Nuvo-9200VTC Series

Intel® 14th/ 13th/ 12th-Gen Core™ in-vehicle controller with 4x M12/ 4x RJ45 / 8x RJ45 PoE+ ports, single-slot PCIe Cassette

Key Features

- Supports Intel® 14th/ 13th/ 12th-Gen Core™ 24C/ 32T 35W/ 65W CPU
- 4x or 8x 802.3at PoE+ ports via M12 or RJ45 connectors
- 1x USB 3.2 Gen2x2 type-C and 8x USB 3.2/ 2.0 type-A ports
- On-board isolated CAN bus for in-vehicle communication
- 4-CH isolated DI and 4-CH isolated DO
- M.2 Gen4 x4 NVMe SSD slot
- 2x hot-swappable SATA HDD trays, supporting RAID 0/ 1
- 8V to 48V wide-range DC input with built-in ignition power control
- Patented Cassette for PCIe add-on card accommodation
- E-Mark/ EN 45545 certified and EN 50155 EMC compliant

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*R.O.C Patent No. M534371/ M456527

Introduction

Nuvo-9200VTC is Neousys' latest rugged in-vehicle controller based on Intel® 14th/ 13th/ 12th-Gen Core™ processors. Benefiting from cutting-edge Intel® 7 photolithography, the latest Core™ desktop processors come with up to 24 cores/ 32 threads, offering an incredible boost of computational performance. Combining DDR5 memory bandwidth throughput and PCIe Gen4 NVMe high-speed disk read/write, users can expect an overall system performance improvement of up to 1.8x when compared to previous 10th or 11th-Gen platforms.

Nuvo-9200VTC offers an assortment of peripherals, connections, and expansion flexibility. It has 2.5Gb and 1Gb Ethernet ports, and four or eight 802.3at PoE+ ports to supply 25W of power to connected devices such as IP cameras. The system also has x-coded M12 connectors and screw-lock mechanisms on I/Os like Ethernet, USB 3.2 Gen1 and USB 3.2 Gen2 to guarantee extreme rugged connectivity in shock/ vibration environments. Internal expansion wise, there are two M.2 and three mini-PCIe sockets to install 5G/ 4G, WiFi, GPS, and CAN module for wireless communication.

On top of all that, the system is E-Mark/ EN 45545 certified and EN 50155 EMC compliant and has a patented Cassette module with an additional PCIe slot for an add-on card, making it that much more flexible for in-vehicle applications. Nuvo-9200VTC also features two hot-swappable SATA HDD trays, an isolated CAN bus for in-vehicle communication, isolated DIO for sensor/ actuator control, 8V to 48V wide-range DC input with ignition power control. The Nuvo-9200VTC series is a flexible and reliable solution for various in-vehicle applications.

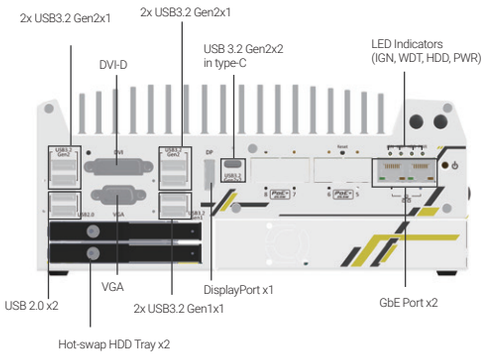
Specifications

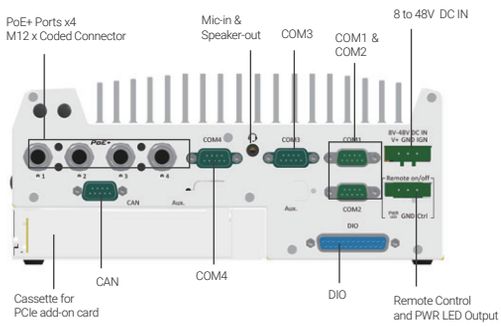
System Core		
Processor	Supporting Intel® 14th-Gen Core™ CPU (LGA1700 socket, 65W/ 35W TDP) - Intel® Core™ i9-14900/ i9-14900T - Intel® Core™ i7-14700/ i7-14700T - Intel® Core™ i5-14500/ i5-14400/ i5-14500T - Intel® Core™ i3-14100/ i3-14100T	
	Supporting Intel® 13th-Gen Core™ CPU (LGA1700 socket, 65W/ 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, 65W/ 35W 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® Q670E platform controller hub	
Graphics	Integrated Intel® UHD Graphics 770 (32EU)	
Memory	Up to 64 GB DDR5 4800 SDRAM (two SODIMM slots)	
AMT	Supports Intel vPro/ AMT 16.0	
TPM	Supports dTPM 2.0	
I/O Interface		
Ethernet port	1x 2.5G Ethernet by I226-IT/ I225-IT and 1x Gigabit Ethernet by I219-LM with screw-lock	
PoE+	4x IEEE 802.3at Gigabit PoE+ ports by Intel® I210 - M12 X-coded connector (Nuvo-9200VTC) - RJ45 connector (Nuvo-9204VTC) 4x IEEE 802.3at Gigabit PoE+ ports by Intel® I210 and 4x 2.5G PoE+ ports by I226-IT/ I225-IT - RJ45 connector (Nuvo-9208VTC)	
USB 3.2	1x USB 3.2 Gen2x2 (20 Gbps) port in type-C connector with screw-lock 4x USB 3.2 Gen2x1 (10 Gbps) ports in type-A connectors 2x USB 3.2 Gen1x1 (5 Gbps) ports in type-A connectors	
USB 2.0	2x USB 2.0 ports	
CAN Bus	1x isolated CAN 2.0 port	
Video Port (Integrated Graphics)	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) 2x RS-232 ports (COM3/COM4)	
Isolated DIO	4-CH isolated DI and 4-CH isolated DO	
Audio	1x 3.5 mm jack for mic-in and speaker-out	
Storage Interface		
M.2	1x M.2 2280 M key socket (PCIe Gen4 x4) for NVMe SSD	

Storage Interface	
SATA HDD	2x hot-swappable HDD trays for 2.5" HDD/ SSD installation, supporting RAID 0/ 1
Expansion Bus	
PCI/PCI Express	1x PCIe x16 slot@Gen3, 16-lanes PCIe signals in Cassette
Mini PCI Express	1x full-size mini-PCIe socket 2x full-size mini-PCIe sockets (USB signals only) with internal SIM sockets
M.2	1x M.2 2242/3052 B key socket with SIM slot for M.2 5G/ 4G module 1x M.2 2242/3052 B key socket with SIM slot for M.2 4G module
Power Supply	
DC Input	1x 3-pin pluggable terminal block for 8V to 48V DC input (IGN/ GND/ V+)
Ignition Control	Built-in ignition power control
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 103 mm (H)
Weight	3.9kg
Mounting	Wall-mount with damping bracket
Environmental	
Operating Temperature	**With 35W CPU** -40°C ~ 70°C[1] (with 1 memory module installed) -40°C ~ 60°C[2][3] ((with 2 memory modules installed) **With 65W CPU** -40°C ~ 50°C[2][3] (configured as 65W TDP with 2-slots memory)
Storage Temperature	-40°C to 85°C
Humidity	10% to 90% , non-condensing
Vibration	EN 50155:2017/ IEC 61373, Category I, Class B - Body mounted
Shock	EN 50155:2017/ IEC 61373, Category I, Class B - Body mounted
EMC	E-Mark, EN 50121 (EN 50155 EMC) CE/FCC Class A, according to EN 55032 & EN 55035
EN 45545	EN 45545-2

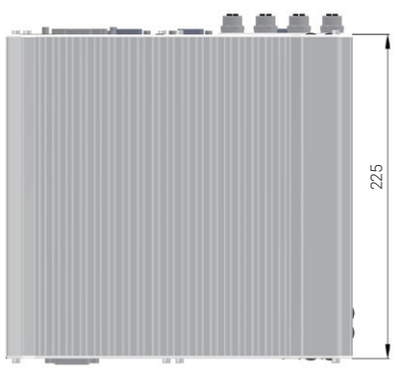
[1] *Due to high heat generation of DDR5 memory, please configure the CPU to 35W mode and utilize only one memory slot, while operating at a temperature of 70°C.*
[2] *For sub-zero operating temperature, a wide temperature HDD or Solid State Disk (SSD) is required.*
[3] *For CPU operating at 65W mode, 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 allow higher operating temperature.*

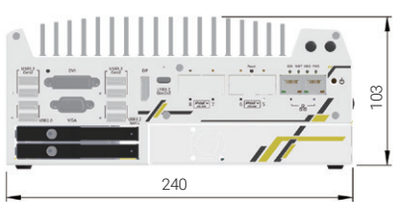
Appearance





Dimensions





Ordering Information

Model No.	Product Description
Nuvo-9200VTC	Intel® 14th/13th/ 12th-Gen Core™ in-vehicle controller with 4x M12 PoE+ Ports, DIO, CAN bus and RAID, single-slot PCI Express Cassette
Nuvo-9204VTC	Intel® 14th/13th/ 12th-Gen Core™ in-vehicle controller with 4x RJ45 PoE+ Ports, DIO, CAN bus and RAID, single-slot PCI Express Cassette
Nuvo-9208VTC	Intel® 14th/13th/ 12th-Gen Core™ in-vehicle controller with 8x RJ45 PoE+ Ports, DIO, CAN bus and RAID, single-slot PCI Express Cassette

Optional Accessories

Cbl-M12X8M-RJ45-CAT5e-500CM	M12(8-pole-X-coded) to RJ45, CAT5e. Length : 500CM
Cbl-M12X8M-RJ45-CAT5e-1000CM	M12(8-pole-X-coded) to RJ45, CAT5e. Length : 1000CM
Fankit-25	Fan assembly for 1-slot Cassette, 25x25x10 mm
PA-280W-ET3	280W AC-DC power Adapter(GST280A24-YI), 24V 11.67A, 85~264VAC 120~370VDC, C6P Plug, w/ terminal block, -30 to 70°C