Nuvo-9531 Series

Intel® Core™ Processor (Series 2)/ 14th/ 13th/ 12th-Gen Compact Fanless Computer with 4x 2.5GbE, 4x USB3.2 and 1x Hotswappable HDD Tray

Key Features

- **212 x 165 x 63 mm low-profile design**
- **Intel® Core™ Processor (Series 2) with P-cores/ 14/ 13/ 12th-Gen 35W/ 45W/ 65W LGA1700 CPU**
- **Rugged, -25°C to 60°C fanless operation**
- **4x 2.5GbE with optional PoE+ and 4x USB3.2 Gen 1 with screw-lock**
- **M.2 2280 Gen4x4 NVMe and 1x hot-swappable HDD tray for storage**
- **4-CH isolated DI and 4-CH isolated DO**
- **VGA + DP dual display outputs**
- **Optional ignition power control**

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Introduction

Nuvo-9531 is one of the most compact fanless embedded computers based on the Intel® 14th/13th/12th-Gen platform. Measuring just 212 x 165 x 63 mm, it can fit into restricted spaces, such as in robotic arm and AMR applications. Despite its compact size, Nuvo-9531 does not compromise on performance. Built on the advanced Intel® 7 process, Intel® 14th-Gen processors have up to 24 cores/ 32 threads to deliver up to 2x the performance when compared to previous Intel® 10th or 11th-Gen platforms. Nuvo-9531 is a compact fanless embedded computer that offers the ultimate computing for various industrial applications.

Nuvo-9531 has rich I/O functions. It features four 2.5GbE with optional PoE+ PSE and four USB3.2 Gen1 ports for multiple camera connectivity for machine vision and surveillance applications. In addition, it features a Gen4 x4 M.2 NVMe slot for the latest NVMe SSD that supports read/ write speeds up to 7000 MB/s; a hot-swappable HDD tray to hot-swap the storage drive without turning off the system or dismantling the chassis; two mPCIe and one M.2 E key slots to install WiFi or 5G/ 4G wireless communication modules. The system is also equipped with 8x DIO, 2x COM ports, and dual display outputs for your industrial embedded application needs.

As a compact embedded computer, Nuvo-9531 delivers excellent computing performance and offers an abundance of I/O connections. It is suitable for a variety of industrial applications, especially when installation space is limited.

Specifications

System Core		
Processor	Supporting Intel® Core™ Processor (Series 2) with P-cores[1] (LGA1700 socket, 65W/ 45W TDP) - Intel® Core™ 9 273PE/ 273PTE - Intel® Core™ 7 253PE/ 253PTE - Intel® Core™ 5 223PE/ 223PTE	Supporting Intel® Core™ Processor (Series 2)[1] (LGA1700 socket, 65W/ 45W TDP) - Intel® Core™ 7 251E/ 251TE - Intel® Core™ 5 221E/ 221TE - Intel® Core™ 3 201E/ 201TE
	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
	Supporting 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	
Chipset	Intel® H610E platform controller hub	
Graphics	Integrated Intel® UHD Graphics 770 (32EU) / 730 (24EU)	
Memory	Up to 32GB non-ECC DDR4 3200 SDRAM (one SODIMM slot)	
TPM	Supports dTPM 2.0	
I/O Interface		
Ethernet	4x 2.5GBASE-T Ethernet ports by Intel® I226-IT GbE controllers	
PoE+	Optional IEEE 802.3at PoE+ PSE for 4x 2.5GbE ports 100 W total power budget	
USB 3.2	4x USB 3.2 Gen1 (5 Gbps) ports	
USB 2.0	2x USB 2.0 ports	
Video Port (Integrated Graphics)	1x VGA output, supporting 1920 x 1200 resolution 1x DisplayPort, supporting 4096 x 2304 resolution	
Serial Port	1x software-programmable RS-232/422/485 ports (COM1) 3x 3-wire RS-232 ports (COM2/3/4) or 1x RS-422/485 port (COM2)	
Audio	1x 3.5 mm jack for mic-in and speaker-out	
Isolated DIO	4-CH isolated DI and 4-CH isolated DO	

Internal Expansion Bus	
Mini PCI Express	2x full-size mini PCI Express sockets with internal SIM sockets
M.2 E key	1x M.2 2230 E key socket
Storage Interface	
SATA HDD	1x hot-swappable 2.5" HDD/ SSD tray for 7mm HDD/ SSD
M.2	1x M.2 2280 M key socket (PCIe Gen4 x4) for NVMe SSD
Power Supply	
DC Input	1x 3-pin pluggable terminal block for 8-48V DC input with optional ignition power control
Mechanical	
Dimension	212mm (W) x 165 mm (D) x 63 mm (H)
Weight	2.4 kg
Mounting	Wall-mount (standard) or DIN-rail mount (optional)
Environmental	
Operating Temperature	**with 35W CPU** -25°C ~ 60°C [2] **with 45W CPU** -25°C ~ 50°C [2] **with 65W CPU** (installation of the optional fan kit is recommended) -25°C ~ 60°C [2]/[3]
Storage Temperature	-40°C ~ 85°C
Humidity	10%~90% , non-condensing
Vibration	MIL-STD-810H, Method 514.8, Category 4
Shock	MIL-STD-810H, Method 516.8, Procedure I
EMC	CE/FCC Class A, according to EN 55032 & EN 55035

[1] *A BIOS update may be required for the system to recognize Core™ Processor (Series 2). Please contact Neousys Technology for more information.*
[2] *For sub-zero operating temperature, a wide temperature HDD or Solid State Disk (SSD) is required.*
[3] *For 65W CPUs, the optional fan kit is recommended for operating at ambient temperatures higher than 50°C.*

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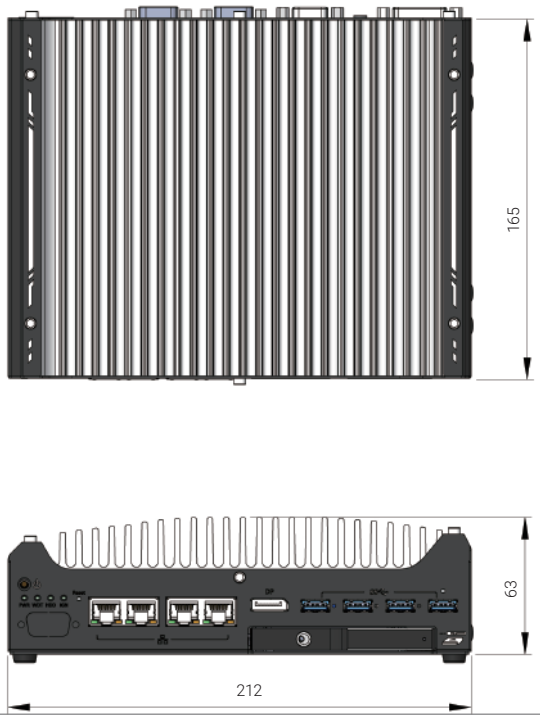
Appearance

Dimensions

Unit : mm



Ordering Information

Model No.	Product Description
Nuvo-9531	Intel® Core™ Processor (Series 2) /14th/13th/12th-Gen compact fanless computer with 4x 2.5GbE, 4x USB3.2 and 1x hot-swappable HDD tray
Optional 802.3at PoE+ PSE for 4x 2.5GbE ports	
Optional ignition power control	

Optional Accessories

PA-160W-OW	160W AC-DC power adapter 20V/8A; 18AWG/120cm; cord end terminals for terminal block, operating temperature: -30°C to 70°C.
PA-280W-ET2	280W AC/DC power adapter 24V/ 11.67A ; 16AWG/ 100cm ; cord end terminals for terminal block, operating temperature : -30°C to 60°C. (recommended for 65W CPU)
DINRAIL-31	DIN-rail mounting assembly for Nuvo-9531 series
AccsyBx-FAN-Nuvo9531_9501	Fan kit with 92mm x 92mm fan for Nuvo-9531/ Nuvo-9501 series

All specifications and photos are subject to change without prior notice