



NVIDIA JETSON XAVIER NX

XAVIER PERFORMANCE. NANO SIZE.

The World's Smallest AI Supercomputer for Embedded and Edge Systems

NVIDIA® Jetson Xavier™ NX brings supercomputer performance to the edge in a compact system-on-module (SoM) that's smaller than a credit card. It delivers up to 21 TOPS for modern AI workloads with NVIDIA's unified software architecture, and has extensive I/O interfaces to build advanced solutions using as little as 10 watts of power.

The entire NVIDIA software stack is available on Jetson Xavier NX using the NVIDIA JetPack™ SDK. It supports all major AI frameworks with accelerated libraries for deep learning, as well as computer vision, computer graphics, multimedia, and more. The same CUDA-X AI™ software architecture across the Jetson™ family of products ensures fast time to market and scalability, reducing development costs.

Performance up to 14 TOPS (at 10 W) or 21 TOPS (at 15 W) enables Jetson Xavier NX to run multiple neural networks in parallel and process data from multiple high-resolution sensors simultaneously. It also offers a unique combination of performance and power advantages with a rich set of I/Os—from high-speed CSI and PCIe to low-speed I2Cs and GPIOs—opening the door for embedded and edge computing devices that demand increased performance but are constrained by size, weight, and power budgets. These include drones, portable medical devices, commercial robots, intelligent high-resolution sensors for factory logistics and automated optical inspection, and other AIoT systems.

KEY FEATURES

Jetson Xavier NX module

- > 384-core NVIDIA Volta™ GPU with 48 Tensor Cores
- > 6-core NVIDIA Carmel ARM®v8.2 64-bit CPU
- > 2x NVDAE Engines
- > 8 GB 128-bit LPDDR4x
- > 16 GB eMMC 5.1
- > 10/100/1000 Base-T Ethernet

Power

- > Voltage Input: 5 V
- > Module Power: 10 W - 15 W

NVIDIA® JETSON XAVIER™ NX MODULE

TECHNICAL SPECIFICATIONS

AI Performance	21 TOPS (INT8)
GPU	NVIDIA Volta architecture with 384 NVIDIA CUDA® cores and 48 Tensor cores
Max GPU Freq	1100 MHz
CPU	6-core NVIDIA Carmel ARM®v8.2 64-bit CPU 6 MB L2 + 4 MB L3
CPU Max Freq	1.9 GHz
Memory	8 GB 128-bit LPDDR4x 51.2 GB/s
Storage	16 GB eMMC 5.1
Power	10 W 15 W
PCIe	1 x1 + 1 x4, total 80 GT/s (PCIe Gen3)
CSI Camera	Up to 6 cameras (36 via virtual channels) 12 lanes MIPI CSI-2 D-PHY 1.2 (up to 30 Gbps)
Video Encode	2x464 MP/sec (HEVC) 2x 4K @ 30 (HEVC) 6x 1080p @ 60 (HEVC) 14x 1080p @ 30 (HEVC)
Video Decode	2x690 MP/sec (HEVC) 2x 4K @ 60 (HEVC) 4x 4K @ 30 (HEVC) 12x 1080p @ 60 (HEVC) 32x 1080p @ 30 (HEVC) 16x 1080p @ 30 (H.264)
Display	2 multi-mode DP 1.4/eDP 1.4/HDMI 2.0
DL Accelerator	2x NVDLA Engines
DLA Max Freq	1100 MHz
Networking	10/100/1000 BASE-T Ethernet
USB	1 USB 3.1 (10 Gbps) 3x USB 2.0
Other IOs	1x SDIO / 2x SPI / 3x UART / 2x I2S / 4x I2C / 1x CAN / GPIOs
Mechanical	45 mm x 69.6 mm 260 pin SO-DIMM connector

Learn more at www.nvidia.com/Jetson

© 2019 NVIDIA Corporation. All rights reserved. NVIDIA, the NVIDIA logo, CUDA, CUDA-X AI, Jetson, Jetson Xavier, NVIDIA JetPack, and NVIDIA Volta are trademarks and/or registered trademarks of NVIDIA Corporation in the U.S. and other countries. Other company and product names may be trademarks of the respective companies with which they are associated. ARM, AMBA and ARM Powered are registered trademarks of ARM Limited. Cortex, MPCore and Mali are trademarks of ARM Limited. All other brands or product names are the property of their respective holders. "ARM" is used to represent ARM Holdings plc; its operating company ARM Limited; and the regional subsidiaries ARM Inc.; ARM KK; ARM Korea Limited.; ARM Taiwan Limited; ARM France SAS; ARM Consulting [Shanghai] Co. Ltd.; ARM Germany GmbH; ARM Embedded Technologies Pvt. Ltd.; ARM Norway AS and ARM Sweden AB. NOV19

