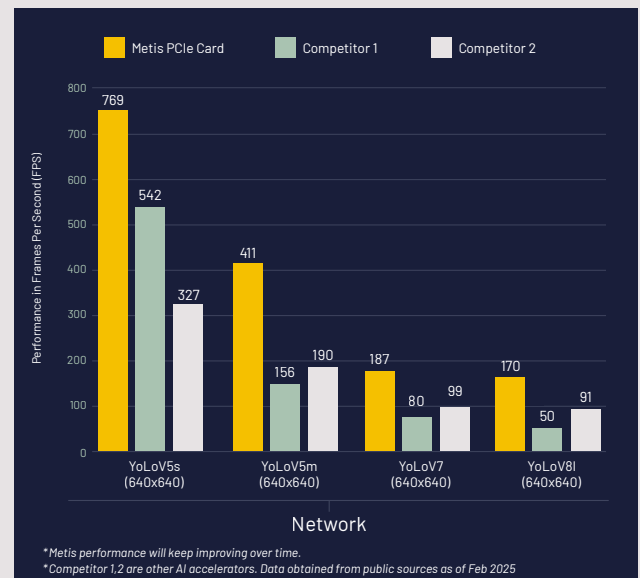
## KEY TECHNICAL SPECIFICATIONS

Form Factor	PCIe single slot, HHHL (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

Metis PCIe card 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<sub>SDK</sub>

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

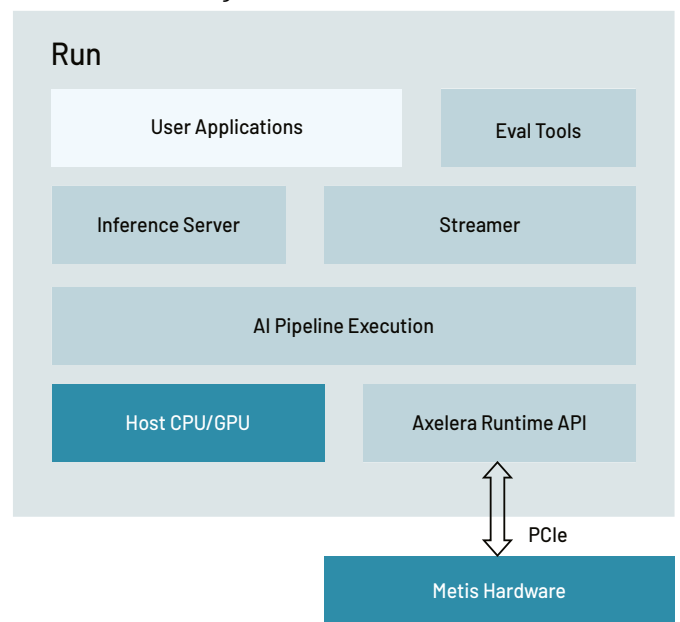
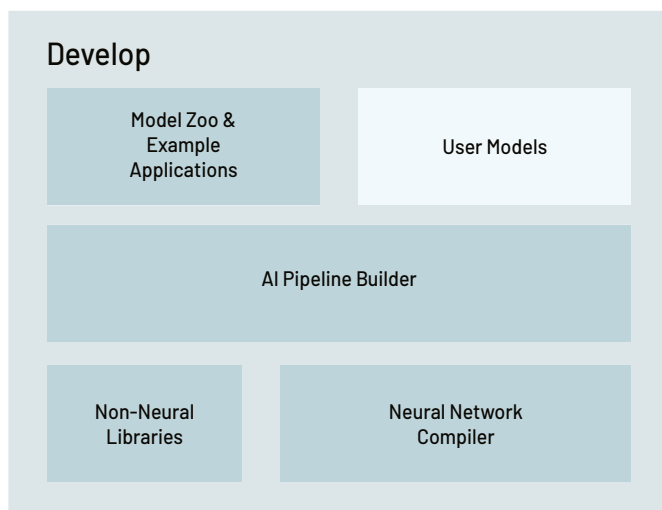
- **Great out-of-the-box experience:** The SDK's built-in tools and models allow evaluating Metis performance, accuracy and power consumption in a few minutes.
- **Fast end-to-end integration path:** The SDK provides a high-level pipeline description framework that allows building optimized end-to-end 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, MobileNetv2/v4),
  - Object detection (MobileNetv2/v4-SSD, Yolov5/v5/v6/v7/v8/v9),
  - Segmentation (DeepLabv3, Yolov8-seg, U-net),
  - Pose estimation (Yolov8-pose)
- 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; non-maximal suppression (NMS) and more.
- The Voyager SDK allows you to develop inferencing pipelines and end-user applications at different levels of abstraction. It also includes plugins to integrate within a GStreamer pipeline.
- Built-in tools to test accuracy and performance of models running on Metis AIPU.



### Ordering information

To order the PCIe AI Edge Accelerator Module, 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



**AXELERA**  
ARTIFICIAL INTELLIGENCE