NEOUSYS TECHNOLOGY

Nuvo-7100VTC Series

Intel® 8th/9th-Gen Core™ i7/i5/i3 In-Vehicle Controller with 4x or 8x PoE+ Ports, DIO, CAN bus and RAID

Key Features

· **Supports Intel® 8th/9th-Gen Core™ i7/i5/i3 LGA1151 socket-type CPU**
· **4x or 8x 802.3at Gigabit PoE+ ports via M12 or RJ45 connectors**
· **On-board isolated CAN bus for in-vehicle communication**
· **4-CH isolated DI and 4-CH isolated DO**
· **2x SATA ports with one hot-swappable HDD tray, supporting RAID 0/1**
· **2x M.2 B key and 3x full-size mini-PCIe sockets**
· **8~35V wide-range DC input with built-in ignition power control**
· **E-Mark and EN 50155 certificate**

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Introduction

Nuvo-7100VTC is the latest rugged in-vehicle controller featuring purpose-built set and effortless connectivity, powered by Intel® 8th/9th-Gen Core™ processors with up to 8-core/ 16-thread architecture and 64GB DDR4 memory that gets a significant performance increase over previous generations for versatile in-vehicle applications.
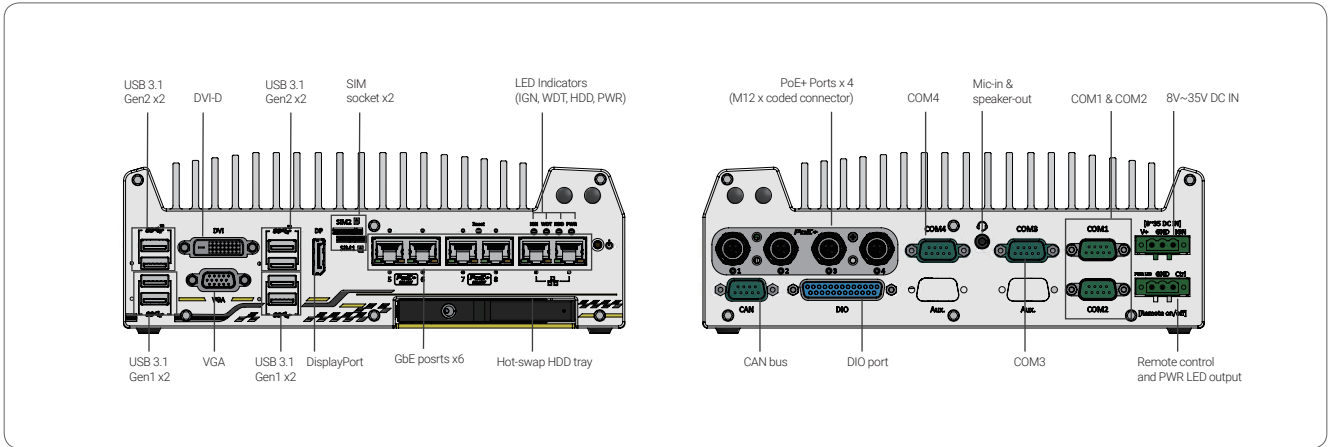
Nuvo-7100VTC provides flexibility to support a range of peripherals and connections. It offers four or eight 802.3at PoE+ ports to supply 25W power to connected devices such as IP cameras with M12 (x-coded connectors) and connector screw-lock mechanisms on computer I/Os like Gigabit Ethernet, USB3.0 and USB3.1 to guarantee extreme rugged connectivity in shock/ vibration environments. Wireless connectivity are essential for modern day in-vehicle applications and you can simultaneously utilize two M.2 and three mini-PCIe sockets with corresponding wireless modules for 3G/ 4G, WIFI, GPS, and CAN module for communication. Additionally, there is a 4G cellular module option that is certified to work with renowned US telecommunications company which can save you implementation time and cost.

On top of all that, Nuvo-7100VTC also features isolated CAN bus for in-vehicle communication, isolated DIO for sensor/ actuator control, 8~35V wide-range DC input with ignition power control and is in compliance with E-Mark and EN 50155. The Nuvo-7100VTC is the perfect solution with extraordinary reliability for various in-vehicle application needs.
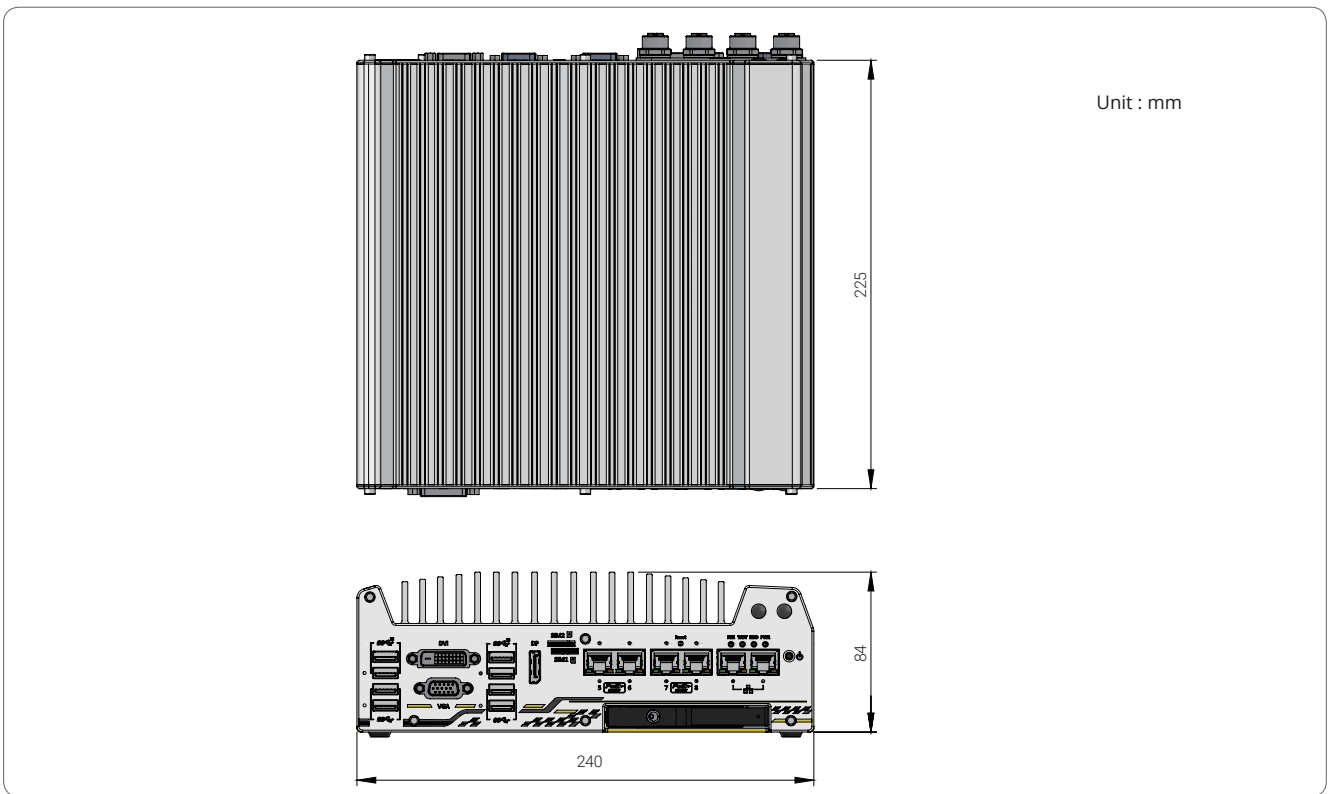
Specifications

System Core

Processor	Supports Intel® 8th/9th-Gen Coffee Lake CPU (LGA1151 socket, 35W TDP) - Intel® Core™ i7-8700T/ i7-9700TE - Intel® Core™ i5-8500T/ i5-9500TE - Intel® Core™ i3-8100T/ i3-9100TE
Chipset	Intel® Q370 platform controller hub
Graphics	Integrated Intel® HD Graphics 630
Memory	Up to 64 GB DDR4 2666/ 2400 SDRAM (two SODIMM slots)
AMT	Supports AMT 12.0
TPM	Supports TPM 2.0

I/O Interface

Ethernet	2x Gigabit Ethernet ports by Intel® I219 and I210
PoE+	4x IEEE 802.3at (25.5W) Gigabit PoE+ ports by Intel® I210, - M12 x-coded connector (Nuvo-7100VTC); - RJ45 connector (Nuvo-7104VTC) 8x IEEE 802.3at (25.5W) Gigabit PoE+ ports by Intel® I210 - RJ45 connector (Nuvo-7108VTC)
CAN	1x isolated CAN 2.0 port
Isolated DIO	4x isolated DI and 4x isolated DO
USB	4x USB 3.1 Gen2 (10 Gbps) ports 4x USB 3.1 Gen1 (5 Gbps) ports
Video Port	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 Mic-in and 1x speaker-out

Storage Interface

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

Expansion Bus

Mini PCI-E	1x full-size mini PCI Express socket with internal SIM socket (mux with mSATA) 2x full-size mini-PCIe sockets (USB signals only) with internal SIM sockets
M.2	2x M.2 2242 B key socket, one with dual front-accessible SIM sockets, supporting dual SIM mode with selected M.2 LTE module

Power Supply

DC Input	1x 3-pin pluggable terminal block for 8~35V DC input (IGN/ GND/ V+)
Remote Ctrl. & Status Output	1x 3-pin pluggable terminal block for remote control and PWR LED output

Mechanical

Dimension	240 mm (W) x 225 mm (D) x 84 mm (H)
Weight	3.5 kg
Mounting	Neousys' patented damping bracket (standard) or optional DIN-rail mounting

Environmental

Operating Temperature	-40°C ~ 70°C **
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	EN 50155 (Nuvo-7100VTC), E-Mark (Nuvo-7108VTC) CE/FCC Class A, according to EN 55022 & EN 55024

* For i7-8700 and i7-9700E 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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Appearance

USB 3.1 Gen2 x2   DVI-D   USB 3.1 Gen2 x2   SIM socket x2   LED Indicators (IGN, WDT, HDD, PWR)   PoE+ Ports x 4 (M12 x coded connector)   COM4   Mic-in & speaker-out   COM1 & COM2   8V~35V DC IN

USB 3.1 Gen1 x2   VGA   USB 3.1 Gen1 x2   DisplayPort   GbE posrts x6   Hot-swap HDD tray   CAN bus   DIO port   COM3   Remote control and PWR LED output

Dimensions

Unit : mm

225

84

240

Ordering Information

Model No.	Product Description
Nuvo-7100VTC	Intel® 8th/9th-Gen Core™ in-vehicle controller with 4x M12 PoE+ Ports, DIO, CAN bus and RAID
Nuvo-7104VTC	Intel® 8th/9th-Gen Core™ in-vehicle controller with 4x RJ45 PoE+ Ports, DIO, CAN bus and RAID
Nuvo-7108VTC	Intel® 8th/9th-Gen Core™ in-vehicle controller with 8x RJ45 PoE+ Ports, DIO, CAN bus and RAID

Optional Accessories

Cbl-M12X8M-RJ45-500CM	M12 (8-pole-X-coded) to RJ45, CAT6, length : 500CM
Cbl-M12X8M-RJ45-1000CM	M12 (8-pole-X-coded) to RJ45, CAT6, length : 100CM
PA-120W-OW	120W AC/DC power adapter 20V/6A; 18AWG/120cm; cord end terminals for terminal block, operating temperature : -30 to 70 °C.