



NVIDIA JETSON AGX ORIN DEVELOPER KIT

Next-Level AI Performance for Next-Gen Robotics



Develop the next generation of autonomous machines.

The NVIDIA® Jetson AGX Orin™ Developer Kit makes it easy to get started with Jetson Orin. Compact size, lots of connectors, and up to 275 TOPS of AI performance make this developer kit perfect for prototyping advanced AI-powered robots and other autonomous machines.

The developer kit includes a Jetson AGX Orin module, and can emulate all the Jetson Orin modules. It supports multiple concurrent AI application pipelines with the NVIDIA Ampere GPU architecture, next-generation deep learning and vision accelerators, high-speed IO, and fast memory bandwidth. Now you can develop solutions using your largest and most complex AI models to solve problems such as natural language understanding, 3D perception, and multi-sensor fusion.

Jetson runs the NVIDIA AI software stack, and use-case specific application frameworks are available, including 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 by using NVIDIA TAO toolkit to fine-tune pretrained AI models from the NGC™ catalog.

Jetson 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.

With the computing capability of more than eight Jetson AGX Xavier systems in a developer kit that integrates the latest NVIDIA GPU technology with the world's most advanced deep learning software stack, you'll have the flexibility to create the next generation of AI solutions.



Key Features

Developer kit contents

- > Jetson AGX Orin module with heat sink and reference carrier board
- > 802.11ac/abgn wireless Network Interface Controller
- > Power adapter and USB Type-C cord
- > USB Type-C to USB Type-A cord
- > Quick Start and Support Guide

Jetson AGX Orin module

- > 2048-core NVIDIA Ampere architecture GPU with 64 tensor cores
- > 12-core Arm® Cortex®-A78AE v8.2 64-bit CPU
- > 2x NVDLA v2.0
- > PVA v2.0
- > 32GB 256-bit LPDDR5
- > 64GB eMMC 5.1

Reference carrier board

- > MIPI CSI-2 camera connector
- > PCIe x16 connector (supports x8)
- > Gigabit Ethernet
- > M.2 Key E, M.2. Key M
- > 2x USB Type-C
- > 4x USB 3.2 Type-A
- > Micro-USB 2.0 (for Device Mode)
- > DisplayPort Dual-Mode
- > microSD slot
- > 40-pin header (GPIOs, I2C, I2S, SPI, UART)
- > Power, Force Recovery, and Reset buttons

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TECHNICAL SPECIFICATIONS

JETSON AGX ORIN MODULE

GPU	NVIDIA Ampere architecture with 2048 NVIDIA® CUDA® cores and 64 tensor cores
CPU	12-core Arm Cortex-A78AE v8.2 64-bit CPU 3MB L2 + 6MB L3
DL Accelerator	2x NVDLA v2.0
Vision Accelerator	PVA v2.0
Memory	32GB 256-bit LPDDR5 204.8GB/s
Storage	64GB eMMC 5.1
Video Encode	2x 4K60 4x 4K30 8x 1080p60 16x 1080p30 (H.265)
Video Decode	1x 8K30 3x 4K60 7x 4K30 11x 1080p60 22x 1080p30 (H.265)
Power	15W-60W

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

REFERENCE CARRIER BOARD

Camera	16-lane MIPI CSI-2 connector
PCIe	x16 PCIe slot supporting: x8 PCIe Gen4
RJ45	Up to 10GbE
M.2 Key M	x4 PCIe Gen 4
M.2 Key E	x1 PCIe Gen 4, USB 2.0, UART, I2S
USB Type-C	2x USB 3.2 Gen2
USB Type-A	2x USB 3.2 Gen2, 2x USB 3.2 Gen1
USB Micro-B	USB 2.0
DisplayPort	DisplayPort 1.4a (+MST)
microSD slot	UHS-1 cards up to SDR104 mode
Other	40-pin header (I2C, GPIO, SPI, CAN, I2S, UART, DMIC) 12-pin automation header 10-pin audio panel header 10-pin JTAG header 4-pin fan header 2-pin RTC battery backup connector DC power jack Power, Force Recovery, and Reset buttons
Dimensions	110mm x 110mm x 71.65mm (Height includes feet, carrier board, module, and thermal solution)

[Learn more](#)

Learn more at www.nvidia.com/JetsonAGXOrin