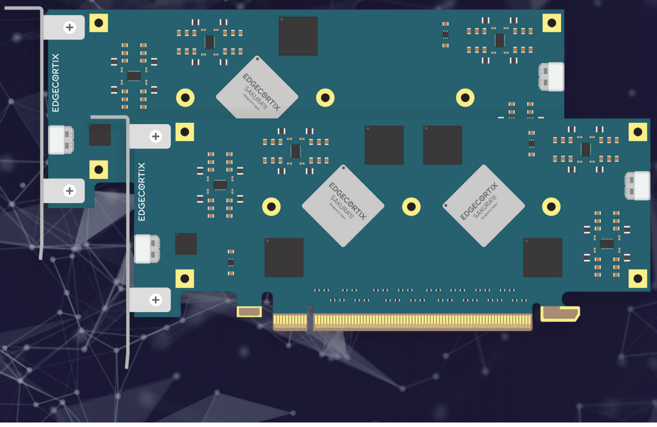
EDGECORTIX®

SAKURA™-II PCIe Cards

Energy-Efficient Edge AI:
Vision to Generative AI



High Performance PCIe Form Factor for Edge AI Inferencing

SAKURA-II PCIe Cards are high-performance, up to 120 TOPS, edge AI accelerator solutions architected to run the latest vision and Generative AI models with market-leading energy efficiency and low latency.

EdgeCortix's MERA compiler and software framework provides a robust platform for deploying the latest AI inference models quickly and easily, in an application agnostic manner.

Key Benefits

Optimized for Generative AI: Supports multi-billion parameter Generative AI models like Llama 2, Stable Diffusion, DETR, and ViT within a typical power envelope of 10W or 20W

Efficient AI Compute: Achieves more than 2x the AI compute utilization of other solutions, resulting in exceptional energy efficiency

Enhanced Memory Bandwidth: Up to 4x more DRAM bandwidth than competing AI accelerators, ensuring superior performance for LLMs and LVMs

Large DRAM Capacity: Up to 32GB of DRAM, enabling efficient processing of complex vision and Generative AI workloads

Real-Time Data Streaming: Optimized for low-latency operations with Batch=1

Arbitrary Activation Function Support: Hardware-accelerated approximation provides enhanced adaptability

Advanced Precision: Software-enabled mixed-precision provides near FP32 accuracy

Efficient Data Handling: Integrated tensor reshaper engine minimizes host CPU load

Sparse Computation: Reduces memory footprint and optimizes DRAM bandwidth

Power Management: Advanced power management enables ultra-high efficiency modes

Low Profile PCIe Cards: Best choice high performance edge AI servers and appliances

Technical Specifications

Form Factor
Low profile, single slot PCIe (x16)

Temp Range
-20C to 85C

DRAM Bandwidth
68 GB/sec

SINGLE SAKURA-II

Performance[1]
60 TOPS (INT8)
30 TFLOPS (BF16)

Power
10W (typical)

Interface
PCI Gen 3.0 x8

Onboard DRAM
16GB (2 banks of 8GB LPDDR4)

DUAL SAKURA-II

Performance[1]
120 TOPS (INT8)
60 TFLOPS (BF16)

Power
20W (typical)

Interface
PCI Gen 3.0 x8/x8
(bifurcated)

Onboard DRAM
32GB (4 banks of 8GB LPDDR4)

Note: 1. High utilization TOPS

Fast and Easy Model Porting and System Integration

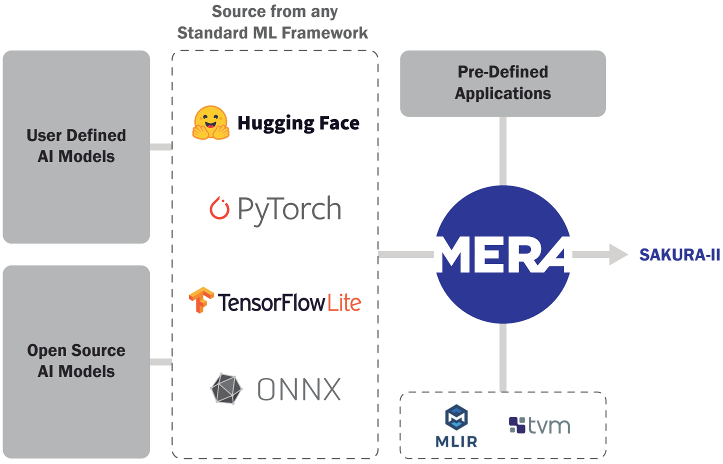
MERA provides the entire stack for edge AI inferencing from modeling to deployment with familiar neural network model workflows and supports easy integration with existing systems, reducing time-to-market.

MERA Tools

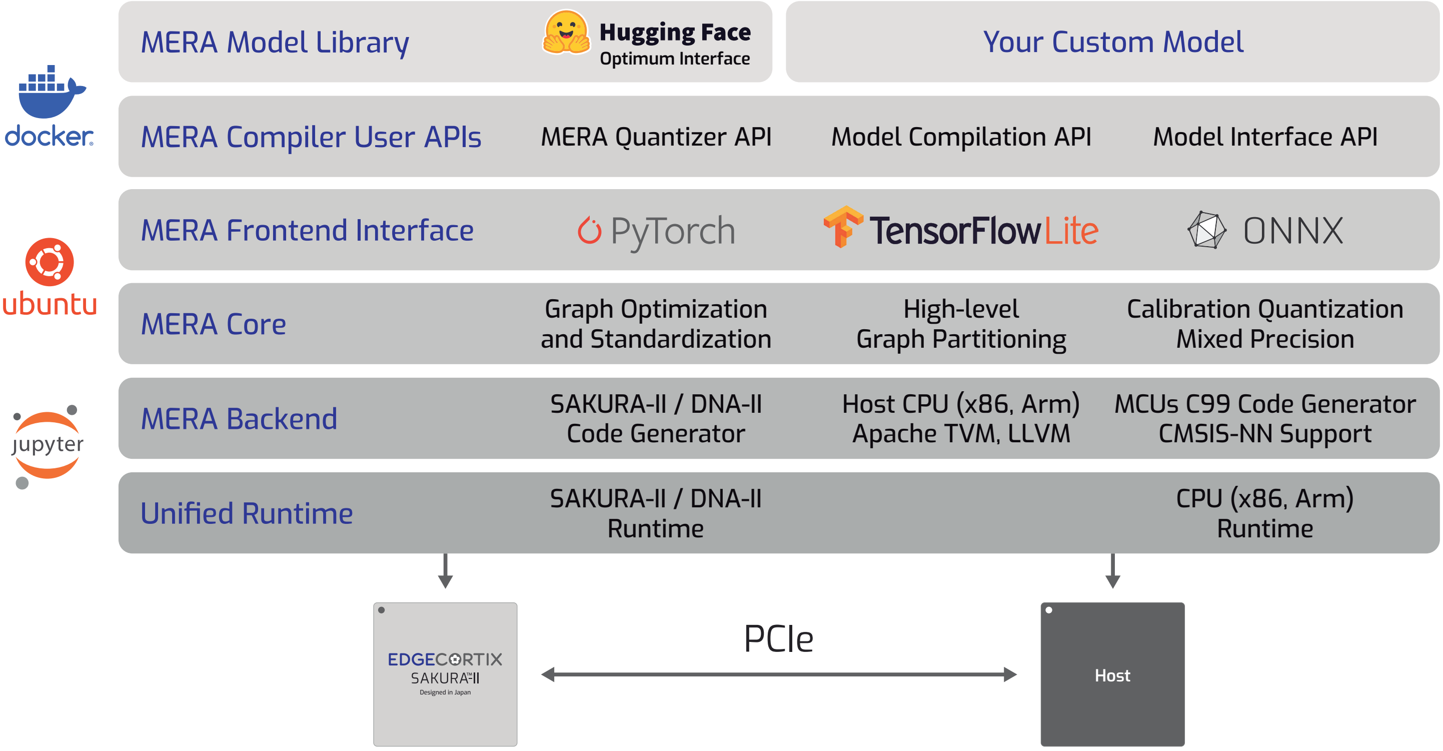
- Source models using Hugging Face, PyTorch, TensorFlow Lite, or ONNX
- Integrate and customize design using Python or C++
- MERA front end is open sourced with support for Apache TVM and MLIR

Model Resources

- Model Zoo: Pre-trained, optimized AI inference models
- Support for popular Generative AI models, including Llama-2, Stable Diffusion, Whisper, DETR, DistillBert, DINO and ViT
- Post training model calibration and quantization



MERA Compiler and Software Framework



docker
ubuntu
jupyter
MERA Model Library
Hugging Face Optimum Interface
Your Custom Model
MERA Compiler User APIs
MERA Quantizer API
Model Compilation API
Model Interface API
MERA Frontend Interface
PyTorch
TensorFlow Lite
ONNX
MERA Core
Graph Optimization and Standardization
High-level Graph Partitioning
Calibration Quantization Mixed Precision
MERA Backend
SAKURA-II / DNA-II Code Generator
Host CPU (x86, Arm) Apache TVM, LLVM
MCUs C99 Code Generator CMSIS-NN Support
Unified Runtime
SAKURA-II / DNA-II Runtime
CPU (x86, Arm) Runtime
EDGECORTIX SAKURA-II Designed in Japan
PCIe
Host

Pre-Order a PCIe Card and Get Started!

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