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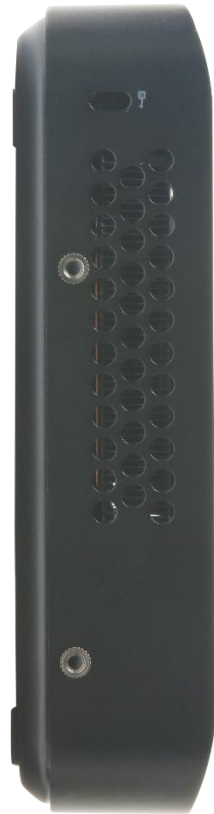
Embedded Edge AI Computer Product Introduction

Project code: FB481
PRO3 team | July 09, 2026

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Product Outlook

0.83 Litre



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Highlight Features



Introducing the new series of x86 Edge AI Box powered by Intel Core Ultra 5 (Series 2) Processor and DeepX DX-M1 AI accelerator.

- Built-in M.2 2280 Key-M PCIe x4 slot supports optional M.2 AI accelerator module, DeepX DX-M1 with 25 TOPS.
- Integrated Intel Arc GPU support dual display output of 4K@60fps H.265/VP9 video decoding and encoding.
- Rugged, actively-cooled industrial-grade metal case.
- Support multiple deep learning frameworks: OpenVINO, WindowsML, ONNX RT, DirectML, WebNN by CPU.
- Support DeepX DXNN software development kit
- Suitable for Edge AI applications such as multi-camera object detection, safety, and security monitoring.

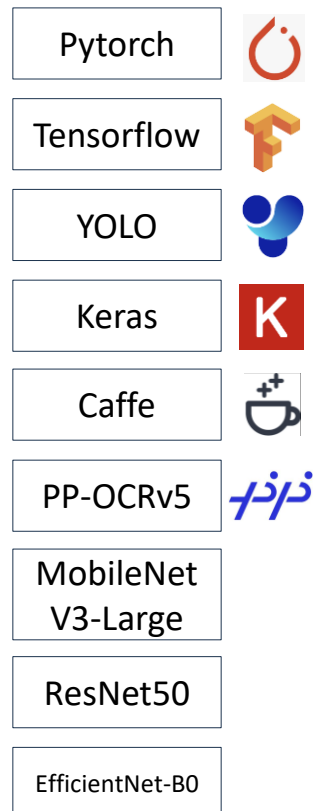
Specification

Processor	Intel Core Ultra 5 Processor 225H (14-core running up to 4.9GHz, 18MB cache) with Embedded option
Integrated GPU	Intel Arc Graphics, running up to 2.2GHz with Intel Deep Learning Boost (Intel DL Boost)
Integrated NPU	Intel AI Boost, 13 Peak TOPS (INT8)
NPU Module	DeepX DX-M1 M.2 NPU module, 25 TOPS (INT8)
System memory	2 x DDR5-6400 SO-DIMM Slot (up to 96GB)
OS Storage	1 x M.2 NVMe PCIe 4.0 x4 SSD slot (2230/2240)
Video-out	1 x HDMI 2.0, 1 x DisplayPort 1.4 output
Hi-Speed IO	5 x USB 3.2 Type-A, 1 x USB 3.2 Type-C
Networking	Gigabit Ethernet Intel Wi-Fi 6, Bluetooth 5.2
Audio interface	Analog audio 3.5mm CTIA combo jack
Battery	CR2032 220mAh coin battery for CMOS backup
Dimension	148.8(W) x 148.8(D) x 37.6(H) mm ³ , 0.83 Litre
Op. Temperature	-20°C ~ +40°C
Power Input	DC 19V, 65W
OS	Support Windows 11, Ubuntu Linux
Software Stack	OpenVINO, WindowsML, DirectML, ONNX RT, WebGPU by CPU. DXNN by DeepX NPU

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DEEPX DXNN SDK introduction

Frameworks & Models



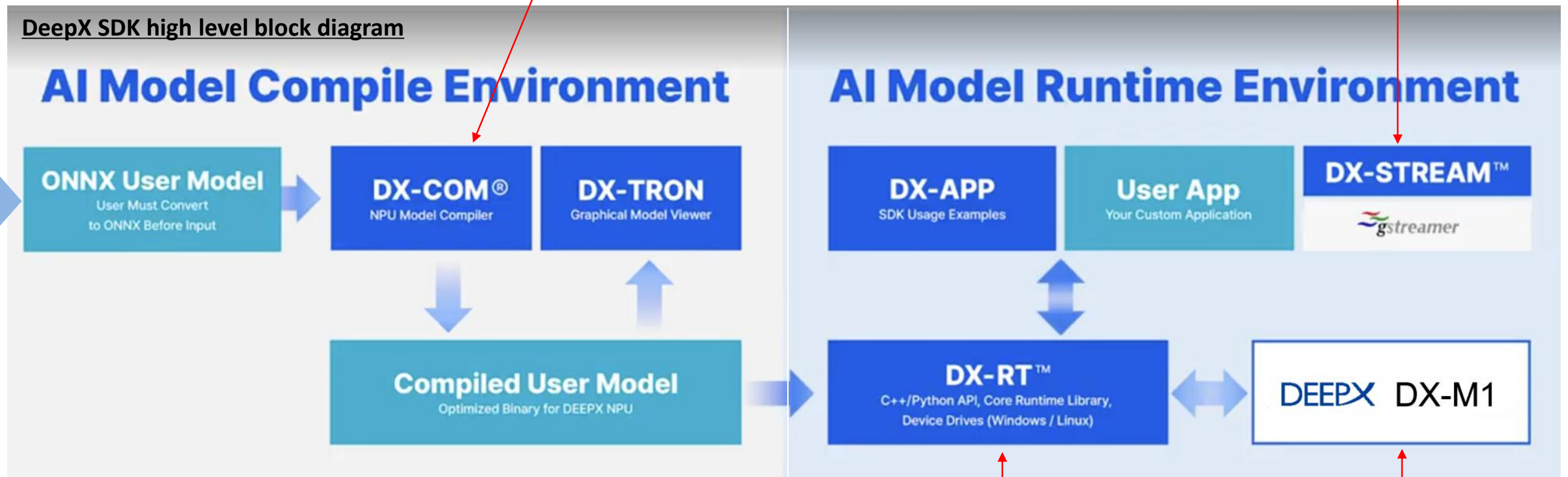
DX-Compiler:

Support x86_64 hardware only.
Debian-based Linux environment
such as Ubuntu 20.04, 22.04, 24.04

DX-Stream:

A set of GStreamer and sample
programs for controlling the NPU
within multimedia pipelines.

DeepX SDK high level block diagram



DXNN SDK: <https://deepx.ai/products/dxnn-sdk>

DX-ALL-Suite repository: <https://github.com/DEEPX-AI>

V2.2.1 supports YOLO(v3 ~ v26)

DX-Runtime:

Support ARM64, x86_64 hardware.
Debian-based Linux environment
such as Ubuntu 20.04, 22.04, 24.04



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Application Demo: Video-Based Fire Detection (VBFD)

Key use cases: Multi-camera fire detection in manufacturing facilities, warehouses, Outdoor storage, wildfire & forest surveillance, construction sites, data centers & energy stations, transportation infrastructure.



AI-powered visual detection of fire accidents offers a proactive approach to fire safety, providing significant advantages over traditional sensors by utilizing computer vision to analyze live video feeds for early signs of smoke and flames, integrating with existing traditional CCTV infrastructure.

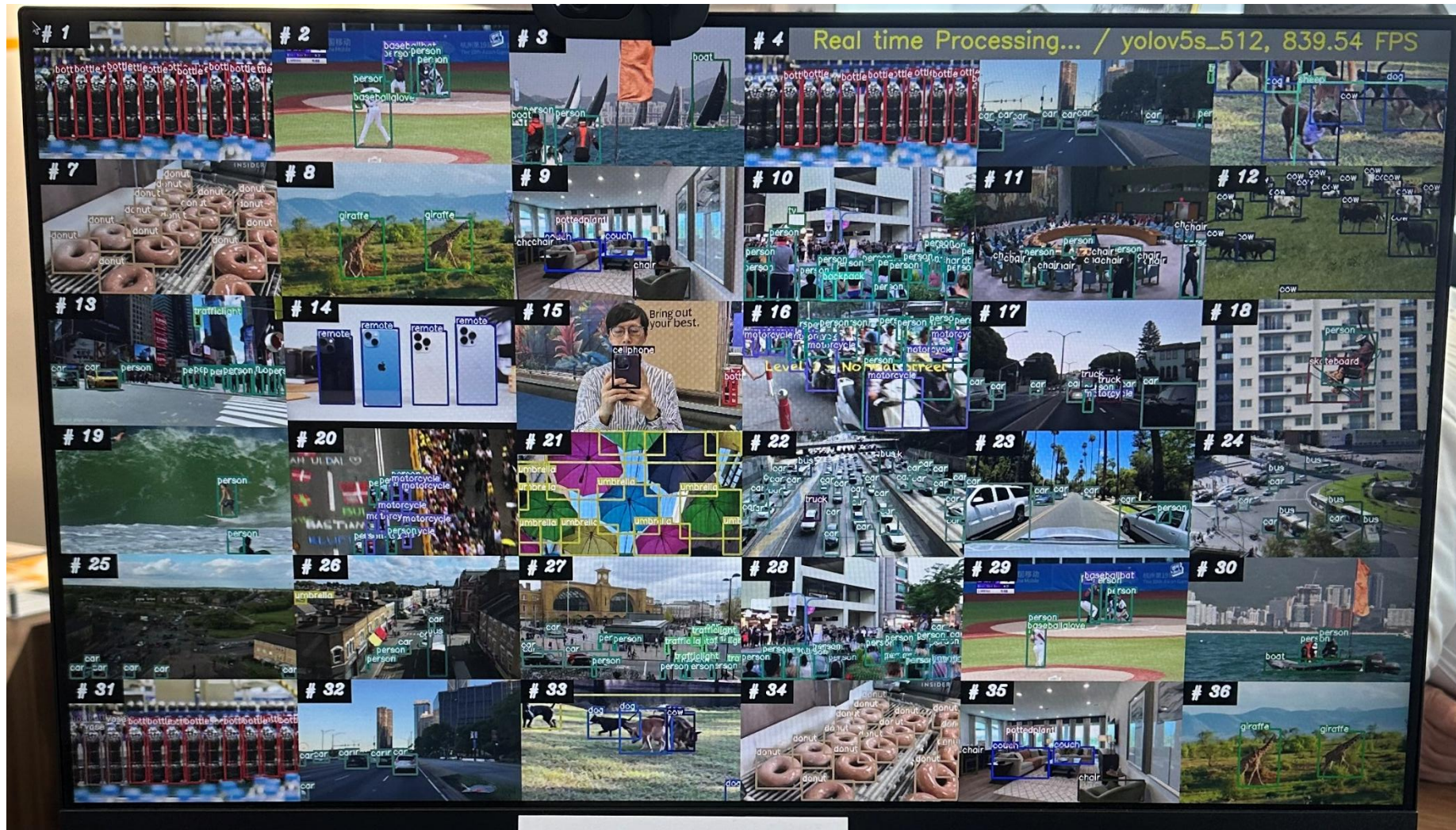
This technology is transforming fire safety by offering faster detection, higher accuracy, and reduced false alarms, particularly in challenging environments.

Features	AI Video Analytics	Traditional fire detector
Detection Speed	1–30 seconds (fast)	3–6+ minutes (slow)
Detection Basis	Visual confirmation (smoke/flame)	Heat/smoke reaches sensor
Coverage	Large, open, or high-ceiling areas	Limited to specific zones
False Alarms	Very low	High (dust, steam, cooking)
Information	Real-time video/exact location	Basic alert

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Application Demo: Multi-channel real-time object detection, pose estimation, face recognition

Use cases: Multi-camera analytics for surveillance, inspection, smart buildings



The hardware platform demonstrates high-performance, real-time computer vision capabilities – Multi channel processing of object detection model YOLOv5 and YOLOv7.

Key features:

- Ability to handle multiple video streams simultaneously, with testing conducted on 25 video streams using a single 25-TOPS DX-M1 AI accelerator.
- High efficiency: The DX-M1 runs these models consuming only 2W ~ 5W power.
- Ability to handle high-resolution, multi-channel inputs - demonstrations also show YOLOv7 running at over 147 FPS (640x640) with 50.9% mAP (mean Average Precision)
- Multi-Model Operations: The DX-M1 supports running multiple AI models at once, such as running YOLOv5 for object detection alongside other models (e.g., DDRnet for segmentation) in a single demo.

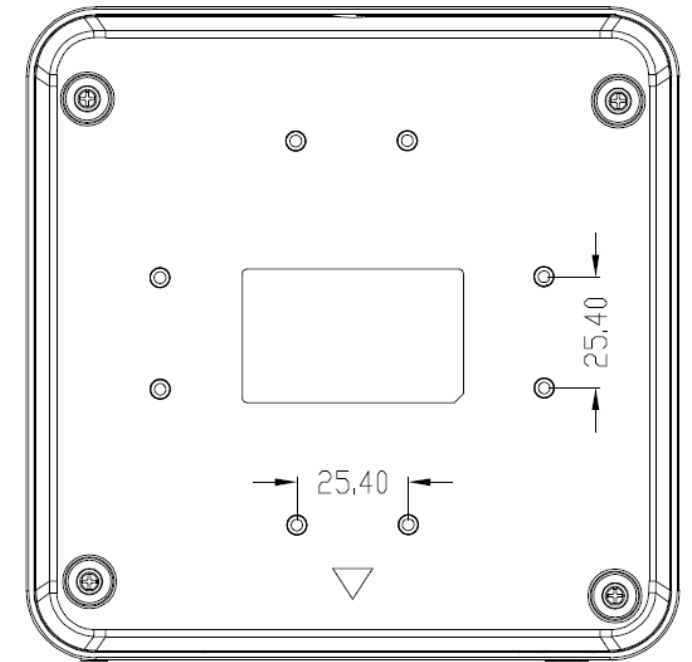
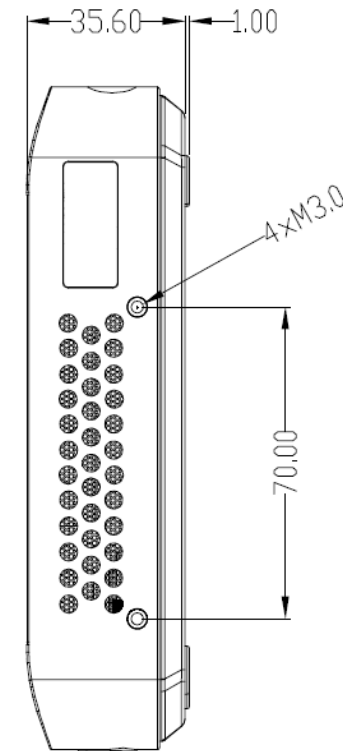
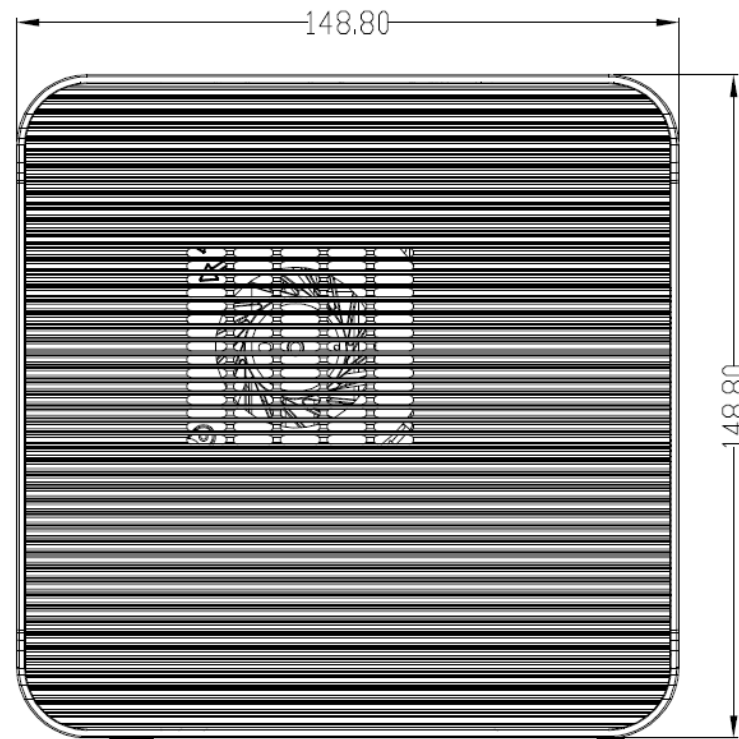
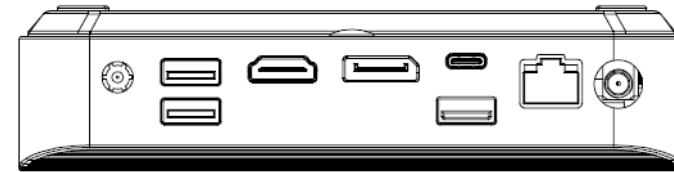
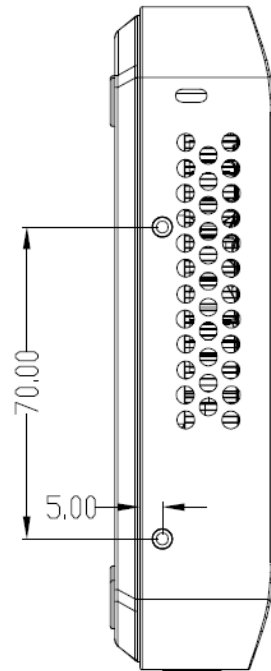
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Internal View



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Mechanical Drawing



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Product model name & Configurations

Base model	CPU	Memory	Primary M.2	Secondary M.2	Wireless	AC adapter	AC plug
EMB-MI652	Core Ultra 5 Processor 225H	Not installed	Not installed	Not installed	Not installed	None	None
	Core Ultra 7 Processor 255H	16GB DDR5 SODIMM	128GB M.2 2230/2240 NVMe	256GB M.2 2280 NVMe	Wi-Fi 6, BT 5.2	DC19V/65W	US
		32GB DDR5 SODIMM	256GB M.2 2230/2240 NVMe	512GB M.2 2280 NVMe			EU
		64GB DDR5 SODIMM	512GB M.2 2230/2240 NVMe	1TB M.2 2280 NVMe			UK
		96GB DDR5 SODIMM	1TB M.2 2230/2240 NVMe	2TB M.2 2280 NVMe			JP
							AUS
Base model	CPU	Memory	Storage	NPU module	Wireless	AC adapter	AC plug
EMB-MI652DX	Core Ultra 5 Processor 225H	Not installed	Not installed	DeepX DX-M1	Not installed	None	None
	Core Ultra 7 Processor 255H	16GB DDR5 SODIMM	128GB M.2 2230/2240 NVMe	DeepX DX-M1M	Wi-Fi 6, BT 5.2	DC19V/65W	US
		32GB DDR5 SODIMM	256GB M.2 2230/2240 NVMe				EU
		64GB DDR5 SODIMM	512GB M.2 2230/2240 NVMe				UK
		96GB DDR5 SODIMM	1TB M.2 2230/2240 NVMe				JP
							AUS

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