EAC 4000

Arm-based Edge AI Computing

NVIDIA® Jetson Orin™ NX/Nano Compact AI Computing System

- NVIDIA Jetson Orin™ NX/Nano, up to 100 TOPS AI performance
- Up to 16GB LPDDR5 RAM, pre-installed with NVMe SSD up to 1TB
- 1 GigE LAN, 4 USB 3.1, 1 HDMI 2.0
- 2 COM RS-232/422/485
- 1 Full-size Mini PCIe with SIM for 4G/Wi-Fi/BT
- Optional Allxon OOB Support

High-Performance AI Inference Platform | Advanced Integration
Flexible Configuration | Industrial Optimization

The Rugged Science EAC-4000, driven by the powerful NVIDIA® Jetson Orin™ NX/Nano platform, boasts a 1024-core NVIDIA Ampere™ architecture GPU, complete with 32 Tensor cores and an 8-core Arm® Cortex®-A78AE CPU. With a robust configuration of up to 16GB LPDDR5 and 2 NVDLA engines, the EAC-4000 achieves an impressive 100 TOPS of AI performance. This compact yet mighty system includes 1 GigE LAN port, 4 versatile USB ports, 1 HDMI port, and 2 flexible COM RS-232/422/485 ports, making it exceptionally suited for space-constrained applications. It excels in demanding scenarios such as traffic vision, automated optical inspection (AOI), delivery robots, and other advanced edge AI applications, providing the perfect blend of performance and compact design for the most challenging environments.

NVIDIA Partner | WiFi 6 | SIM | TPM | 12V

www.ruggedscience.com | sales@ruggedscience.com | (443) 595-8384

RUGGED SCIENCE

Specifications

System

CPU	XR16 : 8-core Arm® Cortex®-A78AE v8.2 64-bit CPU XR08/AR08/AR04 : 6-core Arm® Cortex®-A78AE v8.2 64-bit CPU
GPU	XR16/XR08/AR08 : NVIDIA Ampere™ architecture w/1024 NVIDIA® CUDA® cores, 32 Tensor cores AR04 : NVIDIA Ampere™ architecture w/512 NVIDIA® CUDA® cores, 16 Tensor cores
DL Accelerator	XR16 : 2 NVDLA Engines XR08 : 1 NVDLA Engines AR08/AR04 : None
Memory	XR16 : 1 LPDDR5 DRAM, 16GB XR08/AR08 : 1 LPDDR5 DRAM, 8GB AR04 : 1 LPDDR5 DRAM, 4GB
Software Support	- Linux - NVIDIA JetPack SDK

I/O Interface

USB	4 USB 3.1 Type A
Micro USB	1 Micro USB Flash Port
Button	- 1 Power Button - 1 Force Recovery Button - 1 Reset Button
LED	Power, SSD
SIM	1 Nano SIM Card Socket
Antenna	2 Antenna for WiFi/4G
Serial	2 COM RS-232/422/485

Expansion

Mini PCIe	1 Mini PCIe (Full-size, PCIe, USB 2.0)

Graphics

Video Encode	**XR16/XR08 :** - HEVC : 1x 4K @60, 3x 4K @30, 6x 1080p @60, 12x 1080p @30 - H.264 : 1x 4K @60, 2x 4k @30, 5x 1080p @60, 11x 1080p @30
Video Decode	**XR16/XR08 :** - HEVC : Up to 1x 8K @30, 2x 4K @60, 4x 4K @30, 9x 1080p @60, 18x 1080p @30 - H.264 : Up to 1x 4K @60, 2x 4K @30, 5x 1080p @60, 11x 1080p @30 **AR08/AR04 :** - HEVC : Up to 1x 4K @60, 2x 4K @30, 5x 1080p @60, 11x 1080p @30 - H.264 : Up to 1x 4K @30, 3x 1080p @60, 7x 1080p @30
Interface	1 HDMI 2.0, up to 4K@60

Storage

M.2	1 M.2 Key M Socket (2242, PCIe 4.0 x4)

Ethernet

LAN	10/100/1000 Base-T GigE LAN, RJ45 Connector

Power

Power Input	12V DC Power Input
Power Interface	3-pin 3.5mm Terminal Block V+, V-

Others

OOB	Out-of-band mgmt by Nuvoton NUC980 (Optional, by Module)
TPM	Infineon SLB9673 supports TPM 2.0 (Optional)

Mechanical

Dimensions	112 x 103 x 45 mm
Weight	0.6 kg (1.32 lb)
Mounting	- Wallmount - DIN Rail (Optional)

Environment

Operating Temperature	15W TDP Mode : -25°C to 55°C 25W TDP Mode : -25°C to 45°C
Storage Temperature	-40°C to 85°C (-40°F to 185°F)
Humidity	5% to 95% Humidity, non-condensing
Relative Humidity	95% @55°C
Shock	Operating, MIL-STD-810G, Method 516.7, Procedure I
Vibration	Operating, MIL-STD-810G, Method 514.6, Procedure I, Category 4
EMC	CE, FCC, EN50155, EN50121-3-2, EN62368-1, MIL-STD-810G

*Environmental ratings for base system only

Order Information

Model	Platform	RAM	LAN	USB 3.1	Serial	SIM	HDMI	Antenna
4000-XR16-SXXX*	Jetson Orin NX	16GB	1	4	2	1	1	2
4000-XR08-SXXX*		8GB						
4000-AR08-SXXX*	Jetson Orin Nano	8GB	1	4	2	1	1	2
4000-AR04-SXXX*		4GB						

*A NVMe SSD is included in default. Please refer to NVMe SSD List to select NVMe SSD capacity.

NVMe SSD List

S128	128GB NVMe SSD	S512	512GB NVMe SSD
S256	256GB NVMe SSD	S01T	1TB NVMe SSD

Dimensions & Drawing

Unit : mm (inch)