

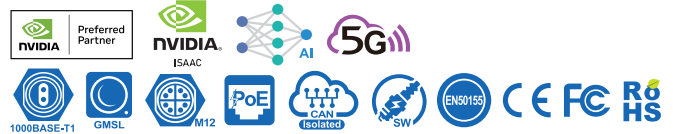
# NAC-1000

Arm-based Edge AI Computing  
NVIDIA® Jetson AGX Orin™ Embedded AI Computing System



## Features

- Advanced NVIDIA® Jetson AGX Orin™ platform delivers up to 275 TOPS AI performance
- 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
- Supports multiple 5G/4G/WiFi/BT/LTE/GPRS/UMTS wireless connection
- IP66, DC 9V to 50V, Software Ignition Power Control



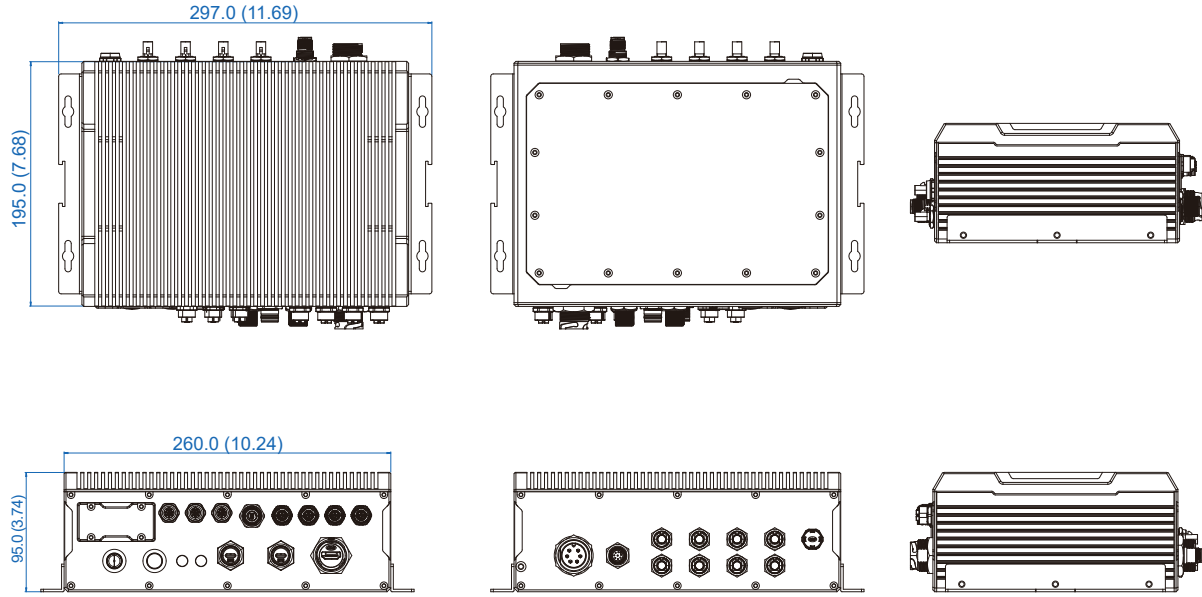
## Specifications

System	
<b>CPU</b>	<b>R32</b> : 8-core Arm® Cortex®-A78AE v8.2 64-bit CPU <b>R64</b> : 12-core Arm® Cortex®-A78AE v8.2 64-bit CPU
<b>GPU</b>	<b>R32</b> : 1792-core NVIDIA Ampere™ architecture GPU with 56 Tensor Cores <b>R64</b> : 2048-core NVIDIA Ampere™ architecture GPU with 64 Tensor Cores
<b>DL Accelerator</b>	2x NVDLA Engines
<b>Memory</b>	<b>R32</b> : 1 32GB LPDDR5 DRAM <b>R64</b> : 1 64GB LPDDR5 DRAM
<b>OS</b>	Linux Ubuntu 22.04 with NVIDIA JetPack 6
I/O Interface	
<b>USB</b>	2 USB 3.1 Gen 2 Type-C
<b>Serial</b>	1 M12 COM RS-232/422/485
<b>CAN Bus</b>	2 Isolated CAN Bus support Flexible Data-rate
<b>DIO</b>	12 Isolated DIO (6 DI, 6 DO)
<b>Micro USB</b>	<ul style="list-style-type: none"> <li>1 Micro USB console debug port</li> <li>1 Micro USB OS flash port</li> </ul>
<b>Button</b>	<ul style="list-style-type: none"> <li>1 Power Button</li> <li>1 Force Recovery Button</li> <li>1 Reset Button</li> </ul>
<b>LED</b>	Power, SSD
<b>SIM</b>	2 SIM Card Socket
<b>Antenna</b>	6 Antenna for 5G/WiFi/4G/LTE/GPRS/UMTS
Expansion	
<b>PCIe (Optional)</b>	1 PCIe x8 Slot (by request)
<b>M.2</b>	<ul style="list-style-type: none"> <li>1 M.2 Key B Socket (3042/3052, USB)</li> <li>1 M.2 Key B Socket (3042/3052, PCIe)</li> <li>1 M.2 Key E Socket (2230/3042, PCIe/USB/UART)</li> </ul>
Graphics	
<b>Interface</b>	1 Digital Display, up to 4K60
<b>Video Encode</b>	<b>R32</b> : 1x 4K @60, 3x 4K @30, 6x 1080p @60 (HEVC) <b>R64</b> : 2x 4K @60, 4x 4K @30, 8x 1080p @60 (HEVC)
<b>Video Decode</b>	<b>R32</b> : 1x 8K @30, 4x 4K @30, 9x 1080p @60 (HEVC) <b>R64</b> : 1x 8K @30, 7x 4K @30, 11x 1080p @60 (HEVC)
Camera	
<b>GMSL</b>	8 Fakra-Z connectors for GMSL 1/2 automotive cameras

Sensor	
<b>IMU</b>	Bosch BMI088
<b>Magnetometer</b>	Bosch BMM350
<b>Altimeter</b>	Bosch BMP581
Storage	
<b>M.2</b>	2 M.2 Key M Socket (2280)
<b>eMMC</b>	1 eMMC 5.1, 64GB
<b>SD</b>	1 Micro SD (External)
Ethernet	
<b>LAN 1</b>	10/100/1000 Base-T1 Ethernet GigE LAN, SPE Connector
PoE+	
<b>LAN 2 to LAN 5</b>	Intel i350 GigE IEEE 802.3at (25.5W/48V) PoE+ LAN, M12 X-coded Connector
Power	
<b>Power Input</b>	DC 9V to 50V
<b>Power Interface</b>	6-pin M23 Connector
<b>Ignition Control</b>	16-mode Software Ignition Control
Others	
<b>TPM</b>	Infineon SLB9673 XU2.0 FW26.10, I2C Interface (Optional)
Mechanical	
<b>Dimensions</b>	260mm x 195mm x 95 mm (10.24" x 7.68" x 3.74")
<b>Weight</b>	5.5 kg (12.13lb)
<b>Mounting</b>	Wallmount
Environment	
<b>Operating Temperature</b>	<b>50W TDP with 60W PoE load:</b> -25°C to 60°C (-13°F to 140°F) <b>50W TDP without PoE load:</b> -25°C to 75°C (-13°F to 167°F)
<b>Storage Temperature</b>	-40°C to 85°C (-40°F to 185°F)
<b>Humidity</b>	5% to 95% Humidity, non-condensing
<b>Relative Humidity</b>	95% @75°C
<b>Shock</b>	Operating, MIL-STD-810H, Method 516.8, Procedure I
<b>Vibration</b>	Operating, MIL-STD-810H, Method 514.7, Procedure I, Category 4
<b>EMC</b>	CE, FCC, EN50155, EN50121-3-2, EN62368-1

## Dimensions

Unit : mm/ inch



## 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

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