GPU Computing

NEOUSYS TECHNOLOGY

Nuvo-8108GC-XL

Industrial-grade Edge AI Platform Supporting NVIDIA® RTX 30 series GPU Card, Intel® Xeon® E and 9th/ 8th-Gen Core™ Processor, 8~48V wide-range DC Input and Built-in Ignition Control

Preliminary

CE FC

Key Features

- Supports an NVIDIA® RTX 30 series graphics card up to RTX 3080
- Supports Intel® Xeon® E or 9th/ 8th-Gen Core™ i7/ i5 LGA1151 CPU
- Up to 128GB ECC/ non-ECC DDR4 2133 (4x SODIMM)
- One x16 (8-lanes), one x8 (4-lanes), Gen3 PCIe slots for add-on cards
- 2x M.2 B key and 3x full-size mini-PCIe sockets
- 8~48V 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 1 Grms vibration

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

Introduction

Nuvo-8108GC-XL is one of the first rugged edge AI platforms to support an NVIDIA® RTX 30 series graphics card up to RTX 3080. Together, the system offers tremendous GPU power up to 29.8 TFLOPS in FP32 to take GPU-accelerated edge computing such as autonomous driving, vision inspection and intelligent video analytics to the next level.

Powered by an Intel® Xeon® E or 9th/ 8th-Gen Core™ (up to 8-core/ 16-thread) CPU with workstation-grade Intel® C246 chipset to support up to 128 GB ECC or non-ECC DDR4 memory, the system is a strong foundation to built a powerful AI edge computing platform on. Featuring a brand new mechanical design that is optimized to bring out the best in the latest RTX 30 series GPU cards and its parallel operation of heterogeneous computing architecture. In addition to the x16 PCIe slot (8-lanes) for RTX 30 series GPU installation, Nuvo-8108GC-XL has other one x8 PCIe slots (4-lanes) and one x16 PCIe slot (8-lanes) for users to add on high performance or bandwidth-hungry expansion cards to extend function sets, such as data collection, analytics and communication.

Nuvo-8108GC-XL incorporates Neousys' patented heat dissipation design*, damping brackets* and enhanced GPU stabilizing bar, steadying it for reliable and rock-solid operation in shock or vibration conditions. Continuing the heritage of Neousys' proven power and thermal design, the Nuvo-8108GC-XL accepts 8~48V wide-range DC input to handle heavy power requirements from RTX 30 series GPU under wide temperature operation. Incorporating the built-in ignition control, it can be deployed on a vehicle and directly power it via the car's power system.

Nuvo-8108GC-XL is Neousys' response to the never-ending demand for TFLOPS performance in industrial GPU platforms. With proven industrial-grade power, guaranteed thermal performance, and new mechanical design, it takes edge AI computing to the next level.

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)
USB 3.1	4x USB 3.1 Gen2 (10 Gbps) ports 4x USB 3.1 Gen1 (5 Gbps) ports
USB 2.0	1x USB 2.0 ports (internal for dongle use)
Audio	1x 3.5 mm jack for mic-in and speaker-out
Storage Interface	
SATA	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
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
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 8~48V DC input with ignition control
Mechanical	
Dimension	193 mm (W) x 388 mm (D) x 198 mm (H)
Weight	5.2 kg
Mounting	Wall-mount with damping brackets
Environmental	
Operating Temperature	with 35W CPU and one NVIDIA® RTX 30 Series GPU -25°C ~ 60°C *** with >= 65W CPU and one NVIDIA® RTX 30 Series GPU -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; 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

*** For 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.*

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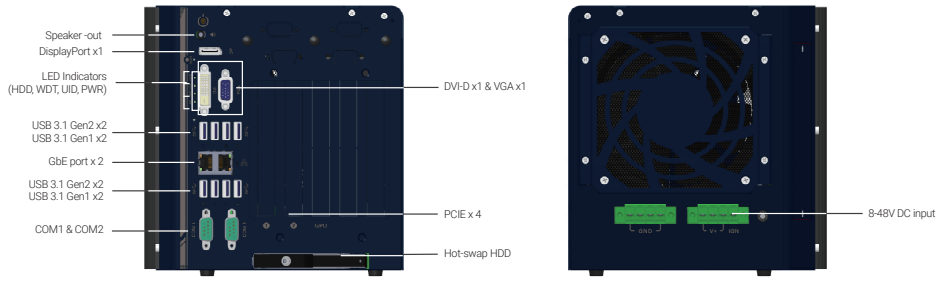
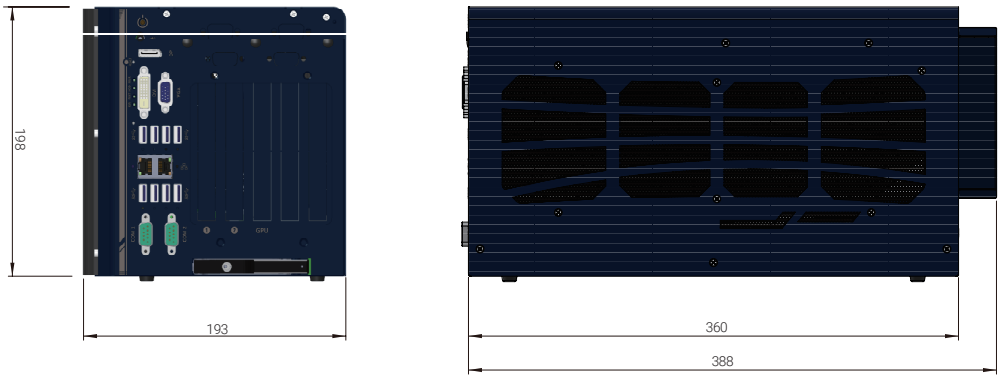
Nuvo-8108GC-XL

Appearance



Dimensions

Unit : mm



Ordering Information

Model No.	Product Description
Nuvo-8108GC-XL	Industrial-grade edge AI platform supporting NVIDIA® RTX 30 series GPU Card, Intel® Xeon® E and 9th/ 8th-Gen Core™ processor with 8~48V 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

Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

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