

A200 – Parhelion

Rugged Fan-less NANO™ AI Supercomputer



The A200 Parhelion is the smallest and most powerful Rugged fan-less AI supercomputer based on NVIDIA NANO™, brings AI performance to the edge, available with the powerful NVIDIA Jetson NANO™ System-on-Module.

Its Maxwell GPU with 128 CUDA cores reaches 472 GFLOPs (FP16) at a remarkable level of energy efficiency, providing all the power needed for AI-based local processing right where you need it, next to your sensors.

With its compact SFF size, the A200 Parhelion is the most advanced solution for AI, deep learning, and video and signal processing for the next generation of autonomous vehicles, surveillance and targeting systems, EW systems, drones, wearable and many other applications.

POWERED BY



RuggedAI™ is Aitech

■ SWaP-C Rugged AI Supercomputer

■ Ultra-Small Form Factor

■ NVIDIA® Jetson NANO™ System-on-Module

- ▶ Maxwell™ Architecture GPU w/128 CUDA® Cores
- ▶ 4-Core ARM Cortex-A57 CPU
- ▶ 472 GFLOPs (FP16)
- ▶ H.264/H.265 Hardware Encoder/Decoder
- ▶ Best Available Performance per Watt – 31 GFLOPS/W (FP16)

■ NVME SSD

■ Removable Micro SD Card

■ 4 GB LPDDR4

■ Video Capture

- ▶ SDI (SD/HD)
- ▶ Composite (NTSC/PAL)
8 channels available simultaneously
- ▶ 4 FPD-Link™ III (to MIPI CSI) camera inputs

■ I/O

- ▶ Gigabit Ethernet
- ▶ DVI/HDMI Out
- ▶ USB 3.0 & 2.0
- ▶ UART Serial
- ▶ Discretes

■ Vulkan, CUDA®, OpenGL, OpenGL ES

■ Low Power Consumption

■ Environmentally Sealed (IP67)

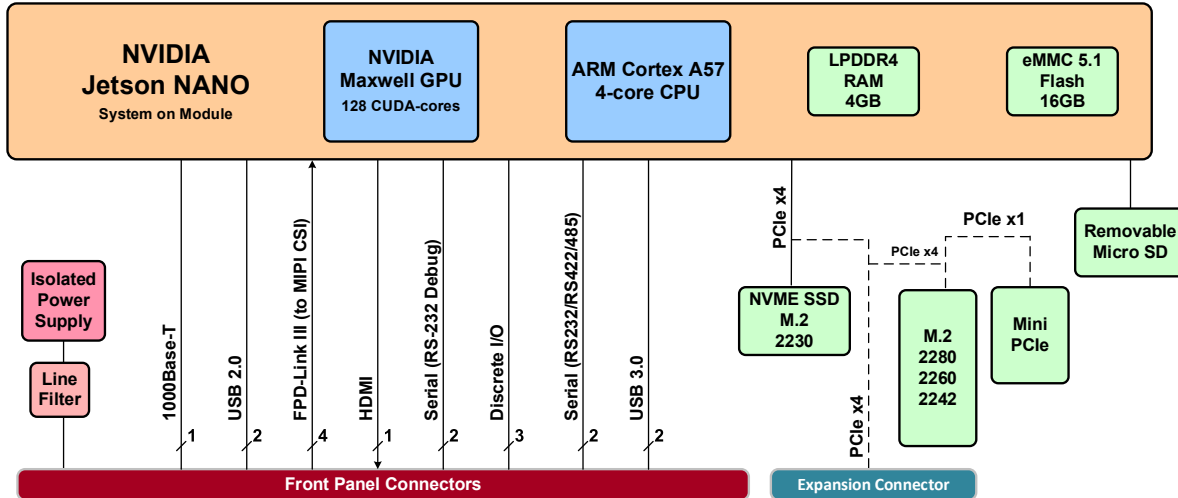
PRELIMINARY



www.aitechsystems.com

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System Architecture

System on Module	NVIDIA Jetson NANO™
GPU	<ul style="list-style-type: none">• NVIDIA Maxwell GPU Architecture• 128 CUDA cores• 472 GFLOPs (FP16)• Vulkan• OpenGL• OpenGL ES• CUDA
CPU	Quad-core ARM A57 @ 1.43 GHz
Expansion Options	Main board accommodates up to two optional expansion modules (via factory configuration), such as: <ul style="list-style-type: none">• Optional I/O expansion modules (for example: SDI Frame Grabber – standard I/O expansion module options are determined by system I/O Variant)• Optional NVMe SSD Additional I/O expansion module options and NVMe SSD options may be available per customer request, contact an Aitech representative for more info
System Resources	<ul style="list-style-type: none">• Multi-standard Video/JPEG Decoder/Encoder, HW Encoding for H.264/H.265• Dynamic voltage and frequency scaling• Temperature Sensors• Status Indicator LED

Memory Resources

RAM	4 GB LPDDR4, operates at up to 25.6 GB/s (depends on power mode), 128-bit interface
eMMC	16 GB eMMC 5.1 (boot source)
NVMe SSD	Optional NVMe SSD (standard options are listed in <i>Ordering Information</i> below, additional options may be available per customer request, contact an Aitech representative for more info)
Removable Micro SD Card	Optional removable Micro SD card (standard options are listed in <i>Ordering Information</i> below, additional options may be available per customer request, contact an Aitech representative for more info)

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I/O	I/O Variant			
	00	01	02	03
Composite Input NTSC/PAL, supports simultaneous capture of all channels at full frame rates	–	8	–	–
SDI Input 480/60i, 576/50i, 720/60p, 1080/60i, 1080/30p,	–	–	1	–
USB 3.0		–		2
FPD-Link III (to MIPI SCI) camera inputs		–		4
NVME SSD (1 TB*)	1	–		1
Gigabit Ethernet (10/100/1000Base-T)			1	
DVI (single-link) / HDMI Output Supports resolutions up to 1920x1080 [60p]			1	
USB 2.0			2	
Serial Ports (RS-232 UART Debug)			1	
Serial Ports (RS-232/422/485 UART) Software configurable as RS-232/422/485			2	
Discrete I/O (Single-Ended)			3	

* - Additional options may be available per customer request, contact an Aitech representative for more info

Software

- Linux OS pre-installed – L4T (Linux for Tegra), a lightly modified Ubuntu-based distribution
- Video capture drivers and sample applications pre-installed, in variants equipped with optional frame grabber(s)

Mechanical

Dimensions (L x W x H)	100 mm x 55 mm x 100 mm [3.9" x 2.2" x 3.9"]
Weight	< 650 gr [1.4 lbs.]

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Power

Input Power	<ul style="list-style-type: none">• Wide input voltage range: 11 – 34 V_{DC} steady state operation• Input reverse polarity protection• EMI/RFI input filter• On-board supplies isolated from external supply• MIL-STD-704 and MIL-STD-1275 compliant (no hold-up)
Power Consumption	<ul style="list-style-type: none">• Two main different power preset modes for the NVIDIA NANO™:<ul style="list-style-type: none">▪ 5 W▪ 10 W (default)• Users can create custom presets, specifying clocks and online cores• Total power consumption depends on system configuration and expansion options

Environmental

Operating Temp.	Min.	-25 °C
	Max.	+55 °C
Non-Operating Temp.		-40 to +80 °C
Vibration		V2 per VITA 47
Operating Shock		OS2 per VITA 47
Altitude		-1,500 to +60,000 ft. ⁽¹⁾
Relative Humidity		0 – 100%
Ingress Protection		IP67 ⁽²⁾
Rain		MIL-STD-810H, Method 506.6, Procedure III
Dust		MIL-STD-810H, Method 510.7, Procedure I & II
Salt Fog		MIL-STD-810H, Method 509.7
Bench Handling		MIL-STD-810H, Method 516.8, Procedure VI
Fungus		MIL-STD-810H, Method 508.8
EMI/RFI		Designed for MIL-STD-461

Notes: (1) Depending on temperature and system power dissipation
(2) With appropriate connections to system I/O and power connectors

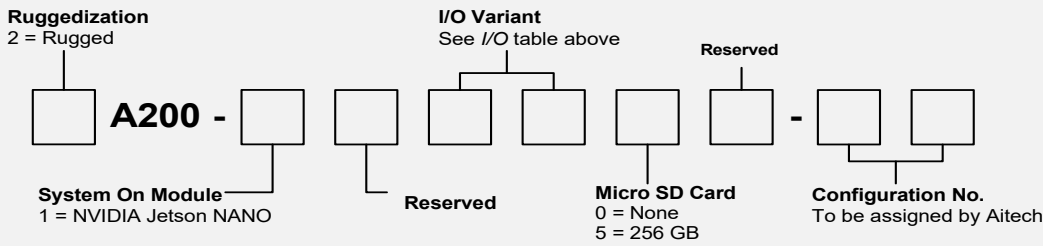
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Ordering Information



Example: 2A200-100000-00

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Optional Accessories

TCA200-00-SK	Starter Kit for I/O Variants 00, 01, and 02: External Power Supply, Power Cable, I/O Cables with Standard I/O Connectors
TCA200-00-SK-HS	Starter Kit for I/O Variant 03: External Power Supply, Power Cable, I/O Cables with Standard I/O Connectors
MCS200-1-00	Mating Connectors for I/O Variants 00, 01, and 02: Power and I/O
MCS200-3-00	Mating Connectors for I/O Variant 03: Power and I/O



Contact Aitech

Contact your Aitech sales representative for additional product information, and for inquiries regarding customized configurations of the A200 and additional software support.

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Aitech Defense Systems, Inc.
Chatsworth, CA, USA
Toll Free: (888) Aitech-8 [248-3248]
Direct: +1 (818) 700-2000
Fax: +1 (818) 407-1502
Email: sales@aitechsystems.com

Aitech Systems, Ltd.
Herzliya, Israel
Tel: +972 (9) 960-0600
Fax: +972 (9) 954-4315
Email: sales@aitechsystems.com

Aitech Innovations India PVT. Ltd.
Bangalore, India
Tel: +91 (80)4866-8105
Fax: +91 (80) 4866-8106
Email: sales@aitechsystems.com

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