

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



*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			Storage Interface	
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		SATA HDD	2x hot-swappable HDD trays for 2.5" HDD/ SSD installation, supporting RAID 0/ 1
	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	Expansion Bus	
	Chipset	Intel® Q670E platform controller hub		PCI/PCI Express
Graphics	Integrated Intel® UHD Graphics 770 (32EU)		Mini PCI Express	1x full-size mini-PCIe socket 2x full-size mini-PCIe sockets (USB signals only) with internal SIM sockets
Memory	Up to 64 GB DDR5 4800 SDRAM (two SODIMM slots)		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
AMT	Supports Intel vPro/ AMT 16.0		Power Supply	
TPM	Supports dTPM 2.0		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
I/O Interface			Mechanical	
Ethernet port	1x 2.5G Ethernet by I226-IT/ I225-IT and 1x Gigabit Ethernet by I219-LM with screw-lock		Dimension	240 mm (W) x 225 mm (D) x 103 mm (H)
PoE+	4x IEEE 802.3at Gigabit PoE+ ports by Intel® I210 - M12 X-coded connector (Nuvo-9200VTC) - RJ45 connector (Nuvo-9204VTC)		Weight	3.9kg
	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)		Mounting	Wall-mount with damping bracket
			Environmental	
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		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)
	1x USB 3.2 Gen1x1 (5 Gbps) ports in type-A connectors			With 65W CPU -40°C ~ 50°C ^{[2][3]} (configured as 65W TDP with 2-slots memory)
USB 2.0	2x USB 2.0 ports		Storage Temperature	-40°C to 85°C
CAN Bus	1x isolated CAN 2.0 port		Humidity	10% to 90% , non-condensing
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		Vibration	EN 50155:2017/ IEC 61373, Category I, Class B - Body mounted
Serial Port	2x software-programmable RS-232/ 422/ 485 ports (COM1/COM2) 2x RS-232 ports (COM3/COM4)		Shock	EN 50155:2017/ IEC 61373, Category I, Class B - Body mounted
Isolated DIO	4-CH isolated DI and 4-CH isolated DO		EMC	E-Mark, EN 50121 (EN 50155 EMC) CE/FCC Class A, according to EN 55032 & EN 55035
Audio	1x 3.5 mm jack for mic-in and speaker-out		EN 45545	EN 45545-2
Storage Interface				
M.2	1x M.2 2280 M key socket (PCIe Gen4 x4) for NVMe SSD			

^[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.

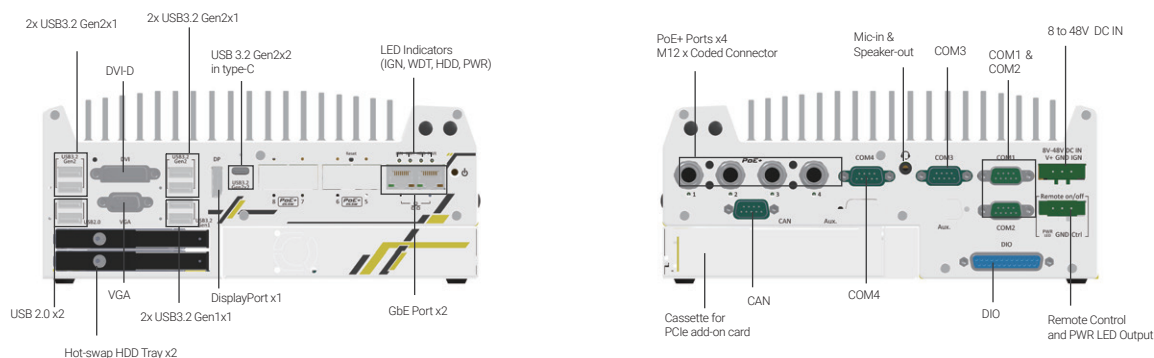
^[3] For CPU1 operating at 65W mode, the highest operating temperature shall be limited to 50°C, and thermal

^[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.

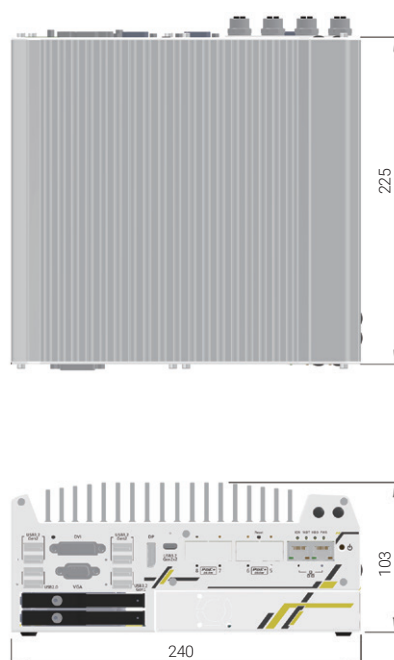
^[2] For sub-zero operating temperature, a wide temperature HDD or Solid State Disk (SSD) is required.

^[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