

Nuvo-7166GC Series

AI Inference Platform with Intel® Core™ 9th/8th Gen. and NVIDIA® Tesla T4 Support

BRESSNER
A ONE STOP SYSTEMS COMPANY

Features

- Intel® Core™ i7/i5/i3 9th/8th Gen. CPU
- 2x DDR4 2,666/2,400 SDRAM, up to 64GB
- Intel® Q370 chipset
- Supports NVIDIA® L4/ T4/ A2 GPU
- 6x GigE ports, 802.3at PoE+- option available



Nuvo-7166GC Series – Strong computing power and robust design

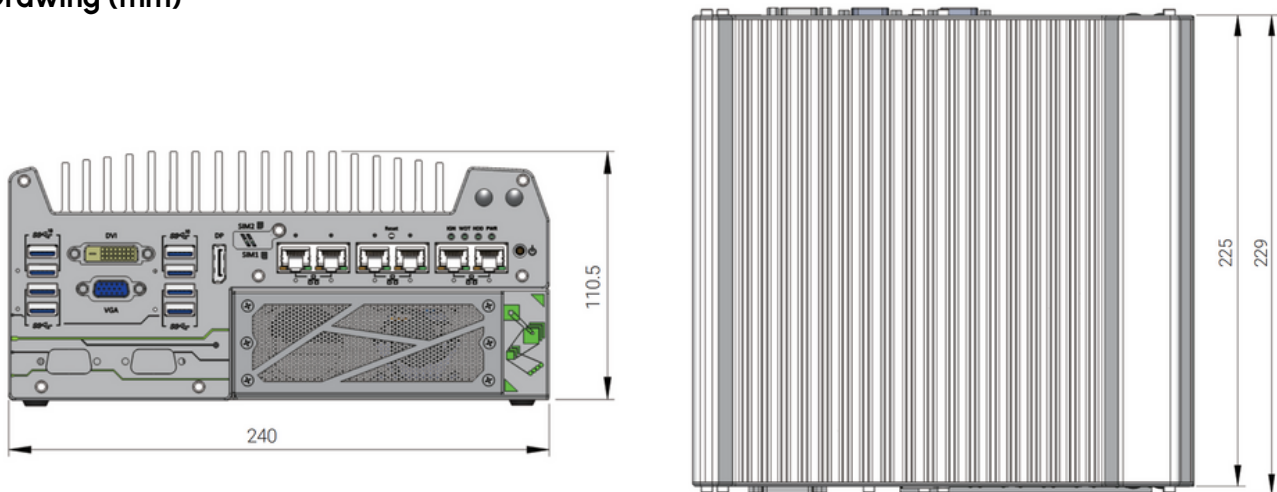
The Nuvo-7166GC series is a range of rugged AI inference platforms with 2 PCIe slots. Each of these can accommodate an NVIDIA® Tesla T4 GPU for faster computation of inferences, enabling the platform to perform up to 8.1 TFLOPS in the FP32 benchmark and 130 TOPs in the INT8 benchmark for real-time inferencing based on a trained neural network model. With its Intel® 9th Gen/8th Gen Coffee Lake Core™ processor (6/8 cores) and 64 GB DDR4-2666 RAM, the platform offers a balanced ratio of CPU, GPU and memory performance.

The Nuvo-7166GC uses a patented cartridge module that is designed with a specially engineered ventilation channel that directs air from the air intake past the passive heat sink of the NVIDIA® Tesla T4 GPU. In the event that you equip the platform with a second high-performance PCIe card, the cassette module also has a second fan to provide the necessary airflow. The cooling design guarantees operation in ambient temperatures of up to 60°C even under continuous full load of CPU and GPU.

The system incorporates the latest I/O technologies to increase overall system flexibility, functionality and performance. It features an M.2 NVMe interface for super-fast hard drive access and USB 3.1 Gen2, GbE and PoE ports for data transfer. The cartridge module also provides an additional Gen3 x8 PCIe slot for installing a high performance PCIe card. Alternatively, a variety of sensor and frame grabber cards are available for this slot.

With its combination of inferential computing power, powerful CPU and expansion capabilities, the Nuvo-7166GC is the perfect rugged platform for versatile edge AI applications.

Drawing (mm)



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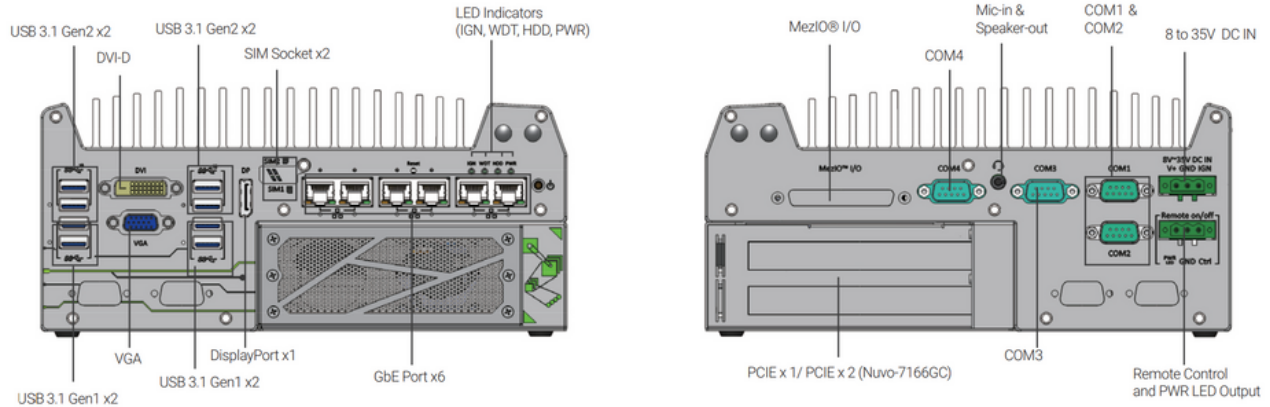
Specifications	Nuvo-7166GC Series
SYSTEM	
CPU	Supporting Intel® 9th/ 8th-Gen CPU (LGA1151 socket, 65W/ 35W TDP) – Intel® Core™ i7-8700/ i7-8700T/ i7-9700E/ i7-9700TE – Intel® Core™ i5-8500/ i5-8500T/ i5-9500E/ i5-9500TE – Intel® Core™ i3-8100/ i3-8100T/ i3-9100E/ i3-9100TE
Chipset	Intel® Q370 Platform Controller Hub
Graphics	Integrated Intel® UHD graphics 630
RAM	Up to 64GB DDR4 2,666/ 2,400 SDRAM (two SODIMM slots)
Storage	2x internal SATA ports for 2.5" HDD/ SSD installation, supporting RAID 0/1 1x M.2 2280 M key NVMe socket (PCIe Gen3/ x4) for NVMe SSD installation 1x full-size mSATA port (mux with mini-PCIe)
AMT	Supports AMT 12.0
TPM	Supports TPM 2.0
Expansion	2x PCIe x16 slot@Gen3, 8-lanes PCIe signal in Cassette for installing NVIDIA® L4/ T4/ A2 GPU and one additional PCIe card 1x full-size mini PCI Express socket with internal SIM socket (mux with mSATA) 1x M.2 2242 B key socket with dual front-accessible SIM sockets, supporting dual SIM mode with selected M.2 LTE module 1x MeziO™ expansion port for Neosys MeziO™ modules
INTERFACE	
Ethernet	6x Gigabit Ethernet ports by I219 and 5x I210 Optional IEEE 802.3at PoE+ PSE for port 3 ~ port 6 100 W total power budget
USB	4x USB 3.1 Gen2 (10 Gbps) ports 4x USB 3.1 Gen1 (5 Gbps) ports
COM	COM 1/2: 2x software-programmable RS-232/422/485 ports COM 3/4: 2x RS-232 ports
Video	1x VGA connector, supporting 1,920 x 1,200 resolution 1x DVI-D connector, supporting 1,920 x 1,200 resolution 1x DisplayPort connector, supporting 4,096 x 2,304 resolution
Audio	1x 3.5 mm jack for mic-in and speaker-out
ENVIRONMENTAL	
Power Supply	1x 3-pin pluggable terminal block for 8V to 35V DC input
Remote Control & LED	1x 3-pin pluggable terminal block for remote control and PWR LED output
Operating Temperature	With 35W CPU: -25° ~ 60°C ** With 65W CPU: -25° ~ 60°C */** (configured as 35W TDP) -25° ~ 50°C */** (configured as 65W TDP) In compliance with NVIDIA® L4/ T4/ A2 warranty policy, an operating temperature of 0°C~50°C is required for systems with L4/ T4/ A2 installed
Storage Temperature	-40° ~ 85°C
Vibration/Shock Resistance	Vibration: Operating, MIL-STD-810G, Method 514.6, Category 4 Shock: Operating, MIL-STD-810G, Method 516.6, Procedure I, Table 516.6-II
Humidity	10 ~ 90%, non-condensing
Dimensions	240 (W) x 225 (D) x 110.5 (H) mm
Weight	4.5kg (including CPU, GPU, memory and HDD)
Mounting	Wallmount bracket or optional DIN rail mounting
Certifications	CE/FCC Class A, according to EN 55032 & EN 55024

* For 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 range HDD or Solid State Disk (SSD) is required.

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Ordering Information	Product Description
Nuvo-7164GC	Intel® 8th/ 9th-Gen Core™ AI inference platform with 6x GbE and MeziO™, supporting NVIDIA® Tesla T4 GPU
Nuvo-7166GC	Intel® 8th/ 9th-Gen Core™ AI inference platform with 6x GbE and MeziO™, supporting NVIDIA® Tesla T4 GPU and one additional PCIe x16 slot
Optional IEEE 802.3at PoE+ for GbE ports 3 ~ 6	

Optional Accessories	
PA-280W-ET2	280W AC/DC power adapter 24V/11.67A; 1.6AWG/100cm; cord end terminals for terminal block, operating temperature : -30°C to 60°C.
Damping bracket	Neosys' patented damping bracket assembly for Nuvo-7160GC/ Nuvo-7164GC/ Nuvo-7166GC
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 USB3.0 ports
MeziO™ -G4	MeziO™ module with 4x GigE ports
MeziO™ -G4P	MeziO™ module with 4x IEEE 802.3at PoE ports

*Only Nuvo-7164GC-PoE and Nuvo-7166GC-PoE support MeziO-G4P