Nuvo-8208GC

Industrial-grade GPU Computing Platform Supporting Dual 250W NVIDIA® Graphics Card, Intel® Xeon® E or 9th/ 8th-Gen Core™ Processor

◢ *Key Features*

· **Supports dual 250W NVIDIA® graphics cards up to 28 TFLOPS in FP32**
· **Supports Intel® Xeon® E or 9th/8th-Gen Core™ i7/ i5 LGA1151 CPU**
· **Up to 128GB ECC/ non-ECC DDR4 2133 (4x SODIMM)**
· **Two x8 (4-lanes), one x4(1-lane), Gen3 PCIe slots for add-on cards**
· **Two hot-swappable 2.5" SATA HDD/ SSD with RAID 0/ 1 support**
· **8 to 35V wide-range DC input with built-in ignition power control**
· **Patented thermal design for -25°C to 60°C rugged operation***
· **Patented damping brackets* to withstand 3 Grms vibration**

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CE FC

*R.O.C Patent No. M534371 / M491752

Introduction

Nuvo-8208GC is the world's first dual GPU platform with industrial-grade design and in-vehicle features. Designed specifically to support two high-end 250W NVIDIA® graphics cards, it offers tremendous GPU power up to 28 TFLOPS in FP32 for emerging GPU-accelerated edge computing, such as autonomous driving, vision inspection and surveillance/ security.

Nuvo-8208GC is powered by Intel® Xeon® E or 9th/ 8th-Gen Core™ 8-core/ 16-thread CPUs coupled with workstation-grade Intel® C246 chipset to support up to 128 GB ECC or non-ECC DDR4 memory. The system incorporates two hot-swappable 2.5" trays for easy HDD/ SSD replacement and an M.2 2280 NVMe socket for the ultimate disk performance. Its front-accessible GbE and USB 3.1 Gen1/ Gen2 ports feature screw-lock mechanisms for securing cable connections. In addition to the dual x16 PCIe slots for GPU installation, Nuvo-8208GC has two other x8 PCIe slots and one x4 PCIe slot for expansion cards to extend function sets like data collection, analytics and communication.

Nuvo-8208GC has a brand new power delivery design to accept 8 to 35V wide-range DC input and to handle heavy power requirements from dual 250W GPUs. Along with built-in ignition control, it's feasible to deploy it on a vehicle and directly power it via the car's power system. Mechanical wise, Nuvo-8208GC incorporates Neousys' patented heat dissipation design*, damping brackets* and patented GPU press bar**, making it steady and rock-solid in various conditions.

The Nuvo-8208GC is Neousys' response to the never-ending demand of TFLOPS in industrial GPU platforms. With industrial-grade power, thermal and mechanical design, it pushes versatile AI inference applications from laboratories to field applications, where reliability matters.

*R.O.C Patent No. I687801

Specifications

System Core

Processor	Supporting Intel® Xeon® E and 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
Memory	Up to 128 GB ECC/ non-ECC DDR4 2133 SDRAM (four SODIMM slots)
AMT	Supports AMT 12.0
TPM	Supports TPM 2.0

I/O Interface

Ethernet	1x Gigabit Ethernet port by Intel® I219-LM 1x Gigabit Ethernet port by Intel® I210-IT
Video Port	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)
USB3.1	4x USB 3.1 Gen2 (10 Gbps) ports 4x USB 3.1 Gen1 (5 Gbps) ports
USB 2.0	1x USB 2.0 port (internal for dongle use)
Audio	1x 3.5 mm jack for mic-in and speaker-out

Storage Interface

SATA	2x hot-swappable HDD trays for 2.5" HDD/ SSD installation
M.2	1x M.2 2280 M key socket (PCIe Gen3 x4) for NVMe SSD or Intel® Optane™ memory installation
mSATA	2x full-size mSATA port (mux with mini-PCIe)

Expansion Bus

PCI Express	2x PCIe x16 slot@Gen3, 8-lanes 2x PCIe x8 slots@Gen3, 4-lanes 1x PCIe x4 slot@Gen3, 1-lane
M.2	1x M.2 2242 B key socket supporting dual SIM mode with selected M.2 LTE module
mini-PCIe	2x full-size mini PCI Express socket

Power Supply

DC Input	2x 4-pin pluggable terminal block for 8 to 35V DC input with ignition control [1]

Mechanical

Dimension	225 mm (W) x 360 mm (D) x 186 mm (H)
Weight	8.6 Kg
Mounting	Wall-mount with damping brackets

Environmental

Operating Temperature	with 35W CPU and dual NVIDIA® 250W GPU -25°C ~ 60°C [3] with >= 65W CPU and dual NVIDIA® 250W GPU -25°C ~ 60°C [2]/[3] (configured as 35W TDP mode) -25°C ~ 50°C [2]/[3] (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; and 3 Grms, 5-500 Hz, 3 Axes
Shock	Operating, MIL-STD-810G, Method 516.6, Procedure I, Table 516.6-II
EMC	CE/ FCC Class A, according to EN 55024 & EN 55032

[1] *System load under 100W, the required DC input range is 8V to 35V*
 System load between 100W to 480W (single GPU), the required DC input range is 18V to 35V
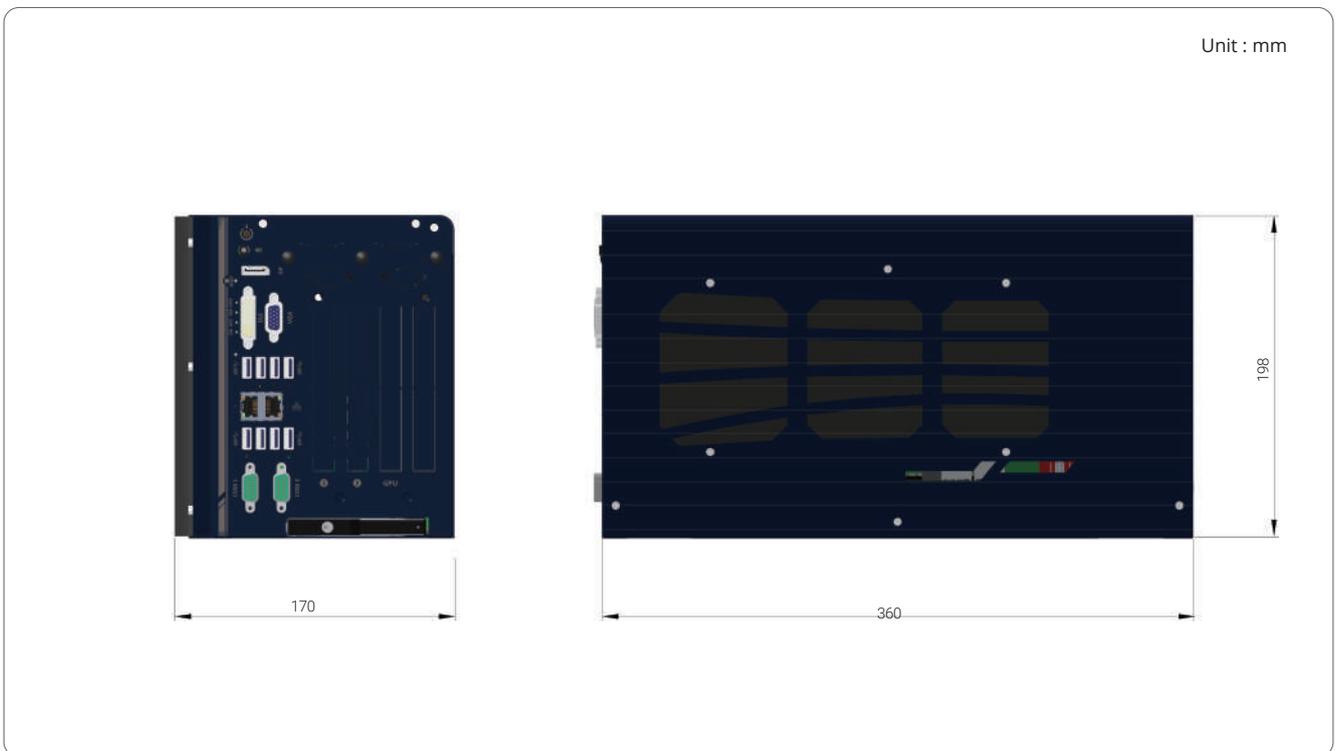 *System load between 480W 1000W (dual GPUs), the required DC input is 24V to 35V*
[2] *For i7-9700E and i7-8700 running at 65W mode, the highest operating temperature shall be limited to 50°C and thermal throttling may occur when sustained full-loading applied. Users can configure CPU power in BIOS to obtain higher operating temperature.*
[3] *For sub-zero operating temperature, a wide temperature HDD or Solid State Disk (SSD) is required.*

Appearance

- DVI-D x1 & VGA x1
- 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
- PCIE x 4
- Hot-swap HDD
- 8V to 48V DC input

Dimensions

Unit : mm

170

360

198

Ordering Information

Model No.	Product Description
Nuvo-8108GC	Industrial-grade edge AI platform supporting 250W NVIDIA® GPU Card, Intel® Xeon® E and 9th/ 8th-Gen Core™ processor with 8 to 48V wide-range 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~+70°C, Meanwell SDR-480-24