

NAC 1000



NVIDIA® Jetson AGX Orin™ Embedded AI Computing System



^ AI-based Robots



- Advanced NVIDIA® Jetson AGX Orin™ platform delivers up to 275 TOPS AI performance
- Based on NVIDIA Nova Orin™, fully supports NVIDIA Isaac™ Perceptor Software Stack for AI Robot Development on NVIDIA Isaac™ ROS
- Supports 8 GMSL 1/2 automotive cameras with Fakra-Z connectors
- 1 1000Base-T1 LAN, 4 M12 PoE+ GigE LAN
- Built-in Bosch 6-axis IMU, Altimeter, Magnetometer
- IP66, DC 9V to 50V, Software Ignition Power Control

∨ Construction Robot



^ Autonomous Machine



Specifications

System

CPU	R32 : 8-core Arm® Cortex®-A78AE v8.2 64-bit CPU R64 : 12-core Arm® Cortex®-A78AE v8.2 64-bit CPU
GPU	R32 : 1792-core NVIDIA Ampere™ architecture GPU with 56 Tensor Cores R64 : 2048-core NVIDIA Ampere™ architecture GPU with 64 Tensor Cores
DL Accelerator	2x NVDLA Engines
Memory	R32 : 1 32GB LPDDR5 DRAM R64 : 1 64GB LPDDR5 DRAM
OS	Linux Ubuntu 22.04 with NVIDIA JetPack 6

I/O Interface

USB	2 USB 3.1 Gen 2 Type-C
Serial	1 M12 COM RS-232/422/485
CAN Bus	2 Isolated CAN Bus support Flexible Data-rate
DIO	12 Isolated DIO (6 DI, 6 DO)
Micro USB	- 1 Micro USB console debug port - 1 Micro USB OS flash port
Button	- 1 Power Button - 1 Force Recovery Button - 1 Reset Button
LED	Power, SSD
SIM	2 SIM Card Socket
Antenna	6 Antenna for 5G/WiFi/4G/LTE/GPRS/UMTS

Expansion

PCIe (Optional)	1 PCIe x8 Slot (by request)
M.2	- 1 M.2 Key B Socket (3042/3052, USB) - 1 M.2 Key B Socket (3042/3052, PCIe) - 1 M.2 Key E Socket (2230/3042, PCIe/USB/UART)

Graphics

Interface	1 Digital Display, up to 4K60
Video Encode	R32 : 1x 4K @60, 3x 4K @30, 6x 1080p @60 (HEVC) R64 : 2x 4K @60, 4x 4K @30, 8x 1080p @60 (HEVC)
Video Decode	R32 : 1x 8K @30, 4x 4K @30, 9x 1080p @60 (HEVC) R64 : 1x 8K @30, 7x 4K @30, 11x 1080p @60 (HEVC)

Camera

GMSL	8 Fakra-Z connectors for GMSL 1/2 automotive cameras
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Sensor

IMU	Bosch BMI088
Magnetometer	Bosch BMM350
Altimeter	Bosch BMP581

Storage

M.2	2 M.2 Key M Socket (2280)
eMMC	1 eMMC 5.1, 64GB
SD	1 Micro SD (External)

Ethernet

LAN 1	10/100/1000 Base-T1 Ethernet GigE LAN, SPE Connector
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PoE

LAN 2 to LAN 5	Intel i350 GigE IEEE 802.3at (25.5W/48V) PoE+ LAN, M12 X-coded Connector
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Power

Power Input	DC 9V to 50V
Power Interface	6-pin M23 Connector
Ignition Control	16-mode Software Ignition Control

Others

TPM	Infineon SLB9673 XU2.0 FW26.10, I2C Interface (Optional)
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Mechanical

Dimensions	260 mm x 195 mm x 95 mm (10.24" x 7.68" x 3.74")
Weight	5.5 kg (12.13lb)
Mounting	Wallmount

Environment

Operating Temp.	50W TDP with 60W PoE load : -25°C to 60°C (-13°F to 140°F) 50W TDP without PoE load : -25°C to 75°C (-13°F to 167°F)
Storage Temp.	-40°C to 85°C (-40°F to 185°F)
Humidity	5% to 95% Humidity, non-condensing
Relative Humidity	95% @75°C
Shock	Operating, MIL-STD-810H, Method 516.8, Procedure I
Vibration	Operating, MIL-STD-810H, Method 514.7, Procedure I, Category 4
EMC	CE, FCC, EN50155, EN50121-3-2, EN62368-1

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Order Information

Model Name	Platform	RAM	LAN	USB 3.1	Serial	Iso. CAN	Iso. DIO	PoE+	GMSL	SIM	M.2
NAC-1000-R32	Jetson AGX Orin	32GB	5	2	1	2	12	4	8	2	4
NAC-1000-R64		64GB									

Accessories

PWA-160WB-WT	160W, 24V, 85V AC to 264V AC Power Adapter with 3-pin Terminal Block, Wide Temperature -30°C to +70°C
PWA-180WB	180W, 24V, 90V AC to 264V AC Power Adapter with 3-pin Terminal Block
PWA-280WB-WT	280W, 24V, 85V AC to 264V AC Power Adapter with 3-pin Terminal Block, Wide Temperature -30°C to +70°C
GMSL Camera Kit	GMSL Camera with Fakra-Z connector
M.2 Storage Module	M.2 Key M/Key B PCIe Storage Module
5G Module	5G Module with Antenna
4G Module	4G/GPS Module with Antenna
RTK GPS Module	RTK GPS Module with Antenna
WiFi & Bluetooth	WiFi & Bluetooth Module with Antenna

Dimensions & Drawing

Unit : mm (inch)

