NVIDIA Jetson Orin Nano Super Developer Kit Instructions

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Datasheet

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NVIDIA Jetson Orin Nano Super Developer Kit

The Most Affordable Generative AI Supercomputer

Transform Generative AI Concepts Into Reality

The NVIDIA Jetson Orin Nano Super Developer Kit is a compact, yet powerful computer that redefines generative AI for small edge devices. It delivers up to 67 TOPS of AI performance—a 1.7X improvement over its predecessor—to seamlessly run a wide variety of generative AI models, like vision transformers, large language models, vision-language models, and more. At just $249, it provides developers, students, and makers with the most affordable and accessible platform with the support of the NVIDIA AI software and a broad AI software ecosystem to democratize generative AI at the edge. Existing Jetson Orin Nano Developer Kit users can experience this performance boost with just a software upgrade, so everyone can now unlock new possibilities with generative AI.

The developer kit comprises a Jetson Orin Nano 8GB module and a reference carrier board that can accommodate all Orin Nano and NVIDIA Orin™ NX modules. This provides the ideal platform for prototyping your next-gen edge-AI product. The Jetson Orin Nano 8GB module features an Ampere architecture GPU and a 6-core ARM CPU, enabling multiple concurrent AI application pipelines and high- performance inference. The carrier board boasts a wide array of connectors, including two camera connectors that can handle 2-lane and 4-lane cameras.

The NVIDIA Jetson™ platform runs the NVIDIA AI software stack, with a variety of available use-case-specific application frameworks. These include NVIDIA Isaac™ for robotics, NVIDIA Metropolis for vision AI, and NVIDIA Holoscan for sensor processing. You can save significant time with NVIDIA Omniverse™ Replicator for synthetic data generation (SDG) and NVIDIA TAO Toolkit for fine-tuning pretrained AI models from the NVIDIA® NGC™ catalog.

Ecosystem partners offer additional AI and system software, developer tools, and custom software development. They can also help with cameras and other sensors, as well as carrier boards and design services for your product.

Jetson Orin modules are unmatched in performance and efficiency for robots and other autonomous machines. You now have the flexibility to create the next generation of AI solutions with the latest NVIDIA technology. Together with the world-standard NVIDIA AI software stack and an ecosystem of services and products, your road to market has never been faster.

Key Features

Developer Kit Content (P3766)

> Jetson Orin Nano™ 8GB module with heat sink and reference carrier board
> DC power supply
> 802.11ac/ab/gn wireless network interface controller
> Quick Start Guide

Jetson Orin Nano 8GB Module

> NVIDIA Ampere architecture with 1024 NVIDIA® CUDA® cores with 32 tensor cores
> 6-core Arm® Cortex-A78AE v8.2 64-bit CPU
> 8GB 128-bit LPDDR5 102GB/s
> Support for external NVMe

Reference Carrier Board

> 2x MIPI CSI-2 22-pin camera connectors
> 2x M.2 Key M, M.2 Key E
> 4x USB 3.2 Gen2 Type-A
> USB Type-C for UFP
> Gigabit Ethernet
> DisplayPort
> 40-pin expansion header
> DC power jack

NVIDIA Jetson Orin Nano Super Developer Kit

Technical Specifications

	Jetson Orin Nano 8GB Module
AI Performance	67 TOPS
GPU	NVIDIA Ampere architecture with 1024 CUDA cores and 32 tensor cores
CPU	6-core Arm® Cortex®-A78AE v8.2 64-bit CPU 1.5MB L2 + 4MB L3
Memory	8GB 128-bit LPDDR5 102GB/s
Storage	Supports SD card slot and external NVMe
Video Encode	1080p30 supported by 1-2 CPU cores
Video Decode	1x 4K60 (H.265) 2x 4K30 (H.265) 5x 1080p60 (H.265) 11x 1080p30 (H.265)
Power	7W–25W

Refer to the Software Features section of the latest NVIDIA Jetson Linux Developer Guide for a list of supported features.

	Reference Carrier Board
Camera	2x MIPI CSI-2 22-pin camera connectors
PCIe	M.2 Key M slot with x4 PCIe Gen3 M.2 Key M slot with x2 PCIe Gen3 M.2 Key E slot
USB	USB Type-A connector: 4x USB 3.2 Gen2 USB Type-C connector for UFP
Networking	1xGbE connector
Display	1x DP 1.2 (+MST) connector
Other I/O	40-pin expansion header (UART, SPI, I2S, I2C, GPIO) 12-pin button header 4-pin fan header DC power jack
Mechanical	103mm x 90.5mm x 34.77mm (Height includes feet, carrier board, module, and thermal solution)

Ready to Get Started?

Learn more at nvidia.com/jetson-orin

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Documents / Resources

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References

- Jetson AGX Orin for Next-Gen Robotics | NVIDIA
- User Manual