Nuvo-8108GC

Industrial-grade edge AI platform with Intel® Xeon®/ Core™
9th/8th Gen. CPUs and NVIDIA® GPU support

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Features

- Intel® Xeon®/ Core™ 9th/8th Gen. CPU
- 4x DDR4 2,133 SDRAM, up to 128GB
- Intel® C246 chipset
- Supports NVIDIA® GPU up to 250W
- Operating Temperature: -25 ° ~ 60 °C

## Nuvo-8108GC – Strong computing power and robust design

The Nuvo-8108GC is a rugged Edge AI platform in industrial PC design and suitable for use in vehicles. The platform is tailored to use a NVIDIA® high-end graphics card (250 Watts of power) and offers up to 14 TFLOPS of processing power at FP32 accuracy for new GPU-accelerated edge computing applications such as autonomous vehicles, visual inspection and monitoring/security.

The Nuvo-8108GC works with Intel® Xeon® E or 8/9 Gen Core™ CPUs (up to 8 processor cores/16 threads), together with the Intel® C246 chipset, which supports up to 128 GB of DDR4 memory (ECC or non-ECC). The system features an internal SATA connector for a 2.5-inch SATA hard disk or SSD drive and a hot-swappable 2.5-inch hard disk bay for easy drive replacement. There is also an M.2 2280 NVMe socket for fast read and write access. The GbE and USB 3.1 (Gen1/Gen2) ports are accessible from the front, and the cables are protected from being pulled out by a screwed locking mechanism. In addition to the x16 PCIe slot (8 lanes) for the GPUs, the Nuvo-8108GC has two additional x8 PCIe (4 lanes) and one x16 PCIe slot (8 lanes) to expand functionality for data acquisition and analysis or data exchange applications.

The Nuvo-8108GC features a power supply concept with input voltages from 8 to 35 V DC, which is also capable of supplying the power requirements of the 250 W GPU. The platform has a built-in ignition control and can therefore be mounted in vehicles without further preparation and supplied with power from the vehicle's on-board system. The mechanical features of the Nuvo-8108GC platform include a patented heat dissipation concept, vibration damping retaining clips and a pressure plate for GPUs (patent pending), which keep the platform ready for use even under extreme conditions and in different environments.

Thanks to its industrial grade power supply, heat dissipation and its well thought-out mechanics, this industrial PC brings AI inference applications with multiple uses from their traditional application scenario in computing environments of laboratories to practical applications where robust and reliable solutions are required.

Drawing (mm)
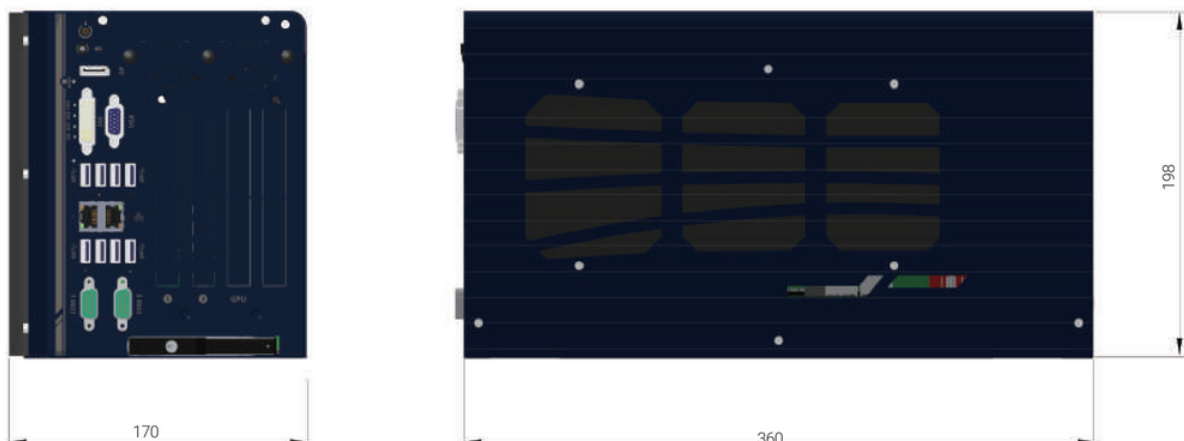
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Specifications	Nuvo-8108GC
SYSTEM	
CPU	Supporting Intel® Xeon® E and Core™ 9th/ 8th Gen CPU (LGA1151 socket) – Xeon E 2176G/ 2278GE (8C/16T) / 2278GEL (8C/16T) – i7-9700E, i7-9700TE, i7-8700, i7-8700T – i5-9500E, i5-9500TE, i5-8500, i5-8500T – i3-9100E, i3-9100TE, i3-8100, i3-8100T
Chipset	Intel® C246 Platform Controller Hub
Graphics	Independent GPU via x16 PEG port, or integrated Intel® UHD Graphics 630
RAM	Up to 128GB ECC/ non-ECC DDR4 2,133 SDRAM (four SODIMM slots)
Storage	1x hot-swappable HDD tray for 2.5" HDD/ SSD installation 1x Internal SATA port for 2.5" HDD/ SSD installation, supporting RAID 0/ 1 1x M.2 2280 M key socket (PCIe Gen3 x4) for NVMe SSD or Intel® Optane™ memory installation 2x full-size mSATA port (mux with mini-PCIe)
AMT	Supports AMT 12.0
TPM	Supports TPM 2.0
Expansion	2x PCIe x16 slots@Gen3, 8-lanes 2x PCIe x8 slots@Gen3, 4-lanes 1x M.2 2242 B key socket supporting dual SIM mode with selected M.2 LTE module 2x full-size mini PCI Express socket
INTERFACE	
Ethernet	1x Gigabit Ethernet port by Intel® I219-LM 1x Gigabit Ethernet port by Intel® I210-IT
USB	4x USB 3.1 Gen2 (10 Gbps) ports 4x USB 3.1 Gen1 (5 Gbps) ports 1x USB 2.0 ports (internal for dongle use)
COM	COM 1/2: software-programmable RS-232/ 422/ 485 ports
Video	1x VGA (supports 1,920 x 1,200 resolution) 1x DVI-D (supports 1,920 x 1,200 resolution) 1x Display Port (supports 4,096 x 2,304 resolution)
Audio	1x 3.5 mm mic-in and speaker-out
ENVIRONMENTAL	
Power Supply	2x 4-pin pluggable terminal block for 8 ~ 48V DC input with ignition control*
Operating Temperature	**With 35W CPU and one NVIDIA® 250W GPU:** -25°C ~ 60°C*** **With >= 65W CPU and one NVIDIA® 250W GPU:** -25°C ~ 60°C **/*** (configured as 35W TDP mode) -25°C ~ 50°C **/*** (configured as 65W TDP mode)
Storage Temperature	-40° ~ 85°C
Vibration/Shock Resistance	Vibration: Operating, MIL-STD-810G, Method 514.6, Category 4; and 3 Grms, 5-500 Hz, 3 Axes Shock: Operating, MIL-STD-810G, Method 516.6, Procedure I, Table 516.6-II
Humidity	10 ~ 90% , non-condensing
Dimensions	170 (W) x 360 (D) x 198 (H) mm
Weight	5kg
Mounting	Wallmount Neousys' patented damping brackets (standard)
Certifications	CE/ FCC Class A, according to EN 55024 & EN 55032

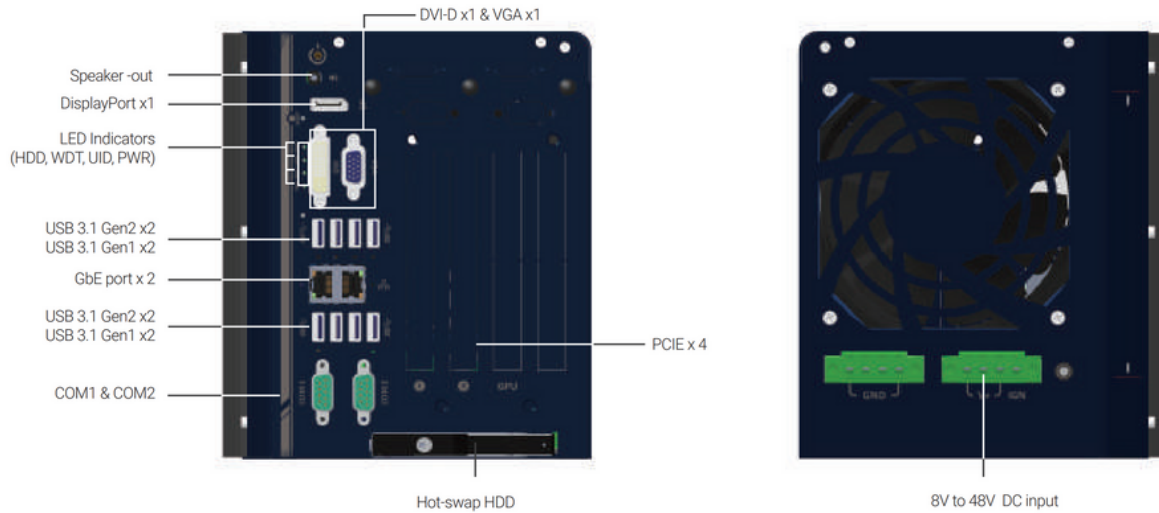* System load under 100W, the required DC input range is 8V to 48V
System load between 100W to 480W (single GPU), the required DC input range is 18V to 48V
** For i7-9700/ 8700 running at 65W mode, the highest operating temperature shall be limited to 50°C and thermal throttling may occur when sustained full-loading is applied. Users can configure CPU power in the BIOS to obtain higher operating temperatures.
*** For sub-zero operating temperature, a wide temperature HDD or Solid State Disk (SSD) is required

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Speaker -out
DisplayPort x1
LED Indicators
(HDD, WDT, UID, PWR)
USB 3.1 Gen2 x2
USB 3.1 Gen1 x2
GbE port x 2
USB 3.1 Gen2 x2
USB 3.1 Gen1 x2
COM1 & COM2
DVI-D x1 & VGA x1
PCIE x 4
Hot-swap HDD

8V to 48V DC input

Ordering Information	Nuvo-8108GC
Model No.	Industrial-grade edge AI platform supporting 250W NVIDIA® GPU Card, Intel® Xeon® E and 8th/ 9th-Gen Core™ processor with 8~35V widerange DC input and built-in ignition control

Optional Accessories	
PA-480W-DIN	480W AC-DC power Adapter(SDR-480-24) DIN-rail mount, 24V 20A, 90~264VAC/127~370VDC, Terminal Block, -20°C~70°C