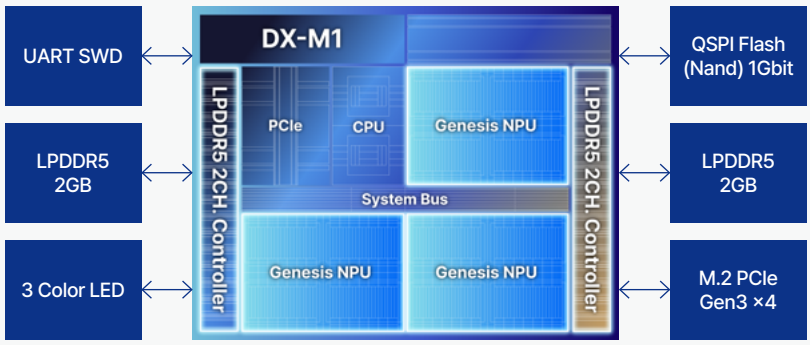
DX-M1 M.2 Module

Intelligence liberated — powerful, efficient, and universal at the edge

Type: AI Accelerator **Performance: 25 TOPS / 1~5W**

Functional Block Diagram



Specifications

Features	Details
AI Performance	25 TOPS (INT8)
Host Interface	PCIe Gen3 ×4 (Supports Gen 1/2/3 & x1/x2/x4)
Memory	4GB LPDDR5 (5600 MT/s)
Power Consumption	1W (min) ~ 5W (max)
Operating Temperature	-40 ~ 85°C
Thermal Solution	Heatsink (Option)
Form Factor	M.2 2280(M Key), 22 × 80mm
OS Support	Windows 11/10
	Debian-based Linux (Ubuntu 24.04/22.04/20.04 LTS)
	Yocto Project
	Docker
AI Frameworks	Ultralytics, TensorFlow, PyTorch, ONNX, Keras
System Support	x86, ARM Based Architecture

Overview

The DX-M1 M.2 is more than silicon, it is the declaration that intelligence belongs everywhere, not just in the cloud. At only **1–5W, it delivers the force of 200 GPU-class TOPS**, transforming the edge from a passive receiver into an active decision-maker. at just 1-5W through breakthrough efficiency design.

Through its innovative memory design, DX-M1 allows **multiple AI models to work side** by side, not as a luxury but as a new standard. What once demanded costly, power-hungry systems is now within reach of **every device, every factory, every city.**

Target Applications

- Edge Cameras Systems
- Smart Mobility
- Smart Factory
- Smart Cities
- Robotics
- Drones
- Edge Computing
- Smart Homes
- Smart Retail

DEEPX

Key Benefits

Superior Thermal Management

Maintains high performance while staying safely within industrial temperature range (-25°C to 85°C), making it uniquely suitable for real-world applications where competing solutions fail due to overheating.

Exceptional Performance Efficiency

Delivers around 20x power performance efficiency compared to GPGPUs and outperforms competitors by more than 2x, ensuring on-device systems can maintain high-level AI capabilities without compromise.

GPU-Level AI Accuracy

Achieves GPU-level AI accuracy using quantized Int-8 precision instead of power-hungry FP32, ensuring reliable on-device intelligence that meets industry standards of less than 1% accuracy drop.

Industry-Leading TCO

Even if competitors offered their chips for free, the DX-M1 would still be more economical. Lower power consumption translates to dramatically reduced operational costs, making advanced AI economically feasible at scale.

Performance

Real-world AI inference FPS(Frames Per Second) benchmarks comparing DEEPX with leading competitors

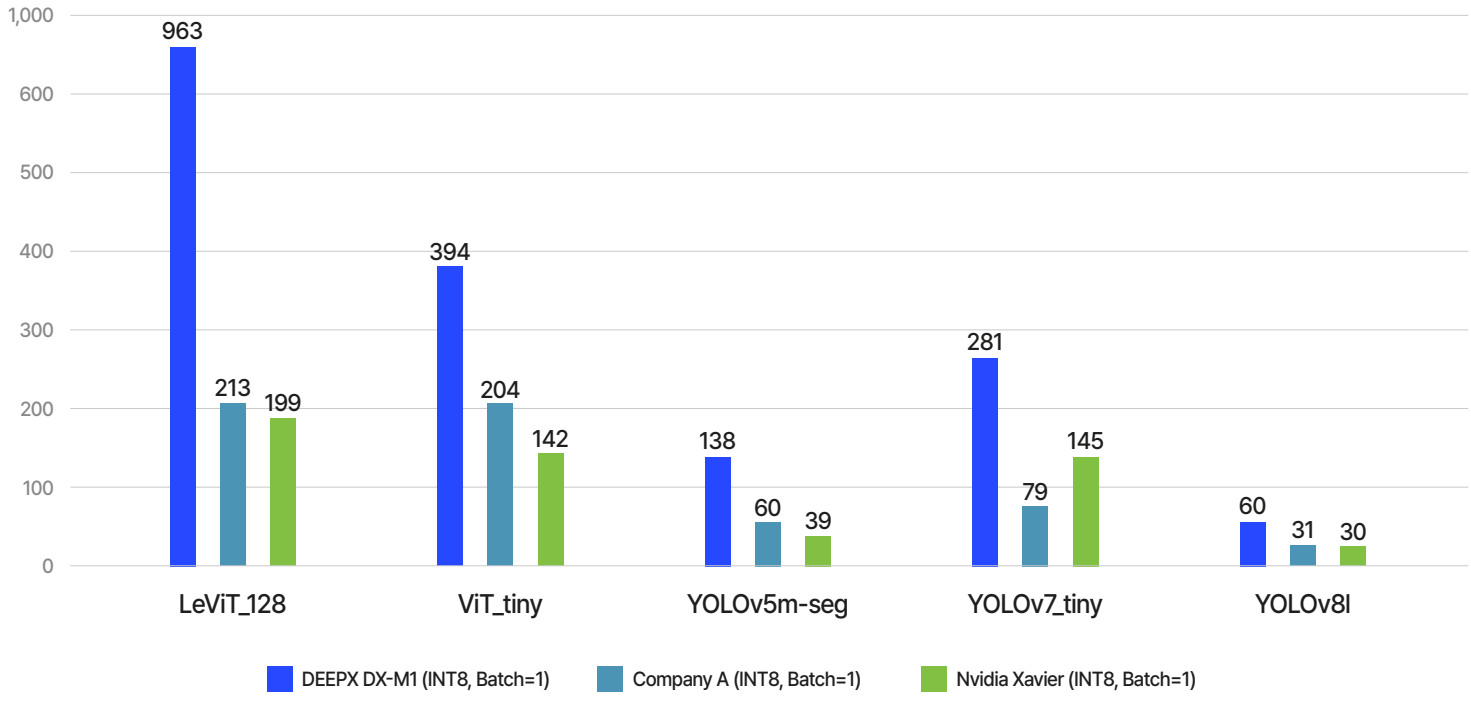
*This graph shows the benchmark results for Batch=1, all tested under the same conditions.

*Xavier measured on Jetson AGX kit (room temp) using INT8 and 'no batch' (BS=1), per NVIDIA recommendations..

*Company A results used the optimize option of "random-calib-set" with default values for the parser and compiler.

*DEEPX DX-M1 numbers are based on the SDK (September 2025), DX-Compiler v.2.0.0, and DX-RT v.3.0.0.

*Company A and DX-M1 were measured at room temperature on a single device through a PCIe interface on an x86 Host PC (Intel® Core™ i7-14700K CPU @ 5.6GHz).



ultralytics

DEEPX x Ultralytics YOLO26: Powering Physical AI Together

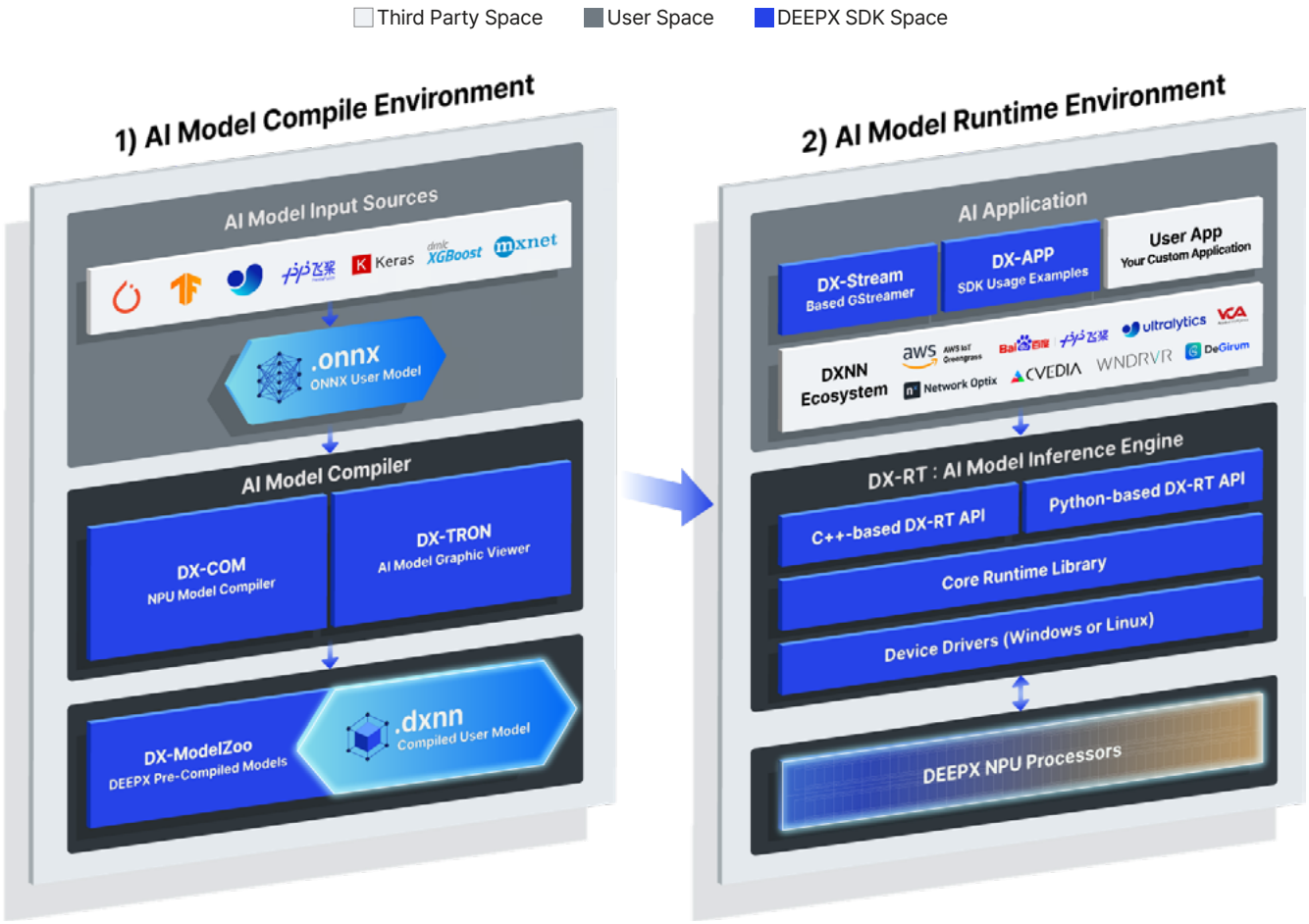
"As a key partner of the Open-Source Physical AI Alliance, DEEPX provides first-class support for YOLO26, enabling real-time intelligence for robots and smart cities."

Learn more

DXNN® - DEEPX SW Development Kit

DXNN® (DEEPX Neural Network) SDK streamlines the AI deployment pipeline on DEEPX NPUs. By integrating essential tools for compilation, optimization, simulation, and inference, it ensures high development efficiency. Experience a ready-to-use development environment with DX-AS (All Suite), a fully integrated and version-aligned package designed for rapid scaling.

DXNN SDK Full Stack Architecture



1) AI Model Compile Environment

Optimizes models from various sources into DEEPX-specific .dxnn formats via the ONNX framework.

2) AI Model Runtime Environment

Deploys optimized models onto hardware via DX-Stream and DX-RT engines using C++ or Python APIs.

DX-AllSuite

DX-AllSuite: The Single Package for Your Complete DXNN Environment. Simplify setup, installation, and updates across local machines and Docker.

Step 1
Supported Environments

- DEEPX Developers — Learn more
- GitHub — Learn more
- aws AWS IoT Greengrass

Step 2
Auto Install & Update

DX-AllSuite

Step 3
Finalize & Start Development

- Docker Install
- Local Install

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