

Metis M.2

ARM Evaluation Kit



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

The Axelera M.2 evaluation kit, powered by the Metis AIPU and Aetina ARM (RK3588) single board computer, provides swift processing and exceptional accuracy for CNN-based Computer Vision applications. Preloaded with detection and classification neural networks, it serves as an optimal solution for evaluating embedded AI.

Included in the kit is the Voyager SDK, a crucial component of the Metis AI platform. This SDK 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 pipeline compilation, quantization, optimization, and deployment while efficiently utilizing the host processor.

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

Key Features Highlights

- ✓ Axelera Metis M.2 AI high-performance card
- ✓ Axelera Voyager Software Development Kit (SDK) for AI application deployment
- ✓ Out-of-the-box support for multiple Neural Networks trained with standard Machine Learning frameworks
- ✓ Unmatched throughput and precision with industry-leading fps and accuracy loss versus FP32
- ✓ Octal 64-bit ARM Rockchip RK3588 motherboard
- ✓ Decoding up to 32 x 1080p30 H.265/HEVC channels
- ✓ Low power embedded system

Technical Specifications

Axelera Metis AIPU M.2 module

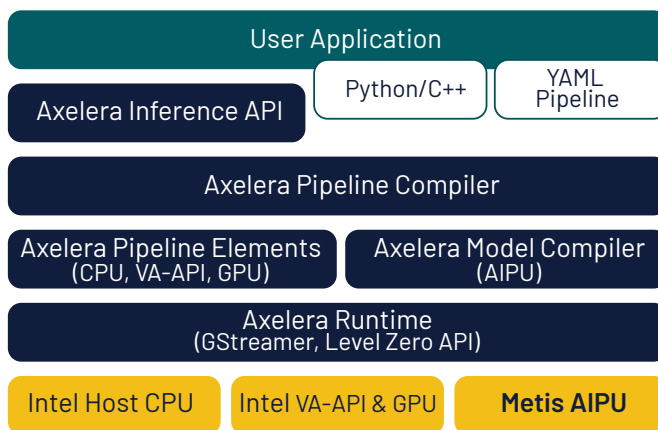
AI Processing Unit (AIPU)	Memory	PCIe	Size
Quad AI cores with Axelera Digital In-Memory-Computing (D-IMC)	512MB LPDDR4x	PCIe 3.0 (x4)	M.2 2280 M-key - 22 x 80mm (0.87 x 3.15 inches)

MotherBoard : Aetina Single Board Computer with Rockchip RK3588

CPU	8-core 64-bit ARM (4 × Cortex-A76 + 4 × Cortex-A55), frequency up to 2.4GHz
GPU	ARM Mali-G610 MP4 quad-core GPU
Ethernet	2 × GbE (2 x RJ45)
USB	1 × USB-C (USB3.0 / DP1.4) / 1 × USB3.2 / 1 × USB2.0 (Type A)
COM	1 x header for RS-232 (TXD/RXD/CTS/RTS) and RS-485
Power	DC-in 12V / DC Jack 4pin
Operating System	Linux: Ubuntu Desktop 20.04 with Voyager SDK in a docker platform
Size	131 × 120 mm (5.16" x 4.72")
Temperature	Operating Temperature: 0 - 60 C (+32F +158F) Storage Temperature : -40 + 85C (-40F +185F)
Power Consumption	20W typical total system (incl. Metis M.2 module)
Accessories included	Desktop power supply, HDMI 2.1 video cable, USB-C cable, SATA power cable, SATA3.0 cable, FC10 to 089 cable, IPEX1 antenna cable, SDB antenna, heatsink (for METIS M.2)

VOYAGER^{SK}

Machine Learning Framework	PyTorch / ONNX / TensorFlow (via ONNX)
Neural Network Support	YOLOv5s/m/l, YOLOv7, Yolo v8s/m/l / 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:

Please visit:
www.axelera.ai/metis-evaluation-kit

Get in touch!
axelera.ai

