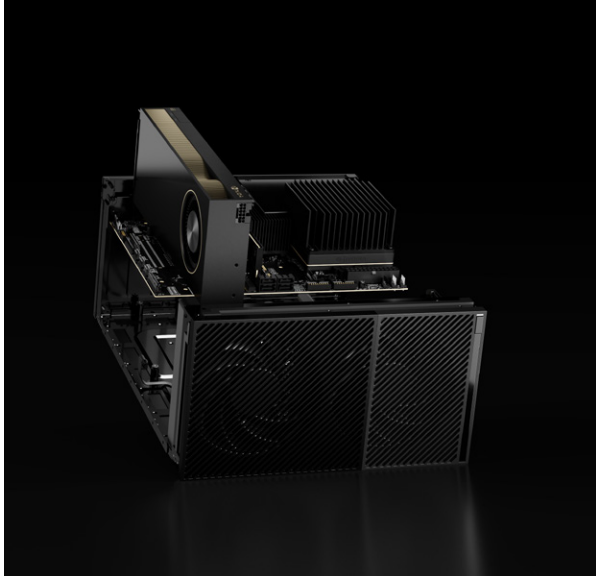
Datasheet

NVIDIA IGX Thor Developer Kit

Enterprise-ready development platform for physical AI.



NVIDIA IGX Thor Developer Kit

PNY Part Number: NVIGXTHOR-KIT

Ultimate Developer Kit for all IGX Use Cases

The NVIDIA IGX Thor™ Developer Kit accelerates industrial and medical edge innovation with real-time sensor processing, AI reasoning, and functional safety. Powered by an NVIDIA Blackwell architecture iGPU and optional dGPU, it delivers up to 5,581 FP4 TFLOPS of AI compute to effortlessly run multiple generative AI models at the edge. Compared to IGX Orin™ Developer Kit, it provides up to 8x higher AI compute on iGPU, 2.5x higher AI compute on dGPU and 2x better connectivity.

The kit includes an IGX T7000 board with a Blackwell iGPU, 14-core Arm Neoverse-V3AE CPU, a Board Management Controller (BMC), and ConnectX-7 SmartNIC with 400GbE networking, plus support for an RTX PRO Blackwell dGPU designed to accelerate time to market. IGX Thor leverages Transformer Engine and Multi-Instance GPU (MIG) support in the Blackwell architecture to deliver the performance to run multiple AI models with robust workload isolation. With Functional Safety Island (FSI) built into the Thor SoC and the onboard safety MCU, it seamlessly brings AI and safety into one single platform. It also includes a suite of accelerators, such as a third-generation Programmable Vision Accelerator (PVA), dual encoders and decoders, an optical flow accelerator, and more.

NVIDIA IGX Thor helps you accelerate low-latency, real-time applications with the new NVIDIA Blackwell Multi-Instance GPU (MIG) technology and a robust 14-core Arm Neoverse-V3AE CPU. It also includes a suite of accelerators, including a third-generation Programmable Vision Accelerator (PVA), dual encoders and decoders, an optical flow accelerator, and more. For high-speed sensor fusion, the developer kit offers extensive I/O options, including a QSFP slot with 4x 25GbE, a wired Multi-GbE RJ45 connector, multiple USB ports, and additional connectivity interfaces. With Functional Safety Island (FSI) built into the Thor SoC and the onboard safety MCU, it seamlessly brings AI and safety into one single platform.

IGX Thor represents a new class of enterprise edge computers, purpose-built to power the next generation of industrial and medical edge applications. Leveraging the NVIDIA Blackwell GPU architecture, it excels at generative reasoning and multimodal sensor processing, supporting a broad range of generative AI models—from vision-language-action (VLA) models like NVIDIA Isaac™ GR00T N to popular LLMs and VLMs such as Cosmos™ Reason. To deliver a seamless cloud-to-edge experience, IGX Thor runs the NVIDIA AI Enterprise software stack and NVIDIA NIM™ for physical AI applications, including NVIDIA Isaac for robotics, NVIDIA Metropolis for visual AI agents, and NVIDIA Holoscan for sensor processing. Industrial safety AI agents can also be deployed at the edge using the NVIDIA Halos Outside-in Safety Agent Blueprint.

Key Features

Developer Kit Content

- NVIDIA IGX T7000 boardkit with a board management controller, ConnectX®-7 SmartNIC and a Safety MCU
- 850 W DC power supply
- 1 TB NVMe populated in M.2 Key-M slot
- Options to add RTX PRO™Blackwell dGPU to enhance AI performance
- Quick Start Guide

NVIDIA IGX T7000 Board Kit

- 2,560-core NVIDIA Blackwell architecture GPU with 96 fifth-generation Tensor Cores
- 14-core Arm® Neoverse®-V3AE 64-bit CPU
- 128 GB 256-bit LPDDR5X, 273 GB/s
- VESA DisplayPort 1.4a
- 4x USB-A 3.2 | 1x USB-C 3.2
- 2x PCIe Gen 5 (x8 and x16 lanes)
- ConnectX-7 SmartNIC
- Safety MCU
- 2x RJ45 (up to 1GbE each)
- 2x QSFP28+ (upto 200GbE each)
- 1x FSI CAN header

Our ecosystem of partners provides a complete range of carrier boards, design services, cameras, and sensors, along with AI and system software to speed solution development. They also support accelerating medical certifications (IEC 60601, 62304) and industrial functional safety certifications (ISO 26262, IEC 61508), helping you bring products to market faster and with confidence.

With enterprise-level software, massive AI compute, and network security, IGX Thor is ideal for advancing medical imaging, surgical robotics, humanoid robotics, industrial AI automation, high-performance computing, and beyond. As an enterprise-ready platform, IGX Thor enables companies to focus on application development and accelerate the realization of AI's benefits.

Technical Specifications

dGPU Option	With NVIDIA RTX Pro 6000 Blackwell Max-Q Workstation Edition	With NVIDIA RTX™ Pro Blackwell 5000
AI Performance	Up to 5,581 TFLOPS (FP4-Sparse)	Up to 4,293 TFLOPS (FP4-Sparse)
iGPU	2,560-core NVIDIA Blackwell architecture GPU with 96 fifth-generation Tensor Cores	2,560-core NVIDIA Blackwell architecture GPU with 96 fifth-generation Tensor Cores
	Multi-Instance GPU with 10 TPCs	Multi-Instance GPU with 10 TPCs
iGPU Max Frequency	1.57 GHz	1.57 GHz
dGPU	24,064-core Blackwell architecture GPU with fifth-generation Tensor Cores	14,080-core Blackwell architecture GPU with fifth-generation Tensor Cores
CPU	14-core Arm Neoverse-V3AE 64-bit CPU	14-core Arm Neoverse-V3AE 64-bit CPU
	64 KB I-cache, 64 KB dCache	64 KB I-cache, 64 KB dCache
	1 MB L2 cache per core	1 MB L2 cache per core
	16 MB shared system L3 cache	16 MB shared system L3 cache
CPU Max Frequency	2.6 GHz	2.6 GHz
Vision Accelerator	1x PVA v3	1x PVA v3
Memory	128 GB 256-bit LPDDR5X | 273 GB/s	128 GB 256-bit LPDDR5X | 273 GB/s
	96 GB dGPU memory | 1,792 GB/s	48 GB dGPU memory | 1,344 GB/s
Storage	1 TB M.2 NVMe (PCIE Gen5 x2)	1 TB M.2 NVMe (PCIE Gen5 x2)
Video Encode	2x NVEncode (iGPU)	2x NVEncode (iGPU)
	4x NVEncode (dGPU)	3x NVEncode (dGPU)
Video Decode	2x NVDecode (iGPU)	2x NVDecode (iGPU)
	4x NVDecode (dGPU)	3x NVDecode (dGPU)
PCIe	2x PCIe Gen5 (x8, x16)	2x PCIe Gen5 (x8, x16)
USB	1x USB 3.2 gen 2 type C connector	1x USB 3.2 gen 2 type C connector
	4x USB 3.2 gen 2 type A connectors	4x USB 3.2 gen 2 type A connectors
Networking	2x RJ45 (1GbE each)	2x RJ45 (1GbE each)
	2x QSFP28 (200GbE each)	2x QSFP28 (200GbE each)
ConnectX Support	Yes	Yes
Display	DisplayPort 1.4a output	DisplayPort 1.4a output

Technical Specifications

dGPU Option	With NVIDIA RTX Pro 6000 Blackwell Max-Q Workstation Edition	With NVIDIA RTX™ Pro Blackwell 5000
Other I/O	1x FSI CAN	1x FSI CAN
	Audio Line-out, MIC in	Audio Line-out, MIC in
BMC	Yes	Yes
Functional Safety	Functional Safety Island on SoC	Functional Safety Island on SoC
	Safety MCU on the carrier board	Safety MCU on the carrier board
NVDIA AI Enterprise Support	Yes	Yes
Power	40 W–130 W TMP	40 W–130 W TMP
	Up to 300 W for dGPU	Up to 300 W for dGPU
Mechanical	262.70 mm × 382.70mm × 151.20mm	262.70 mm × 382.70mm × 151.20mm

Ready to Get Started?

To learn more about the NVIDIA IGX Thor Developer Kit, visit https://www.pny.com/professional/hardware/nvidia-igx-thor

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