



# NVIDIA Jetson Orin Nano Developer Kit

Accelerating entry-level edge AI applications.



## Transform Visionary AI Concepts Into Reality

The NVIDIA Jetson Orin Nano Developer Kit sets a new standard for creating entry-level AI-powered robots, smart drones, and intelligent cameras. It also simplifies the process of starting with Jetson Orin Nano series modules. Compact design, lots of connectors and up to 40 TOPS of AI performance make this the perfect developer kit to bring your AI concepts to life. With up to 80X the performance of Jetson Nano™, it can run all modern AI models, including transformer and advanced robotics models.

The developer kit comprises a Jetson Orin Nano 8GB module and a reference carrier board that can accommodate all Orin Nano and 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, DeepStream for vision AI, and Riva for conversational AI. 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 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/abgn 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 68 GB/s
- > Supports 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
- > microSD slot
- > 40-pin expansion header
- > DC power jack

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## Technical Specifications

### Jetson Orin Nano 8GB Module

<b>GPU</b>	NVIDIA Ampere architecture with 1024 CUDA cores and 32 tensor cores
<b>CPU</b>	6-core Arm® Cortex®-A78AE v8.2 64-bit CPU 1.5MB L2 + 4MB L3
<b>Memory</b>	8GB 128-bit LPDDR5 68GB/s
<b>Storage</b>	Supports SD card slot and external NVMe
<b>Video Encode</b>	1080p30 supported by 1-2 CPU cores
<b>Video Decode</b>	1x 4K60 (H.265) 2x 4K30 (H.265) 5x 1080p60 (H.265) 11x 1080p30 (H.265)
<b>Power</b>	7W-15W

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

### Reference Carrier Board

<b>Camera</b>	2x MIPI CSI-2 22-pin camera connectors
<b>PCIe</b>	M.2 Key M slot with x4 PCIe Gen3 M.2 Key M slot with x2 PCIe Gen3 M.2 Key E slot
<b>USB</b>	USB Type-A connector: 4x USB 3.2 Gen2 USB Type-C connector for UFP
<b>Networking</b>	1xGbE connector
<b>Display</b>	1x DP 1.2 (+MST) connector
<b>Other I/O</b>	40-pin expansion header (UART, SPI, I2S, I2C, GPIO) 12-pin button header 4-pin fan header microSD slot DC power jack
<b>Mechanical</b>	100mm x 79mm x 21mm (Height includes feet, carrier board, module, and thermal solution)

## Ready to Get Started?

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