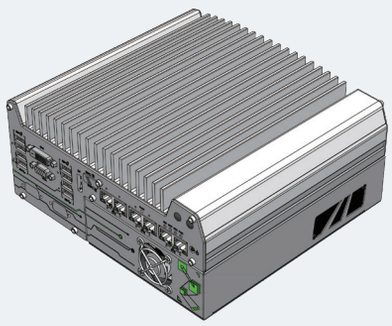
Nuvo-7168GC Series

Ruggedized AI Inference Platform Supporting NVIDIA® RTX A2000 and Intel® 9th/ 8th-Gen Core™ Processor



Key Features

- **Supports NVIDIA® RTX A2000 GPU**
- **-25°C to 60°C wide-temperature operation**
- **Intel® 9th/ 8th-Gen Core™ hexa-core 35W/ 65W LGA1151 CPU**
- **6x GigE ports, 802.3at PoE+ option available (ports 3~6)**
- **M.2 2280 M key NVMe (Gen3 x4) socket for fast storage access**
- **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**
- **MezIO™ interface for easy function expansion**

Preliminary

Introduction

Nuvo-7168GC series is a ruggedized AI inference platform supporting NVIDIA® RTX A2000 GPU which offers better longevity for industrial AI inference applications, such as machine vision inspection, machine automation, and intelligent video analytics. Operating with NVIDIA® RTX A2000, Nuvo-7168GC delivers 8 TFLOPS in FP32 GPU computing power for real-time AI inference.

Nuvo-7168GC inherits the market-proven passive cooling design for motherboard components; Neousys' patented Cassette module to segregate electrical and heat interferences; the innovative "tunneled " ventilation design for add-on cards that can efficiently dissipate the heat generated by RTX A2000, and together, they sustain optimum performance for both the CPU and GPU in high-temperature environments.

Nuvo-7168GC series offers an abundance of cutting-edge I/O connections. It has six GbE ports and eight USB3.1 ports for connecting to industrial cameras or IP cameras. An M.2 2280 NVMe interface is provided internally for fast storage access supporting over 2000 MB/s read/ write speeds. Moreover, Nuvo-7168GC supports Neousys' proprietary MezIO interface for further I/O expansions such as isolated DIO, COM ports, or more GbE ports.

By supporting RTX A2000, Nuvo-7168GC series provides a great cost/ performance ratio for AI inference computing and superior system longevity so users need not worry about the frequent change of GPU configuration. Nuvo-7168GC is the ideal ruggedized AI inference platform for emerging industrial edge AI applications.

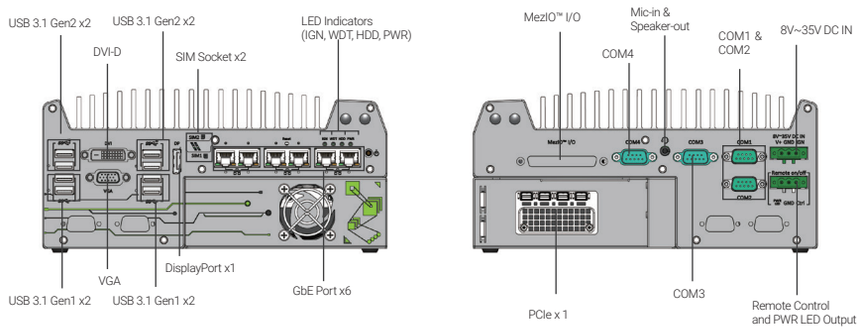
Specifications

System Core	
Processor	Supporting Intel® 9th/ 8th Gen Core™ CPU (LGA1151 socket, 65W/35W TDP) - Intel® Core™ i7-9700E/ i7-9700TE/ i7-8700/ i7-8700T - Intel® Core™ i5-9500E/ i5-9500TE/ i5-8500/ i5-8500T - Intel® Core™ i3-9100E/ i3-9100TE/ i3-8100/ i3-8100T
Chipset	Intel® Q370 platform controller hub
Graphics	Integrated Intel® UHD graphics 630
Memory	Up to 64 GB DDR4 2666/ 2400 SDRAM (two SODIMM slots)
AMT	Supports AMT 12.0
TPM	Supports TPM 2.0
I/O Interface	
Ethernet	6x Gigabit Ethernet ports by I219 and 5x I210
PoE+	Optional IEEE 802.3at PoE+ PSE for port 3 ~ port 6 100 W total power budget
USB 3.1	4x USB 3.1 Gen2 (10 Gbps) ports 4x USB 3.1 Gen1 (5 Gbps) ports
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
Serial Port	2x software-programmable RS-232/422/485 ports (COM1/ COM2) 2x RS-232 ports (COM3/ COM4)
Audio	1x 3.5 mm jack for mic-in and speaker-out
Storage Interface	
SATA HDD	2x internal SATA ports for 2.5" HDD/ SSD installation, supporting RAID 0/ 1
M.2 NVMe	1x M.2 2280 M key NVMe socket (PCIe Gen3 x4) for NVMe SSD installation
mSATA	1x full-size mSATA port (mux with mini-PCIe)

Internal Expansion Bus	
PCI/PCI Express	1x PCIe x16 slot@Gen3, 16-lanes PCIe signal in Cassette for installing RTX A2000 GPU
Mini PCI Express	1x full-size mini PCI Express socket with internal SIM socket (mux with mSATA)
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
Expandable I/O	1x MezIO™ expansion port for Neousys MezIO™ modules
Power Supply	
DC Input	1x 3-pin pluggable terminal block for 8 - 35V DC input
Remote Ctrl. & LED Output	1x 3-pin pluggable terminal block for remote control and PWR LED output
Mechanical	
Dimension	240 mm (W) x 225 mm (D) x 111 mm (H)
Weight	4.5 Kg
Mounting	Wall-mount mounting bracket
Environmental	
Operating Temperature	with 35W CPU and RTX A2000 -25°C ~ 60°C ** with 65W CPU and RTX A2000 -25°C ~ 60°C */ ** (configured as 35W TDP mode) -25°C ~ 50°C */ ** (configured as 65W TDP mode)
Storage Temperature	-40°C ~ 85°C
Humidity	10%~90% , non-condensing
Vibration	Operating, MIL-STD-810G, Method 514.6, Category 4
Shock	Operating, MIL-STD-810G, Method 516.6, Procedure I, Table 516.6-II
EMC	CE/FCC Class A, according to EN 55032 & EN 55035

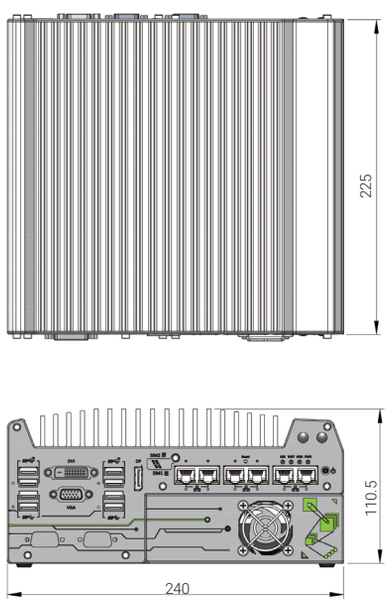
** For i7-9700E and i7-8700 running at 65W mode, the highest operating temperature shall be limited to 50°C and thermal throttling may occur when sustained full-loading applied. Users can configure CPU power in BIOS to obtain higher operating temperature.*
*** For sub-zero operating temperature, a wide temperature HDD or Solid State Disk (SSD) is required.*

Appearance



Dimensions

Unit : mm



Ordering Information

Model No.	Product Description
Nuvo-7168GC	Intel® 9th/ 8th-Gen Core™ AI Inference Platform with 6x GbE and MezIO™, supporting NVIDIA® RTX A2000
Optional IEEE 802.3at PoE+ for GbE ports 3 ~ 6	

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	Neousys' patented damping brackets assembly for Nuvo-7160GC/ Nuvo-7162GC/ Nuvo-7164GC/ Nuvo-7166GC/ 7168GC

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-7168GC-PoE support MezIO-G4P*