

Nuvo-7160GC Series

Ruggedized GPU-Computing Platform Supporting 120W NVIDIA® GPU and Intel® 9th/8th-Gen Core™ Processor



CE FC

Key Features

- Supports NVIDIA® GPU graphics card up to 120W TDP
- Patented thermal design to allow -25°C to 60°C* Wide temperature operation
- Intel® 9th/ 8th-Gen Core™ hexa-core 65W/ 35W LGA1151 CPU
- 6x GigE ports, supporting 9.5 KB jumbo frame
- M.2 2280 M key socket (Gen3 x4) supporting NVMe SSD or Intel® Optane™ memory
- 4x USB 3.1 Gen2 ports and 4x USB 3.1 Gen1 ports
- Accommodates two 2.5" SATA HDD/ SSD with RAID 0/ 1 support
- Compatible with MeziO™ interface for function expansion
- Patented ventilation design* for graphics card

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

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Nuvo-7160GC is a ruggedized GPU-aided edge computer designed for modern machine learning applications such as autonomous driving, facial recognition and machine vision. It supports up to a 120W GPU, delivering 4~6 TFLOPS computing power for inference, as well as Intel® 9th/ 8th-Gen Core™ 6-core/ 8-core CPU, offering up to 50% CPU performance enhancement over previous generations.

Thanks to Neosys' patented Cassette design and ingenious ventilation mechanism, Nuvo-7160GC can effectively dissipate the heat generated by the GPU. By introducing the guided airflow from intake to exhaust with powerful fans featuring smart fan control, it allows a 120W GPU to operate at 60°C ambient temperature under 100% GPU loading.

Nuvo-7160GC incorporates rich I/O functions such as USB 3.1 Gen2/ Gen1, GbE, COM and MeziO™ interface in its restricted footprint. It also leverages cutting-edge M.2 NVMe SSD technology for over 2000MB/s disk read/ write speed or Intel® Optane™ memory for the ultimate system acceleration. Neosys Nuvo-7160GC is the ideal solution for emerging edge computing by combining exceptional CPU and GPU performances.

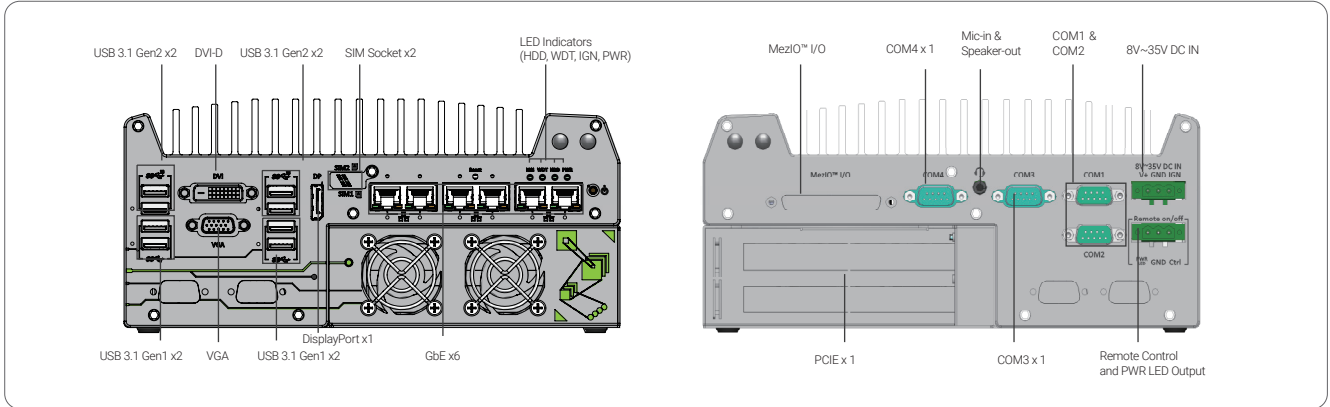
Specifications

| System Core | | Internal Expansion Bus | |
|---|--|--------------------------------------|---|
| Processor | Supporting Intel® 9th/ 8th-Gen CPU (LGA1151 socket, 65W/ 35W TDP) - Intel® Core™ i7-8700/ i7-8700T/ i7-9700E/ i7-9700TE - Intel® Core™ i5-8500/ i5-8500T/ i5-9500E/ i5-9500TE - Intel® Core™ i3-8100/ i3-8100T/ i3-9100E/ i3-9100TE | PCI/PCI Express | 1x PCIe x16 slot@Gen3, 16-lanes PCIe signals in Cassette for installing an NVIDIA® graphics card up to 120W TDP (Max. graphics card dimension is 188 mm(L) x 121 mm(W), dual slot allocation) |
| Chipset | Intel® Q370 platform controller hub | Mini PCI Express | 1x full-size mini PCI Express socket with internal SIM socket (mux with mSATA) |
| Graphics | Integrated Intel® UHD graphics 630 | M.2 | 1x M.2 2242 B key socket with dual front-accessible SIM sockets, supporting dual SIM mode with selected M.2 LTE module |
| Memory | Up to 64 GB DDR4 2666/ 2400 SDRAM (two SODIMM slots) | Expandable I/O | 1x MeziO™ expansion port for Neosys MeziO™ modules |
| AMT | Supports AMT 12.0 | Power Supply | |
| TPM | Supports TPM 2.0 | DC Input | 1x 3-pin pluggable terminal block for 8~35VDC DC input |
| I/O Interface | | Remote Ctrl. & LED Output | 1x 3-pin pluggable terminal block for remote control and PWR LED output |
| Ethernet | 6x Gigabit Ethernet ports by I219 and 5x I210 | Mechanical | |
| PoE+ | Optional IEEE 802.3at PoE+ PSE for Port 3 ~ Port 6 100 W total power budget | Dimension | 240 mm (W) x 225 mm (D) x 111 mm (H) |
| USB 3.1 | 4x USB 3.1 Gen2 (10 Gbps) ports 4x USB 3.1 Gen1 (5 Gbps) ports | Weight | 4.5 Kg |
| Video Port (Integrated Graphics) | 1x VGA , supporting 1920 x 1200 resolution 1x DVI-D, supporting 1920 x 1200 resolution 1x DisplayPort, supporting 4096 x 2304 resolution | Mounting | Wall-mount (standard) or DIN-rail mount (optional) |
| Serial Port | 2x software-programmable RS-232/422/485 ports (COM1/ COM2) 2x RS-232 ports (COM3/ COM4) | Environmental | |
| Audio | 1x 3.5 mm jack for mic-in and speaker-out | Operating Temperature | With 35W CPU and 120W GPU -25°C ~ 60°C ** With 65W CPU and 120W GPU -25°C ~ 60°C **/** (configured as 35W TDP) -25°C ~ 50°C **/** (configured as 65W TDP) |
| Storage Interface | | Storage Temperature | -40°C ~ 85°C |
| SATA HDD | 2x internal SATA port for 2.5" HDD/ SSD installation, supporting RAID 0/ 1 | Humidity | 10%~90% , non-condensing |
| M.2 | 1x M.2 2280 M key socket (PCIe Gen3 x4) for NVMe SSD or Intel® Optane™ memory installation | Vibration | Operating, MIL-STD-810G, Method 514.6, Category 4 |
| mSATA | 1x full-size mSATA port (mux with mini-PCIe) | Shock | Operating, MIL-STD-810G, Method 516.6, Procedure I, Table 516.6-II |
| | | Safety | EN62368-1 |
| | | EMC | CE/FCC Class A, according to EN 55032 & EN 55024 |

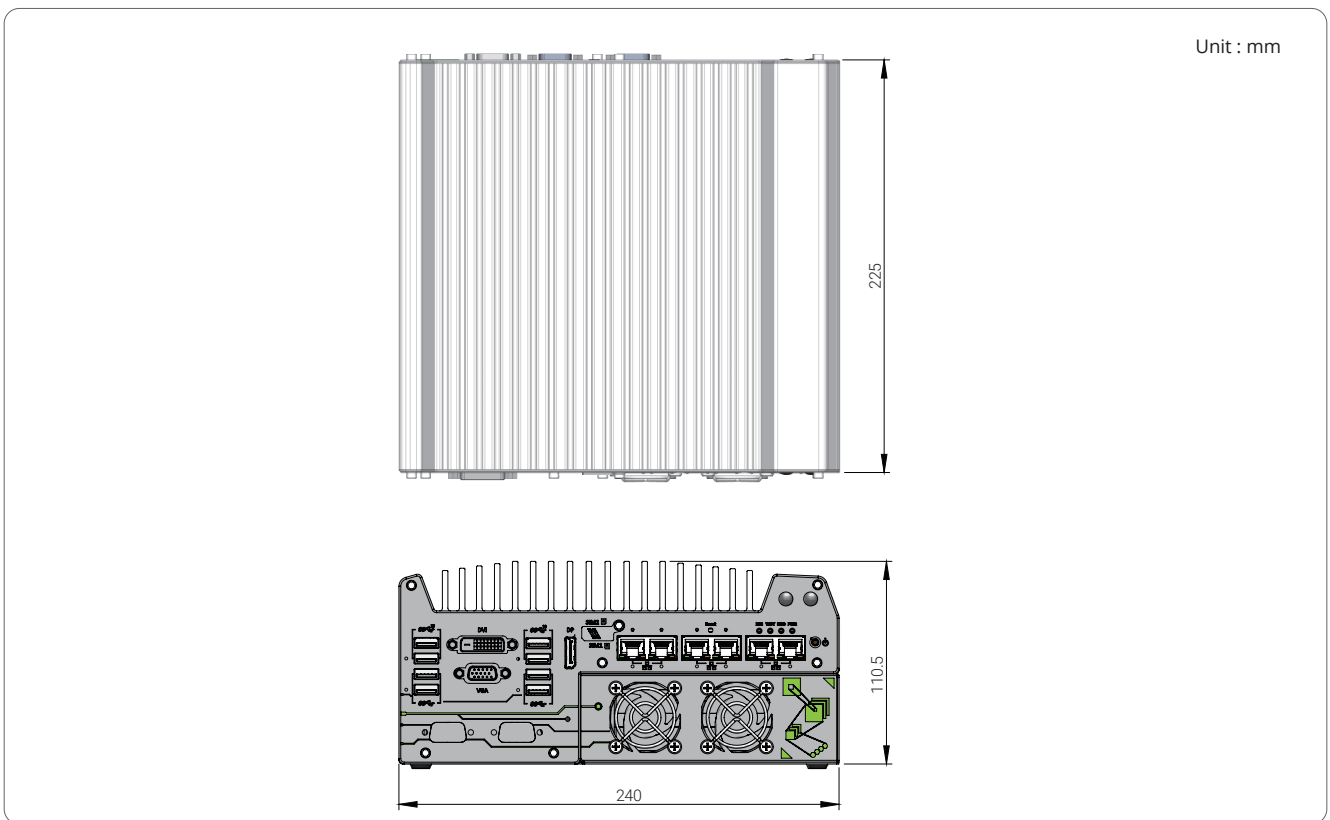
* For i7-9700E and i7-8700 running at 65W mode, the highest operating temperature shall be limited to 50°C and thermal throttling may occur when sustained full-loading applied. Users can configure CPU power in BIOS to obtain higher operating temperature.

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

Appearance



Dimensions



Ordering Information

| Model No. | Product Description |
|---|--|
| Nuvo-7160GC | Intel® 9th/8th-Gen Core™ GPU-computing platform with 6x GbE and MeziO™ interface, supporting selected NVIDIA® 120W GPU |
| <i>Optional IEEE 802.3at PoE+ for GbE ports 3 ~ 6</i> | |

Optional Accessories

| | |
|------------------------|---|
| 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. |
| Damping bracket | Neosys' patented damping brackets assembly for Nuvo-7160GC/ Nuvo-7164GC |

MeziO™ Modules

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

Only Nuvo-7160-PoE support MeziO-G4P