

# NVIDIA JETSON AGX XAVIER 8GB

## AFFORDABLE ENGINE FOR AUTONOMOUS MACHINES

The NVIDIA® Jetson AGX Xavier™ 8GB delivers up to 20 TOPS of accelerated computing capability in a compact form factor consuming under 20 W.

This advanced system-on-module is powered by the NVIDIA Xavier SoC and designed for cost-effective and performance-driven autonomous machine applications. It features a heterogeneous accelerated computing architecture for advanced compute performance to do AI at the edge, integrated memory, storage, power management, and an innovative thermal design to enable faster time to market. Plus, it can run modern AI workloads to solve problems in optical inspection, manufacturing, robotics, logistics, retail, service, agriculture, smart cities, and healthcare.

Jetson AGX Xavier 8GB is supported by the NVIDIA JetPack™ SDK, which includes board support package (BSP), Linux OS, NVIDIA CUDA®, cuDNN, and TensorRT™ software libraries for deep learning, computer vision, GPU computing, multimedia processing, and much more. It's also supported by the NVIDIA DeepStream SDK—delivering a complete toolkit for real-time situational awareness through intelligent video analytics (IVA)—and by the NVIDIA Isaac SDK, which delivers a software toolkit for robot development. These boost performance and accelerate software development while reducing development cost and effort.

Learn more at <https://developer.nvidia.com/jetson>

## KEY FEATURES

### Module

- > 384-Core NVIDIA Volta™ GPU with Tensor Cores
- > {2x} NVDLA Engines
- > 6-Core ARM® v8.2 64-Bit Carmel CPU
- > 8 GB 256-Bit LPDDR4x
- > 32 GB eMMC 5.1 Flash Storage
- > 7-Way VLIW Vision-Accelerator Processor

### Power

- > Voltage Input 5 V, 9 V~20 V
- > Module Power: 10 W~20 W

### Environment

- > Operating Temperature: -25 C to 80 C  
Measured on the TTP Surface
- > Storage Temperature: -25 C to 80 C
- > Humidity: TBD (Non-Operational)
- > Vibration: TBD (Random/ Sinusoidal)
- > Shock: TBD

# NVIDIA JETSON AGX XAVIER 8GB

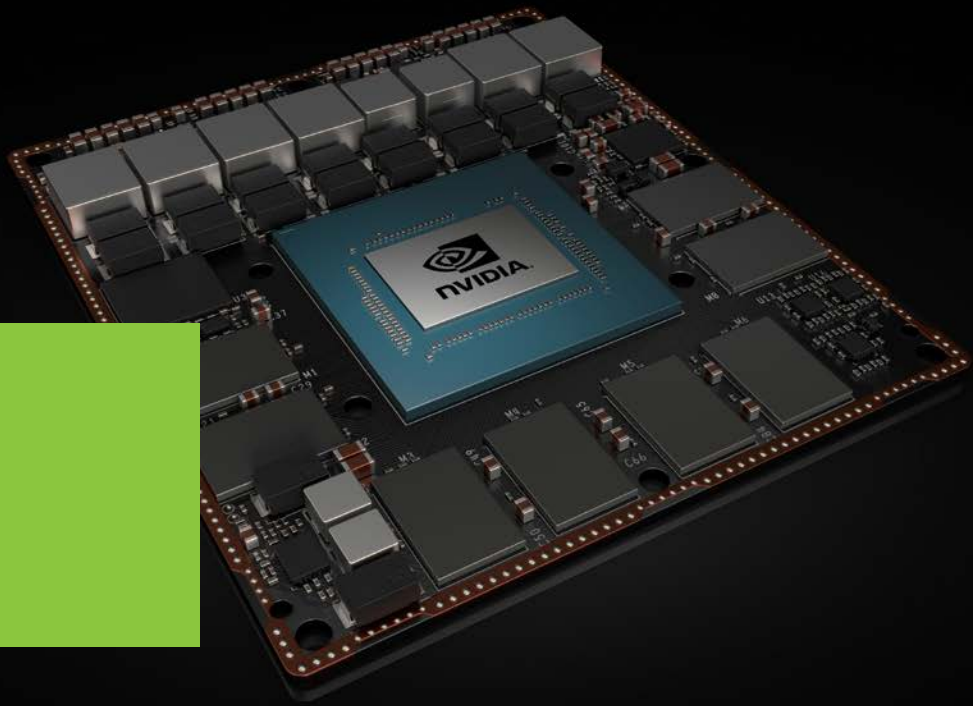
## TECHNICAL SPECIFICATIONS

GPU	<b>384-Core Volta GPU with Tensor Cores</b>
CPU	<b>6-Core ARM v8.2 64-Bit CPU, 6 MB L2 + 4 MB L3</b>
Memory	<b>8 GB 256-Bit LPDDR4x   85.3 GB/s</b>
Storage	<b>32 GB eMMC 5.1</b>
Encoder/Decoder	<b>(2x) 4Kp30 HEVC   (2x) 4Kp60 HEVC</b>
CSI	<b>(16x) CSI-2 Lanes</b>
Connectivity	<b>Gigabit Ethernet</b>
Display	<b>HDMI 2.0, eDP 1.4, DP 1.2</b>
PCIe/SLVS/USB	<b>(8x) PCIe Gen3 / (8x) SLVS-EC</b>
USB	<b>(3x) USB 3.1</b>
DL Accelerator	<b>(2x) NVDLA Engines</b>
Vision Accelerator	<b>7-Way VLIW Vision Processor</b>
Other	<b>UART, SPI, CAN, I<sup>2</sup>C, I<sup>2</sup>S, DMIC, GPIOs</b>
Power	<b>10 W~20 W</b>
Size	<b>87 mm x 100 mm</b>
Mechanical	<b>699 pin Molex Mirror Mex Connector Integrated Thermal Transfer Plate</b>

Visit <https://developer.nvidia.com/jetson> to learn more.

© 2019 NVIDIA Corporation. All rights reserved. NVIDIA, the NVIDIA logo, Jetson, Xavier, AGX Xavier, CUDA, 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. JUL19





# NVIDIA JETSON AGX XAVIER MODULE A NEW AI MILESTONE FOR AUTONOMOUS MACHINES.

## Server-class performance in the palm of your hand.

The NVIDIA® Jetson AGX Xavier™ module delivers up to 32 TOPS of accelerated computing capability in a compact form factor consuming under 30 watts. This gives you more than 20X the performance and 10X the energy efficiency of its predecessor, the NVIDIA Jetson™ TX2.

This advanced system-on-module is powered by the NVIDIA Xavier SoC and designed specifically for autonomous machines. Heterogeneous accelerated computing architecture delivers advanced edge capabilities. Plus, it comes with integrated memory, storage, power management, and an innovative thermal design to enable faster time to market. Run modern AI workloads and solve problems in areas like manufacturing, logistics, retail, service, agriculture, smart cities, and healthcare.

Jetson AGX Xavier is supported by NVIDIA JetPack™, which includes a board support package (BSP), Linux OS, NVIDIA CUDA®, cuDNN, and TensorRT™ software libraries for deep learning, computer vision, GPU computing, multimedia processing, and much more. It's also supported by the NVIDIA DeepStream SDK, which delivers a complete toolkit for real-time situational awareness through intelligent video analytics (IVA). This helps you boost performance and accelerate software development, while reducing development cost and effort.

Learn more at [www.developer.nvidia.com/jetson-agx-xavier](http://www.developer.nvidia.com/jetson-agx-xavier).

## KEY FEATURES

### Module

- > 512-Core NVIDIA Volta™ GPU with Tensor Cores
- > [2x] NVDLA Engines
- > 8-Core ARM® v8.2 64-Bit Carmel CPU
- > 32 GB 256-Bit LPDDR4x
- > 32 GB eMMC 5.1 Flash Storage
- > 7-Way VLIW Vision Accelerator Processor

### Power

- > Voltage Input 5 V, 9 V-20 V
- > Module Power: 10 W-30 W

### Environment

- > Operating Temperature: -25°C to 80°C measured on the TTP surface
- > Storage Temperature: -40°C to 105°C
- > Humidity: 95% RH, -10°C to 65°C (non-operational)
- > Vibration: 5 G RMS 10 to 500 Hz (random/ sinusoidal)
- > Shock: 50 G, half sine 11 ms duration

# NVIDIA JETSON AGX XAVIER

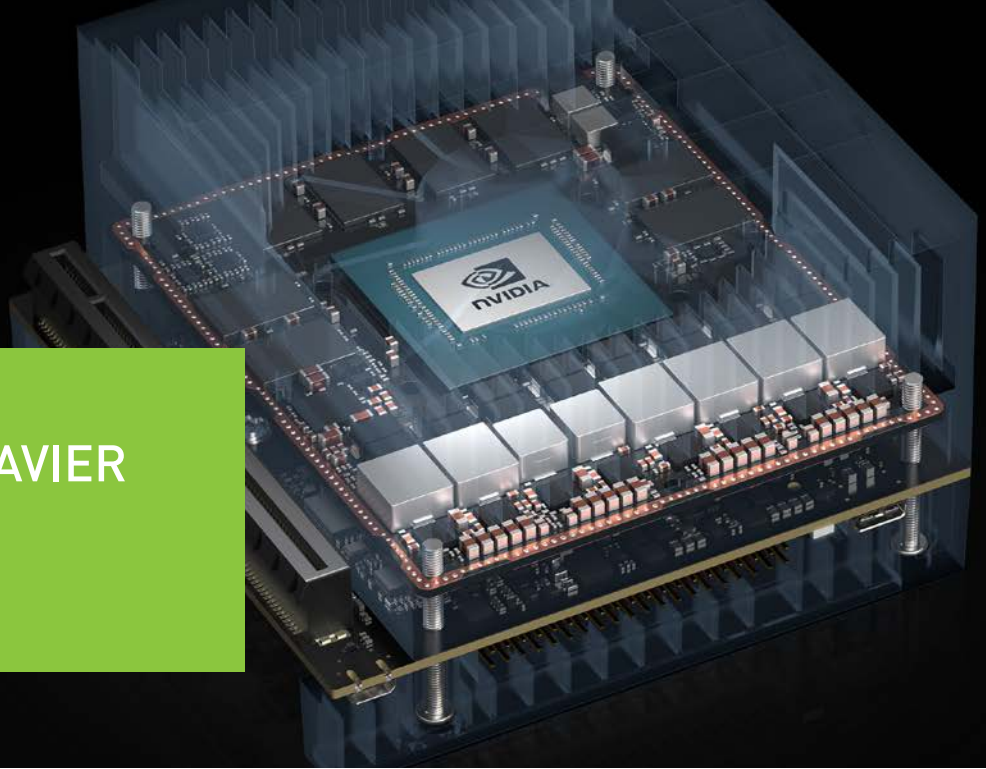
## TECHNICAL SPECIFICATIONS

GPU	<b>512-Core Volta GPU with Tensor Cores</b>
DL Accelerator	<b>(2x) NVDLA Engines</b>
CPU	<b>8-Core ARM v8.2 64-Bit CPU, 8 MB L2 + 4 MB L3</b>
Memory	<b>32 GB 256-Bit LPDDR4x   137 GB/s</b>
Display	<b>HDMI 2.0 DP 1.4</b>
Storage	<b>32 GB eMMC 5.1</b>
Vision Accelerator	<b>7-Way VLIW Vision Processor</b>
Encoder/Decoder	<b>(2x) 4Kp60   HEVC/(2x) 8Kp30   12-Bit Support</b>
CSI	<b>(16x) CSI-2 Lanes</b>
PCIE/SLVS/USB/UFS	<b>(8x) PCIe Gen4 / (8x) SLVS-EC (3x) USB 3.1 Single-Lane UFS</b>
Other	<b>UART, SPI, CAN, I<sup>2</sup>C, I<sup>2</sup>S, DMIC, GPIOs</b>
Connectivity	<b>Gigabit Ethernet</b>
Power	<b>10 W~30 W</b>
Size	<b>87 mm x 100 mm</b>
Mechanical	<b>699-Pin Connector Integrated Thermal Transfer Plate</b>

Visit [www.developer.nvidia.com/jetson-agx-xavier](http://www.developer.nvidia.com/jetson-agx-xavier) to learn more.

©2020 NVIDIA Corporation. All rights reserved. NVIDIA, the NVIDIA logo, CUDA, Jetson, Jetson AGX Xavier, NVIDIA JetPack, NVIDIA Volta, and TensorRT 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. JAN 20





# NVIDIA JETSON AGX XAVIER DEVELOPER KIT POWERING AI IN AUTONOMOUS MACHINES.

## Usher in a new era of autonomous machines with the NVIDIA Jetson AGX Xavier Developer Kit.

Now, you can develop and deploy autonomous machines at scale with the powerful NVIDIA® Jetson AGX Xavier™ Developer Kit. It's capable of running modern, advanced neural networks and other AI workloads to solve problems in manufacturing, logistics, retail, service, agriculture, smart cities, and portable medical devices. Plus, it delivers up to 32 TOPS and can operate in as little as 10 W.

The Jetson AGX Xavier Developer Kit helps you speed innovation. As part of NVIDIA's world-leading AI platform, it's integrated with NVIDIA tools and workflows that let you train neural networks faster, which means more iterations and better accuracy.

It's also supported by NVIDIA CUDA®, cuDNN, and TensorRT™ software libraries, as well as our JetPack™ and DeepStream SDKs. This helps you boost performance while reducing development cost and effort.

Learn more about the Jetson AGX Xavier Developer Kit and get access to documentation, training, and tutorials at [www.developer.nvidia.com/jetson-agx-xavier](http://www.developer.nvidia.com/jetson-agx-xavier).



### KEY FEATURES

#### Module

- > 512-Core NVIDIA Volta™ GPU with Tensor Cores
- > (2x) NVDLA Engines
- > 8-Core ARM® v8.2 64-Bit CPU
- > 32 GB 256-Bit LPDDR4x
- > 32 GB eMMC 5.1 Flash Storage
- > 7-Way VLIW Vision Accelerator Processor

#### Buttons

- > Power On/Off
- > Force Recovery
- > Reset

#### > Power Options

- > External 19 V AC Adapter

#### I/O

- > (2x) USB 3.1 Type C (10 GT/s)
- > PCIe x8/SLVS-EC x8
- > Gigabit Ethernet
- > (1x) Hybrid eSATA/USB 3.0 Type A
- > (3x) eDP/DP/HDMI at 4K @ 60 | HDMI 2.0, DP1.4
- > (16x) CSI-2 Lanes
- > M.2 Key E, M.2 Key M
- > Micro SD/UFS
- > UART, SPI, CAN, I<sup>2</sup>C, I<sup>2</sup>S, DMIC, GPIOs

# NVIDIA JETSON AGX XAVIER

## TECHNICAL SPECIFICATIONS

### DEVELOPER KIT

GPU	<b>512-Core Volta GPU with Tensor Cores</b>
CPU	<b>8-Core ARM v8.2 64-Bit CPU, 8 MB L2 + 4 MB L3</b>
Memory	<b>32 GB 256-Bit LPDDR4x   137 GB/s</b>
Storage	<b>32 GB eMMC 5.1</b>
DL Accelerator	<b>(2x) NVDLA Engines</b>
Vision Accelerator	<b>7-Way VLIW Vision Processor</b>
Encoder/Decoder	<b>(2x) 4K @ 60   12-Bit Support</b>
Size	<b>105mm x 105mm x 65mm</b>
Deployment	<b>Module (Jetson AGX Xavier)</b>

### DEVELOPER KIT I/Os      JETSON AGX XAVIER MODULE INTERFACE

PCIe X16	<b>x8 PCIe Gen4/x8 SLVS-EC</b>
RJ45	<b>Gigabit Ethernet</b>
USB-C	<b>2x USB 3.1, DP (Optional), PD (Optional) Close-System Debug and Flashing Support on 1 Port</b>
Camera Connector	<b>(16x) CSI-2 Lanes</b>
M.2 Key M	<b>NVMe</b>
M.2 Key E	<b>PCIe x1 + USB 2.0 + UART (for Wi-Fi/LTE) / I<sup>2</sup>S/PCM</b>
40-Pin Header	<b>UART + SPI + CAN + I<sup>2</sup>C + I<sup>2</sup>S + DMIC + GPIOs</b>
HD Audio Header	<b>High-Definition Audio</b>
eSATAp + USB3.0 Type A	<b>SATA Through PCIe x1 Bridge + USB 3.0 (PD + Data for 2.5-inch SATA)</b>
HDMI Type A/DP	<b>HDMI 2.0, DP 1.4</b>
uSD/UFS Card Socket	<b>SD/UFS</b>

Visit [www.developer.nvidia.com/jetson-agx-xavier](http://www.developer.nvidia.com/jetson-agx-xavier) to learn more.

©2020 NVIDIA Corporation. All rights reserved. NVIDIA, the NVIDIA logo, CUDA, Jetson, Jetson AGX Xavier, NVIDIA JetPack, NVIDIA Volta, and TensorRT 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. JAN20

