

Nuvo-9160GC Series

Ruggedized AI Inference Platform supporting 130W NVIDIA® RTX GPU and Intel® 13th/ 12th-Gen Core™ Processor



Key Features

- Supports Intel® 13th/ 12th-Gen Core™ up to 24C/ 32T 35W/ 65W CPU
- Support NVIDIA® RTX series GPU card up to 130W TDP
- -25°C to 60°C wide temperature rugged operation
- 5x 2.5GbE and 1xGbE with optional PoE+ (ports 3~6)
- 1x USB 3.2 Gen2x2 type-C and 6x USB 3.2 type-A ports
- M.2 2280 M key socket (Gen4x4) supporting NVMe SSD
- Accommodates two 2.5" SATA HDD/ SSD with RAID 0/ 1 support
- MezzIO® interface for add-on expansion

[Contact Neosys](#)
[Get Quote](#)

*R.O.C Patent No. M534371/ M456527

Introduction

Nuvo-9160GC is a rugged edge AI computer that delivers superior CPU and GPU performance by leveraging Intel's 13th/12th-Gen platform and NVIDIA's 130W RTX GPU card.

Benefiting from the cutting-edge Intel® 7 photolithography, Intel's 13th/ 12th Gen processors can offer up to 24 cores/ 32 threads with 2x the performance improvement compared to previous Intel 11th/ 10th Gen platforms. The latest NVIDIA® 130W RTX GPU contributes nearly 9 TFLOPS of FP32 performance to fuel real-time AI inference applications involving multiple cameras such as production line vision inspection, intelligent video analytics for surveillance or ITS, or autonomous mobile robot (AMR).

Nuvo-9160GC has a proven thermal design to guarantee reliable system operation from -25°C to 60°C. It features a passive-cooling design for the motherboard and segregated patented ventilation design* for the 130W GPU card within Neosys' patented expansion Cassette*. The support of six GigE cameras (or IP cameras) and six USB3 cameras makes Nuvo-9160GC ideal for various vision-based AI application deployments. It also provides flexible data storage options, including one M.2 2280 Gen4x4 NVMe providing up to 7000 MB/s extreme read/write speeds and two 2.5" SATA HDD/SSD to expand storage capacity.

With performance enhancements and comprehensive I/Os, Nuvo-9160GC is the perfect edge AI inference platform for industrial environments from factory automation, smart agriculture, and autonomous machines.

Specifications

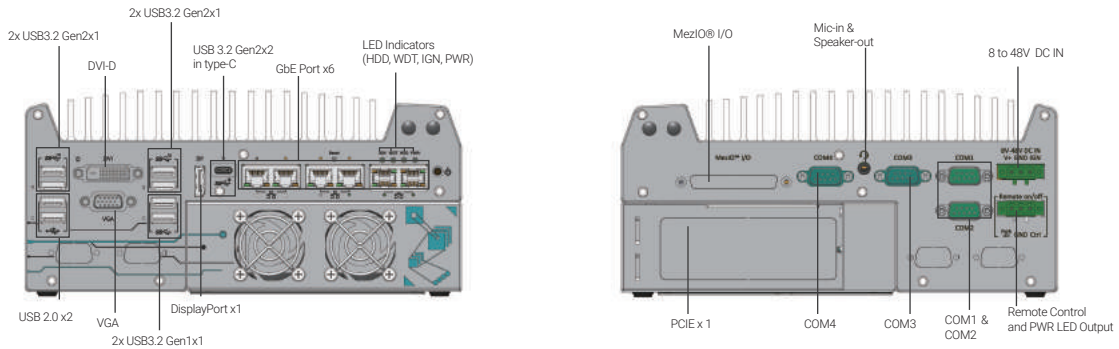
| System Core | | Expansion Bus | | |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Processor | Supporting Intel® 13th-Gen Core™ CPU (LGA1700 socket, 65W/ 35W TDP) - Intel® Core™ i9-13900E/ i9-13900TE - Intel® Core™ i7-13700E/ i7-13700TE - Intel® Core™ i5-13500E/ i5-13400E/ i5-13500TE - Intel® Core™ i3-13100E/ i3-13100TE | Supporting Intel® 12th-Gen Core™ CPU (LGA1700 socket, 65W/ 35W TDP) - Intel® Core™ i9-12900E/ i9-12900TE - Intel® Core™ i7-12700E/ i7-12700TE - Intel® Core™ i5-12500E/ i5-12500TE - Intel® Core™ i3-12100E/ i3-12100TE - Intel® Pentium® G7400E/ G7400TE - Intel® Celeron® G6900E/ G6900TE | PCI Express | 1x PCIe x16 slot@Gen3, 16-lanes PCIe signals in Cassette for installing an NVIDIA® graphics card up to 130W TDP (Max. graphics card dimension is 188 mm(L) x 131 mm(W), dual slot allocation) |
| Chipset | Intel® Q670E Platform Controller Hub | Mini PCI Express | 1x full-size mini PCI Express socket | |
| Graphics | Integrated Intel® UHD Graphics 770 (32EU) / 730 (24EU) | M.2 | 1x M.2 3042/3052 B key socket with SIM slot for M.2 4G/ 5G module | |
| Memory | Up to 64 GB DDR5 4800 SDRAM (two SODIMM slots) | Expandable I/O | 1x MezzIO® expansion port for Neosys MezzIO® modules | |
| AMT | Supports Intel vPro/ AMT 16.0 | Power Supply | | |
| TPM | Supports dTPM 2.0 | DC Input | 1x 3-pin pluggable terminal block for 8 to 48V DC input | |
| I/O Interface | | Remote Ctrl. & LED Output | 1x 3-pin pluggable terminal block for remote control and PWR LED output | |
| Ethernet | 5x 2.5G Ethernet by I225-IT and 1x Gigabit Ethernet by I219-LM with screw-lock | Mechanical | | |
| PoE+ | Optional IEEE 802.3at PoE+ PSE for Port 3 – Port 6. 100W total power budget | Dimension | 240 mm (W) x 225 mm (D) x 110.5 mm (H) | |
| USB 3.2 | 1x USB 3.2 Gen2x2 (20 Gbps) port in type-C connector with screw-lock 4x USB 3.2 Gen2x1 (10 Gbps) ports in type-A connectors 2x USB 3.2 Gen1x1 (5 Gbps) ports in type-A connectors | Weight | 3.89 kg | |
| USB 2.0 | 2x USB 2.0 ports | Mounting | Wall-mount (standard) or damping bracket (optional) | |
| Video Port (Integrated Graphics) | 1x VGA connector, supporting 1920 x 1200 resolution 1x DVI-D connector, supporting 1920 x 1200 resolution 1x DisplayPort connector, supporting 4096 x 2304 resolution | Environmental | | |
| Serial Port | 2x software-programmable RS-232/ 422/ 485 ports (COM1/COM2) 2x RS-232 ports (COM3/COM4) | Operating Temperature | With 35W CPU and 130W GPU -25°C to 60°C** With 65W CPU and 130W GPU -25°C to 60°C**/** (configured as 35W TDP) -25°C to 50°C**/** (configured as 65W TDP) | |
| Audio | 1x 3.5 mm jack for mic-in and speaker-out | Storage Temperature | -40°C to 85°C | |
| Storage Interface | | Humidity | 10% to 90% , non-condensing | |
| SATA HDD | 2x internal SATA port for 2.5" HDD/ SSD installation, supporting RAID 0/ 1 | Vibration | Operating, MIL-STD-810G, Method 514.6, Category 4 (with optional damping bracket) (pending) | |
| M.2 | 1x M.2 2280 M key socket (PCIe Gen4 x4) for NVMe SSD | Shock | Operating, MIL-STD-810G, Method 516.6, Procedure I, Table 516.6-II (with optional damping bracket) (pending) | |
| | | EMC | CE/FCC Class A, according to EN 55032 & EN 55035 (pending) | |

* Due to I225-IT specification limitation, for systems running 2.5G Ethernet link speeds, please limit the operating temperature to 60°C.

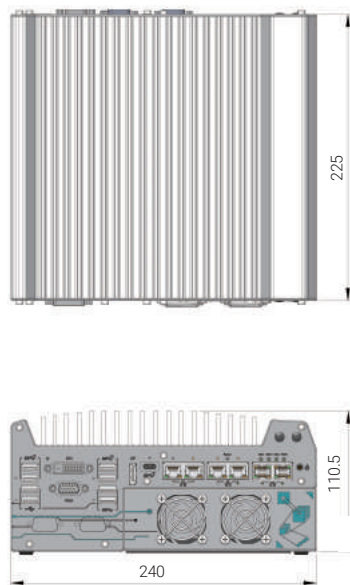
** For sub-zero operating temperature, a wide temperature HDD or Solid State Disk (SSD) is required.

*** For CPU operating at 65W mode, the highest operating temperature shall be limited to 50°C and thermal throttling may occur when sustained full-loading applied. Users can configure CPU power in BIOS to allow higher operating temperature.

Appearance



Dimensions



Unit : mm

Ordering Information

| Model No. | Product Description |
|--------------------|------------------------------------------------------------------------------------------------------------|
| Nuvo-9160GC | Ruggedized AI Inference Platform supporting 130W NVIDIA® RTX GPU and Intel® 13th/ 12th-Gen Core™ Processor |
| PoE+ Option | Option of 802.3at PoE + PSE for 2.5GbE port 3 ~ port 6 |

Optional Accessories

| | |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Dmpbr-Nuvo9160 | Neosys' patented damping brackets assembly for Nuvo-9166GC |
| PA-280W-ET2 | 280W AC/DC power adapter 24V/11.67A; 16AWG/100cm; cord end terminals for terminal block, operating temperature : -30°C to 60°C. |
| PA-600W-ENC | 600W AC/DC power adapter 24V/25A; cord end terminals for terminal block, operating temperature : -20°C to 70°C. |

MeziO® Modules

| | |
|----------------------|-----------------------------------------------------------------------------------|
| MeziO®-C180 | MeziO® module with 4x RS-232/ 422/ 485 ports and 4x RS-232 ports |
| MeziO®-C181 | MeziO® module with 4x RS-232/ 422/ 485 ports and 4x RS-422/ 485 ports |
| MeziO®-D220 | MeziO® module with 8-CH isolated digital input and 8-CH isolated digital output |
| MeziO®-D230 | MeziO® module with 16-CH isolated digital input and 16-CH isolated digital output |
| MeziO®-V20-EP | MeziO® module with ignition power control function for in-vehicle application |
| MeziO®-U4 | MeziO® module with 4x USB 3.1 ports |
| MeziO®-G4 | MeziO® module with 4x GigE ports |
| MeziO®-G4P | MeziO® module with 4x IEEE 802.3at PoE+ ports |

Only Nuvo-9006DE-PoE support MeziO-G4P