NEOUSYS TECHNOLOGY

Nuvo-7164GC Series

Ruggedized AI Inference Platform Supporting nVidia® Tesla P4/ T4 and Intel® 8th-Gen Core™ Processor

Key Features

· Supports nVidia® Tesla P4/ T4 GPU
· Dedicated heat dissipation for -25°C to 60°C wide-temperature operation
· Intel® 8th-Gen Core™ hexa-core 35W/ 65W LGA1151 CPU
· 6x GigE ports, 802.3at PoE+ option available (ports 3~6)
· M.2 2280 M key NVMe (Gen3 x4) socket for fast storage access
· 4x USB 3.1 Gen2 ports and 4x USB 3.1 Gen1 ports
· Accommodates two 2.5" SATA HDD/SSD with RAID 0/1 support
· MezIO™ interface for easy function expansion

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Introduction

Nuvo-7164GC is a rugged AI inference platform designed for advanced inference acceleration applications such as voice, video, image and recommendation services. It supports nVidia® Tesla P4 GPU, featuring 5.5 TFLOPS in FP32 and Tesla T4 GPU, featuring 8.1 TFLOPS in FP32 and 130 TOPs in INT8 for real-time inference based on trained neural network model. In addition, it supports Intel® 8th-Gen Coffee Lake Core™ 6-core/12-thread CPU and 32 GB DDR4-2666, offering great balance between CPU, GPU and memory performance.

Thanks to Neousys' patented Cassette and air tunnel design, which guides the intake air to flow through the passive heat sink of nVidia® Tesla P4/ T4, Nuvo-7164GC is capable of effectively dissipating the heat generated by the GPU. This promising design guarantees system operation of up to 60°C ambient temperature with sustained 100% GPU loading.

Nuvo-7164GC also incorporates cutting-edge I/O technologies to boost overall system flexibility, functionality and performance. It has an M.2 NVMe interface that supports disk read/ write speeds over 2000 MB/s and USB 3.1/ GbE ports for fast data transfer, such as acquiring HD video data. With the combination of a fast CPU and inference accelerator GPU, Nuvo-7164GC is the ideal inference platform for artificial intelligence applications.
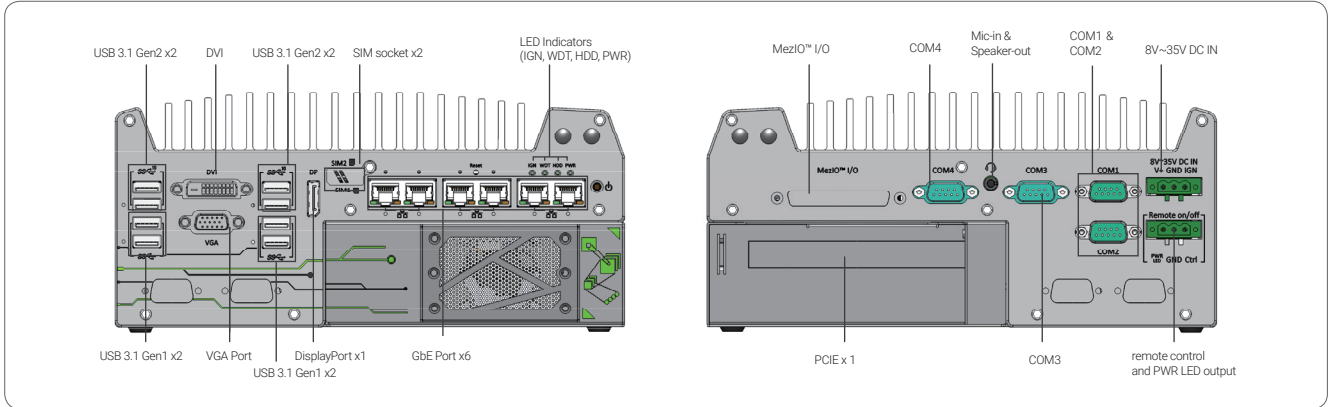
Specifications

System Core

Processor	Supporting Intel® 8th-Gen Coffee Lake CPU (LGA1151 socket, 65W/ 35W TDP) - Intel® Core™ i7-8700/ i7-8700T - Intel® Core™ i5-8500/ i5-8500T - Intel® Core™ i3-8100/ i3-8100T
Chipset	Intel® Q370 platform controller hub
Graphics	Integrated Intel® UHD graphics 630
Memory	Up to 32 GB DDR4 2666/ 2400 SDRAM (two SODIMM slots)
AMT	Supports AMT 12.0
TPM	Supports TPM 2.0

I/O Interface

Ethernet	6x Gigabit Ethernet ports by I219 and 5x I210
PoE+	Optional IEEE 802.3at PoE+ PSE for port 3 ~ port 6 100 W total power budget
USB	4x USB 3.1 Gen2 (10 Gbps) ports 4x USB 3.1 Gen1 (5 Gbps) ports
Video Port (Integrated Graphics)	1x VGA connector, supporting 1920 x 1200 resolution 1x DVI-D 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) 2x RS-232 ports (COM3/ COM4)
Audio	1x 3.5 mm jack for mic-in and speaker-out

Storage Interface

SATA HDD	2x internal SATA ports for 2.5" HDD/ SSD installation, supporting RAID 0/ 1
M.2 NVMe	1x M.2 2280 M key NVMe socket (PCIe Gen3 x4) for NVMe SSD installation
mSATA	1x full-size mSATA port (mux with mini-PCIe)

Internal Expansion Bus

PCI/PCI Express	1x PCIe x16 slot@Gen3, 16-lanes PCIe signals in Cassette for installing nVidia® Tesla P4/T4 GPU
Mini PCI Express	1x full-size mini PCI Express socket with internal SIM socket (mux with mSATA)
M.2	1x M.2 2242 B key socket with dual front-accessible SIM sockets, supporting dual SIM mode with selected M.2 LTE module
Expandable I/O	1x MezIO™ expansion port for Neousys MezIO™ modules

Power Supply

DC Input	1x 3-pin pluggable terminal block for 8~35VDC DC input
Remote Ctrl. & LED Output	1x 3-pin pluggable terminal block for remote control and PWR LED output

Mechanical

Dimension	240 mm (W) x 225 mm (D) x 111 mm (H)
Weight	4.5 Kg (including CPU, GPU, memory and HDD)
Mounting	Wall-mount mounting bracket or optional DIN-Rail mounting

Environmental

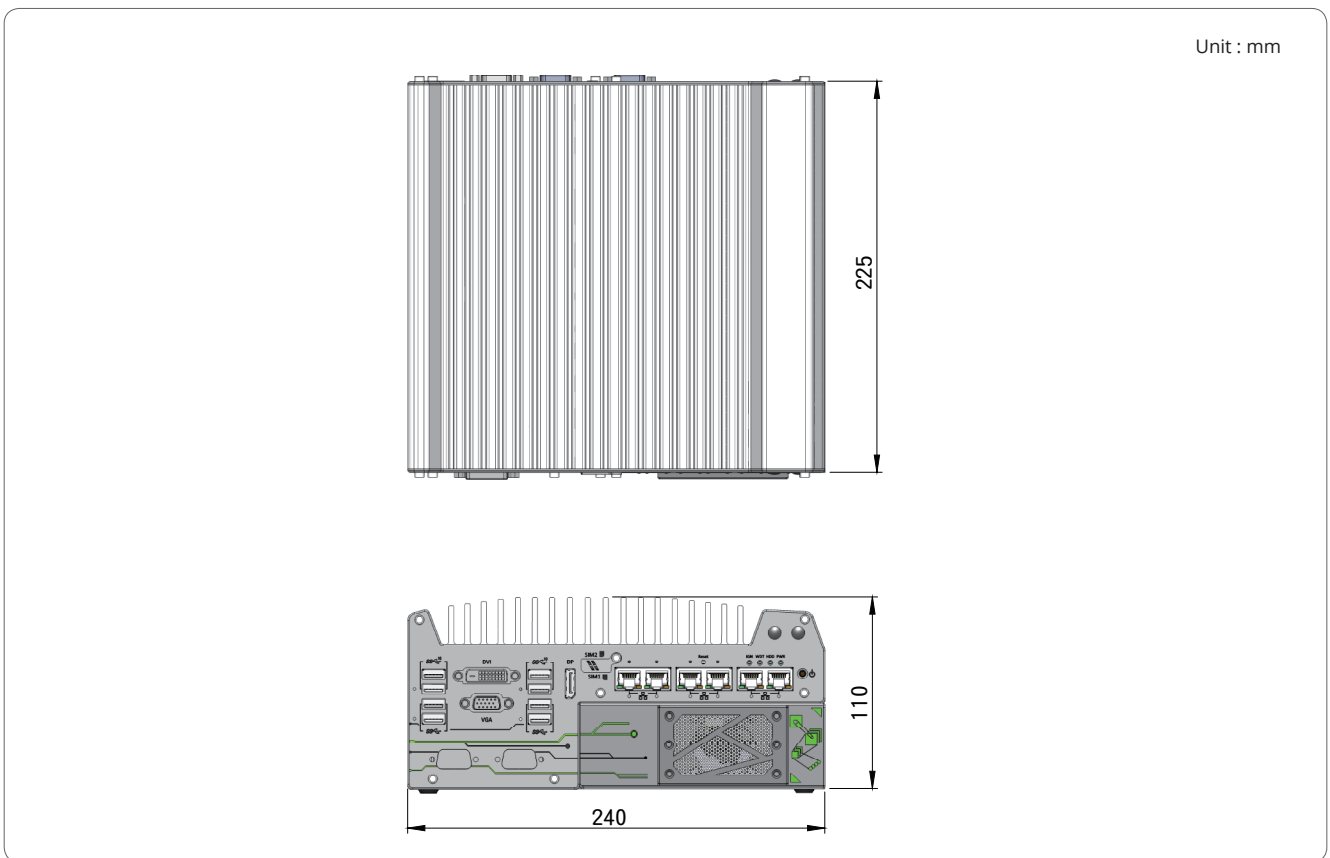|	
Operating Temperature	with 35W CPU and nVidia® Tesla P4/ T4 -25°C ~ 60°C *** with 65W CPU and nVidia® Tesla P4/ T4 -25°C ~ 60°C **/ *** (configured as 35W TDP mode) -25°C ~ 50°C **/ *** (configured as 65W TDP mode)
Storage Temperature	-40°C ~ 85°C
Humidity	10%~90% , non-condensing
Vibration	Operating, MIL-STD-810G, Method 514.6, Category 4
Shock	Operating, MIL-STD-810G, Method 516.6, Procedure I, Table 516.6-II
EMC	CE/FCC Class A, according to EN 55032 & EN 55024

** 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.

Appearance

USB 3.1 Gen2 x2 | DVI | USB 3.1 Gen2 x2 | SIM socket x2 | LED Indicators (IGN, WDT, HDD, PWR) | MezIO™ I/O | COM4 | Mic-in & Speaker-out | COM1 & COM2 | 8V~35V DC IN

USB 3.1 Gen1 x2 | VGA Port | DisplayPort x1 | USB 3.1 Gen1 x2 | GbE Port x6 | PCIE x 1 | COM3 | remote control and PWR LED output

Dimensions

Unit : mm

225

110

240

Ordering Information

Model No.	Product Description
Nuvo-7164GC	Intel® 8th-Gen Core™ AI Inference Platform with 6x GbE and MezIO™, supporting nVidia® Tesla P4/T4 GPU
Nuvo-7164GC-PoE	Intel® 8th-Gen Core™ AI Inference Platform with 2x GbE, 4x 802.3at PoE and MezIO™, supporting nVidia® Tesla P4/T4 GPU

Optional Accessories

PA-280W-OW	280W AC/DC power adapter 24V/11.67A; 16AWG/100cm; Cord end terminals for terminal block, operating temperature : -30°C to 60°C.
Damping bracket	Neousys' patented damping bracket assembly for Nuvo-7160GC/ Nuvo-7164GC