

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 single and dedicated GPU-locking bracket
- Intel® 14th/ 13th/ 12th-Gen Core™ 35W/ 65W LGA1700 CPU
- Up to 64GB 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

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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 an NVIDIA® RTX™ 40 series or the latest RTX™ 6000 Ada GPU, offering single-precision GPU performances up to 48 TFLOPS or 91 TFLOPS, respectively.

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		Expansion Bus	
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	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	1x PCIe x16 slot @Gen4, 16-lanes with 65 mm slot width. The standard GPU locking bracket is designed for NVIDIA® RTX™ A4000, A5000, A6000, 6000 Ada, and selected RTX 40 Series GPU cards. 3x PCIe x8 slots @Gen3, 4-lanes
Chipset	Intel® R680E Platform Controller Hub	Mini PCI Express	2x full-size mini PCI Express sockets with internal SIM sockets
Graphics	Integrated Intel® UHD Graphics 770 (32EU)/ 730 (24EU)	M.2	1x M.2 2242/3052 B key socket with internal SIM sockets
Memory	Up to 128GB ECC/ non-ECC DDR5 4800 SDRAM (up to 2x 64GB SODIMM modules) ^[1]	Power Supply	
AMT	Supports Intel vPro/ AMT 16.0	DC Input	3-pin + 4-pin pluggable terminal block for 8V to 48V DC input with ignition control ^[2]
TPM	Supports dTPM 2.0	Mechanical	
I/O Interface		Dimension	214 mm (W) x 400 mm (D) x 196 mm (H) (without damping bracket)
Ethernet	2x 2.5G Ethernet by I226-IT and 1x Gigabit Ethernet by I219-LM	Weight	6.2 kg (excluding damping bracket)
10G Ethernet (optional)	1x 10GBASE-T port by Marvell AQCN113CS, supporting NBASE-T (5G/ 2.5G) and 1000BASE-T (Optional)	Mounting	Wall-mount with damping brackets
USB 3.2	6x USB 3.2 Gen2x1 (10 Gbps) ports	Environmental	
USB 2.0	1x USB 2.0 ports (internal for dongle use)	Operating Temperature	With 35W CPU and NVIDIA® 350W GPU -25°C to 60°C ^[3]
Video Port (Integrated Graphics)	1x VGA connector, supporting 1920 x 1200 resolution 1x DisplayPort connector, supporting 4096 x 2304 resolution	Storage Temperature	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)
Serial Port	2x software-programmable RS-232/ 422/ 485 ports (COM1/COM2)	Humidity	10% to 90% , non-condensing
Audio	1x 3.5 mm jack for mic-in and speaker-out	Vibration	MIL-STD-810H, Method 514.8, Category 4 (with damping bracket)
Storage Interface		Shock	MIL-STD-810H, Method 516.8, Procedure I (with damping bracket)
SATA HDD	1x front-accessible, hot-swappable HDD trays for 2.5" HDD/ SSD installation	EMC	CE/FCC Class A, according to EN 55032 & EN 55035
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)		

^[1] As of Aug. 2023, the maximum single DDR5 SODIMM capacity is 48GB.

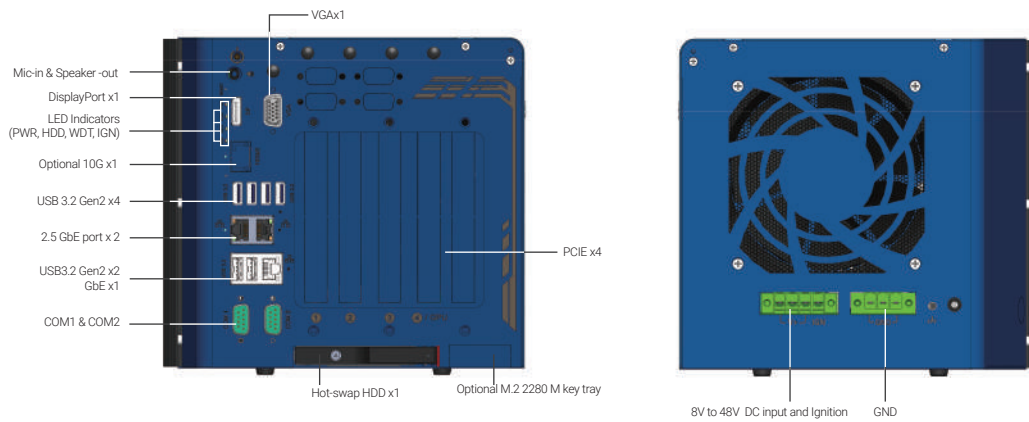
^[2] System load under 100W, the required DC input range is 8V to 48V

System load between 100W to 480W (single GPU), the required DC input range is 18V to 48V

^[3] For sub-zero operating temperature, a wide temperature HDD or Solid State Disk (SSD) is required.

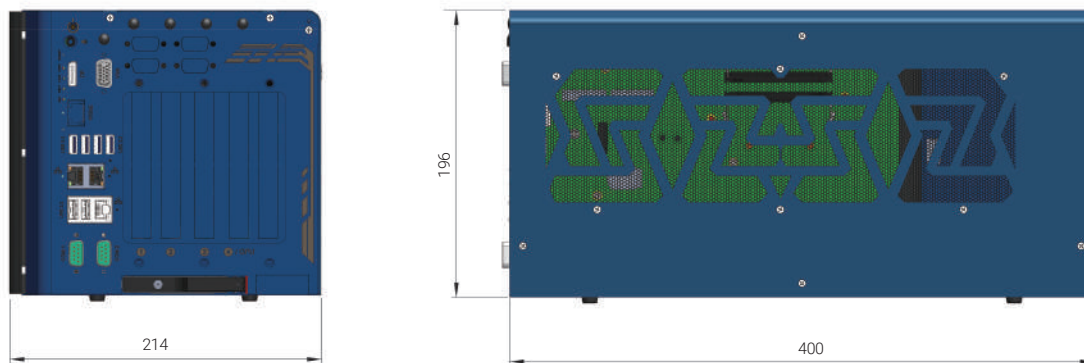
^[4] For 65W CPUs, the optional fan kit is recommended for operating at ambient temperatures higher than 50°C.

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
<i>Optional 10GbE and M.2 2280 M key tray (PCIe Gen4 x4)</i>	

Optional Accessories

AccsyBx-FAN-Nuvo10208GC	Fan assembly for Nuvo-10108GC and Nuvo-10208GC series, 92x92x25 mm
AccsyBx-Cardholder-10108GC-4080S	Nuvo-10108GC GPU bracket kit for selected RTX 4080 Super
AccsyBx-Cardholder-10108GC-4070S	Nuvo-10108GC GPU bracket kit for selected RTX 4070 Ti Super
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.