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Nuvo-10108GC Series

Industrial Edge AI Computer Supporting Single 350W NVIDIA® RTX™ GPU, Intel® 14th/ 13th/ 12th-Gen Core™ Processor with Three Additional PCIe Slots

Key Features

- **Supports single NVIDIA® 350W GPU with Gen4 x16 signal and dedicated GPU-locking bracket**
- **Intel® 14th/ 13th/ 12th-Gen Core™ 35W/ 65W LGA1700 CPU**
- **Up to 128GB ECC/ non-ECC DDR5 4800 with Intel R680E chipset (2x SODIMM)**
- **Three x8 PCIe slots with Gen3 x4 signal for add-on cards**
- **6x USB 3.2, 2x 2.5GbE, 1x GbE, and 1x optional 10GbE**
- **Two front-accessible storage options: 1x 2.5" SATA tray and 1x optional NVMe tray**
- **8V to 48V wide-range DC input with ignition power control**
- **Rugged, -25°C to 60°C operation**

Introduction

Nuvo-10108GC is Neousys' response to the ruggedized Edge AI computer with extreme CPU and GPU performance for autonomous driving and AI-powered factory automation. It leverages an Intel® 14th /13th/ 12th-Gen CPU and selected NVIDIA® RTX™ GPU up to 350W, e.g., RTX Pro 6000 Max-Q GPU, offering single-precision GPU performances up to 100 TFLOPS.

Powered by an Intel® 14th /13th/ 12th-Gen CPU with up to 24 cores and 32 threads, Nuvo-10108GC offers up to twice the performance compared to previous Intel® 10th or 11th-Gen platforms. In addition, Nuvo-10108GC supports ECC memory to deliver mission-critical computation, e.g., automated driving in urban traffic. It inherits a proven thermal dissipation design for the CPU and GPU to guarantee rugged, -25°C to 60°C wide-temperature operation. To withstand continuous shaking and juddering conditions in on-highway and off-highway applications, Nuvo-10108GC features an innovative GPU locking bracket to fasten the GPU with the chassis, and Neousys' patented damping bracket to absorb high-frequency vibration.

Nuvo-10108GC also features an abundance of I/Os, such as 6x USB3.2 Gen2, 3x 2.5GbE/GbE, and 1x optional 10GbE. Expansion-wise, Nuvo-10108GC offers 3x additional PCIe slots for GMSL2/ industrial camera frame grabbers and various add-on cards. Also, it provides 2x full-size mini PCI Express sockets for CAN bus/ COM/ WiFi expansion and 1x M.2 B key sockets for mobile connectivity with 4G LTE, 5G NR modules. In terms of data storage, Nuvo-10108GC offers an M.2 2280 M socket for Gen4x4 NVMe, and dual front-accessible storage options, including a 2.5" SATA HDD/SSD and an optional M.2 2280 Gen4x4 NVMe tray.

By utilizing Intel's 14th /13th/ 12th-Gen platform, state-of-the-art NVIDIA® RTX™ GPU, and Neousys' industrial-grade power, thermal and mechanical designs with rich I/O and expansion, Nuvo-10108GC is a rugged edge AI platform that offers unprecedented GPU and CPU computing power for modern AI applications.

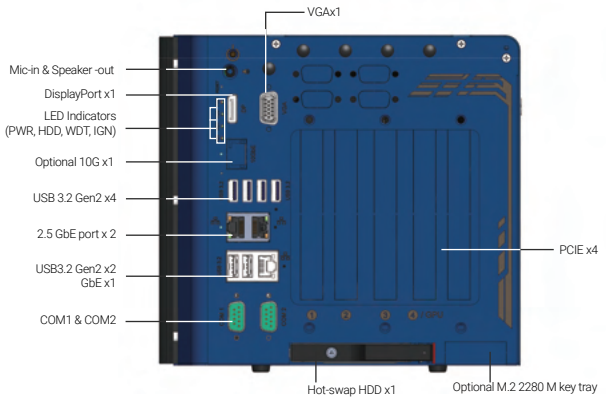
Specifications

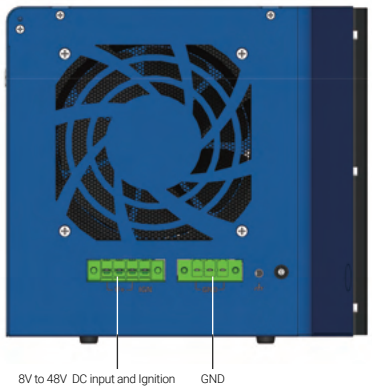
System Core		
Processor	Supporting Intel® 14th-Gen Core™ CPU (LGA1700 socket, 65W/ 35W TDP) - Intel® Core™ i9-14900/ i9-14900T - Intel® Core™ i7-14700/ i7-14700T - Intel® Core™ i5-14500/ i5-14400/ i5-14500T - Intel® Core™ i3-14100/ i3-14100T	
	Supporting Intel® 13th-Gen Core™ CPU (LGA1700 socket, 65W/ 35W TDP) - Intel® Core™ i9-13900E/ i9-13900TE - Intel® Core™ i7-13700E/ i7-13700TE - Intel® Core™ i5-13500E/ i5-13400E/ i5-13500TE - Intel® Core™ i3-13100E/ i3-13100TE	Support Intel® 12th-Gen Core™ CPU (LGA1700 socket, 35W/ 65W TDP) - Intel® Core™ i9-12900E/ i9-12900TE - Intel® Core™ i7-12700E/ i7-12700TE - Intel® Core™ i5-12500E/ i5-12500TE - Intel® Core™ i3-12100E/ i3-12100TE - Intel® Pentium® G7400E/ G7400TE - Intel® Celeron® G6900E/ G6900TE
Chipset	Intel® R680E Platform Controller Hub	
Graphics	Integrated Intel® UHD Graphics 770 (32EU)/ 730 (24EU)	
Memory	Up to 128GB ECC/ non-ECC DDR5 4800 SDRAM (up to 2x 64GB SODIMM modules)[1]	
AMT	Supports Intel vPro/ AMT 16.0	
TPM	Supports dTPM 2.0	
I/O Interface		
Ethernet	2x 2.5G Ethernet by I226-IT and 1x Gigabit Ethernet by I219-LM	
10G Ethernet (optional)	1x 10GBASE-T port by Marvell AQC113CS, supporting NBASE-T (5G/ 2.5G) and 1000BASE-T (Optional)	
USB 3.2	6x USB 3.2 Gen2x1 (10 Gbps) ports	
USB 2.0	1x USB 2.0 ports (internal for dongle use)	
Video Port (Integrated Graphics)	1x VGA connector, supporting 1920 x 1200 resolution 1x DisplayPort connector, supporting 4096 x 2304 resolution	
Serial Port	2x software-programmable RS-232/ 422/ 485 ports (COM1/COM2)	
Audio	1x 3.5 mm jack for mic-in and speaker-out	
Storage Interface		
SATA HDD	1x front-accessible, hot-swappable HDD trays for 2.5" HDD/ SSD installation	
M.2	1x M.2 2280 M key socket (PCIe Gen4 x4) for NVMe SSD 1x front-accessible M.2 2280 M key tray (PCIe Gen4 x4) for NVMe SSD (Optional)	

Expansion Bus	
PCI Express	1x PCIe x16 slot @Gen4, 16-lanes with 65 mm slot width. The standard GPU locking bracket is designed for NVIDIA® RTX™ Pro 4000, 4500, 5000, 6000 Max-Q and other selected GPU cards. 3x PCIe x8 slots @Gen3, 4-lanes
Mini PCI Express	2x full-size mini PCI Express sockets with internal SIM sockets
M.2	1x M.2 2242/3052 B key socket with internal SIM sockets
Power Supply	
DC Input	3-pin + 4-pin pluggable terminal block for 8V to 48V DC input with ignition control[2]
Mechanical	
Dimension	214 mm (W) x 400 mm (D) x 196 mm (H) (without damping bracket)
Weight	6.2 kg (excluding damping bracket)
Mounting	Wall-mount with damping brackets
Environmental	
Operating Temperature	**With 35W CPU and NVIDIA® 350W GPU** -25°C to 60°C [3] **With 65W CPU and NVIDIA® 350W GPU** -25°C to 60°C[3][4] (with optional fan kit) -25°C to 50°C[3][4] (without optional fan kit)
Storage Temperature	-40°C to 85°C
Humidity	10% to 90% , non-condensing
Vibration	MIL-STD-810H, Method 514.8, Category 4 (with damping bracket)
Shock	MIL-STD-810H, Method 516.8, Procedure I (with damping bracket)
EMC	CE/FCC Class A, according to EN 55032 & EN 55035

[1] As of Aug, 2023, the maximum single DDR5 SODIMM capacity is 48GB.
[2] 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 13.8V to 48V
[3] For sub-zero operating temperature, a wide temperature HDD or Solid State Disk (SSD) is required.
[4] For 65W CPUs, the optional fan kit is recommended for operating at ambient temperatures higher than 50°C.

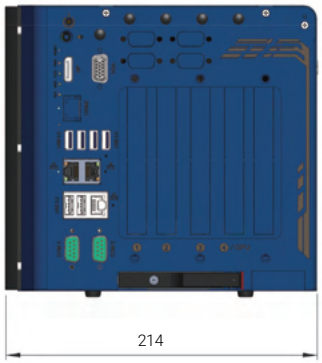
Appearance

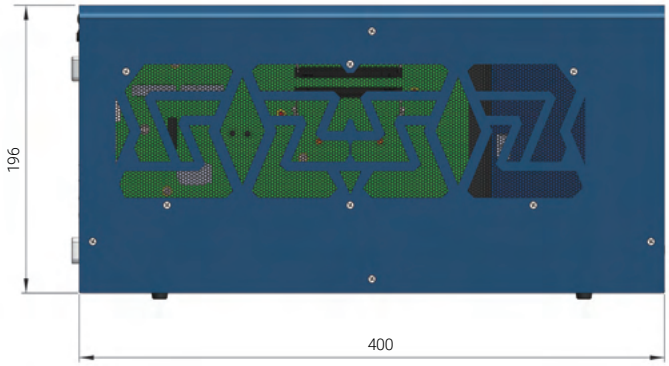




Dimensions

Unit : mm





Ordering Information

Model No.	Product Description
Nuvo-10108GC	Industrial-grade Edge AI Platform supporting single NVIDIA® RTX™ series 350W GPU Cards, Intel® 14th /13th/ 12th-Gen Core™ processor with 3x additional PCIe slots
Optional 10GbE and M.2 2280 M key tray (PCIe Gen4 x4)	

Optional Accessories

AccsyBx-FAN-Nuvo10208GC	Fan assembly for Nuvo-10108GC and Nuvo-10208GC series, 92x92x25 mm
AccsyBx-Cardholder-10108GC-xx	Nuvo-10108GC GPU bracket kits for NVIDIA® RTX™ Pro 4000, 4500, 5000, 6000 Max-Q, and other selected GPU cards. Please contact Neousys for more information.
TY-NVMe-Nuvo10108GC	M.2 NVMe 2230/42/60/80 SSD Tray for Nuvo-10108GC
Cblkit-GPWR-N10108	GPU power cable kit compatible with RTX™ A4000, A5000, and RTX™ A6000 for the Nuvo-10108GC. Wafer ATX3.0 PCIe 5.0 12VHPWR(12+4P) to x2 Wafer 4.2 6P + 2P, Black, 20AWG, -20°C to +80°C, Length: 35cm
PA-600W-ENC	600W AC/DC power adapter 24V/25A; cord end terminals for terminal block, operating temperature : -20°C to 70°C.
PA-1000W-MW-2	AC/DC power supply providing 1000W output power for 90V - 264V AC input voltage and offers rated voltage 24V.