

# Metis PCIe x86 Evaluation Kit



Empower your edge applications with State-of-the-Art AI acceleration capabilities.

The Axelera PCIe x86 Evaluation Kit powered by the Metis AI Processing Unit provides swift processing and exceptional accuracy for CNN-based Computer Vision applications such as multi-channel video analytics, quality inspection, and people monitoring. Supplied as the Lenovo ThinkStation P360 ULTRA, and preloaded with State-of-the-Art detection and classification neural networks, including YOLOv5 and YOLOv7, it delivers top performance at a fraction of the cost and power consumption of traditional GPU-based solutions making it a comprehensive solution for evaluating Edge AI.

The included Voyager SDK radically simplifies AI deployment in edge devices and ensures end-to-end integration and API compatibility with industry standards, specifically tailored for computer vision.

Developers can utilize a high-level declarative language (YAML) to design application pipelines, which include neural networks, preprocessing, and advanced image operations. The SDK manages model and dataset integration, pipeline compilation, optimization, and deployment while efficiently utilizing the host processor.

Additionally, the SDK enables flexible integration of pipelines (like GStreamer) into inference services, offering scalable solutions that span from single to multiple stream and multi-model processing.

## Key Features

- ✓ Axelera Metis PCIe AI high-performance card
- ✓ Axelera Voyager Software Development Kit (SDK) for AI application deployment
- ✓ Out-of-the-box YOLOv5 and YOLOv7 with unmatched throughput and accuracy
- ✓ Up to 16 channels of FHD@30 fps processing
- ✓ Integrated with Lenovo ThinkStation P360 ULTRA

# Technical Specifications

## Axelera Metis AIPU PCIe card

AI Processing Unit (AIPU)	Memory	PCIe	Size
Quad AI cores with Axelera Digital In-Memory-Computing (D-IMC)	1GB LPDDR4x	PCIe 3.0 (x4)	FHHL (full height, half length), Single slot 168mm x 64mm x 40mm

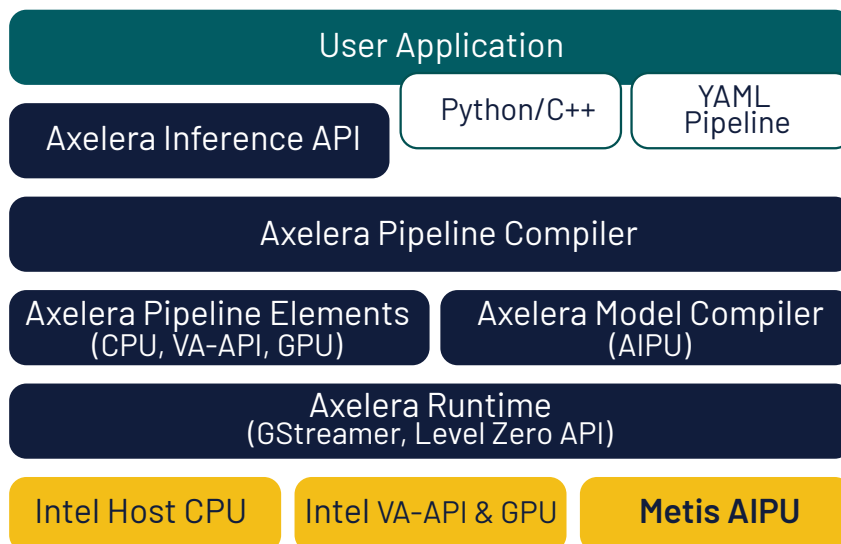
## Intel x86 platform

Lenovo	ThinkStation P360 ULTRA with Intel Core i5-12500 / 32GB RAM DDR5 4800MHz
Operating System	Linux Ubuntu 22.04
Storage	M.2 1TB
PCIe	Gen 4 PCIe x16 slot - Full Length Gen 3 PCIe x8 slot (4x lanes - Metis PCIe) - Half Length

For more information, please visit: <https://pcsupport.lenovo.com/us/en/products/workstations/>

## VOYAGER<sup>SDK</sup>

Machine Learning Framework	PyTorch / ONNX / TensorFlow (via ONNX)
Neural Network Support	YOLOv5s / YOLOv5m / YOLOv5l / YOLOv7 / ResNet-50 / MobileNetV2 / SSD-MobileNetV2 / and more



Voyager SDK Software Stack

The Voyager SDK provides a full-stack, end-to-end AI solution built on common ML frameworks and powerful tools. Application logic and model development can proceed together, using separate Python/C++ source and YAML pipeline config files, combined at runtime using the Axelera Inference API. To simplify user evaluations, Voyager SDK ships with a collection of YAML reference pipelines for popular models.

**Ordering information:**

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