

Rugged Embedded



# Nuvo-9501 Series

Intel® 13<sup>th</sup>/12<sup>th</sup>-Gen Core™ Compact Fanless Computer with 2x 2.5GbE and 4x USB3.2



## Key Features

- Intel® 13<sup>th</sup>/12<sup>th</sup>-Gen Core™ 35W/ 65W LGA1700 CPU
- Compact 212 x 165 x 80 mm footprint
- Rugged, -25°C to 60°C fanless operation (Nuvo-9505D only)
- Up to 32GB DDR4 3200 SODIMM
- 2x 2.5GbE and 4x USB3.2 Gen 1 with screw-lock
- Supports 1x M.2 2280 Gen4 x4 NVMe and 1x 3.5"/2.5" SATA HDD/SSD storage
- 4-CH isolated DI and 4-CH isolated DO (Nuvo-9505D only)
- VGA + DP dual display outputs

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## Introduction

Nuvo-9501 is a cost-effective compact fanless embedded computer based on the Intel® 13<sup>th</sup>/12<sup>th</sup>-Gen platform. Built on the advanced Intel® 7 process, Intel® 13th Gen processors offer up to 24 cores/ 32 threads to deliver up to 2x the performance when compared to previous Intel® 10<sup>th</sup> or 11<sup>th</sup>-Gen platforms. Nuvo-9501 is a cost-effective, compact and yet powerful fanless embedded computer that offers the ultimate computing for various industrial applications.

Nuvo-9501 offers essential I/O functions for general industrial needs including dual 2.5GbE ports, dual display ports and four USB3.2 ports. In addition, it features a Gen4 x4 M.2 NVMe slot for the latest NVMe SSD with read/ write speeds up to 7000 MB/s. Also, it supports a 2.5" or 3.5" HDD for high capacity storage needs such as data collection or surveillance applications. It also offers two mPCIe and one M.2 E key slots for installing WiFi or 5G/ 4G wireless communication modules.

As a cost-effective and compact embedded computer, Nuvo-9501 delivers excellent computing performance and offers essential I/O connectivity to meet customers' needs and cost. It is suitable for a variety of industrial applications.

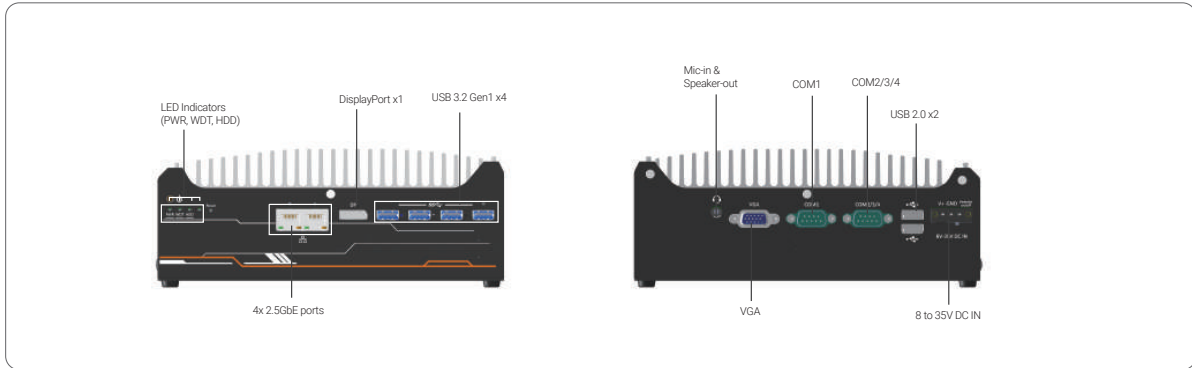
## Specifications

System Core		Storage Interface		
Processor	Supporting Intel® 13 <sup>th</sup> -Gen Core™ CPU (LGA1700 socket, 65W/ 35W TDP)	SATA HDD	1x internal SATA port for 3.5" HDD or 2.5" HDD/ SSD	
	- 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		M.2	1x M.2 2280 M key socket (PCIe Gen4 x4) for NVMe SSD
Chipset	Supporting Intel® 12 <sup>th</sup> -Gen Core™ CPU (LGA1700 socket, 65W/ 35W TDP)	<b>Power Supply</b>		
	- 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® Celeron® G6900E/ G6900TE	DC Input		1x 3-pin pluggable terminal block for 8-35V DC input with remote on/off control
Graphics	Intel® H610E platform controller hub	<b>Mechanical</b>		
Memory	Integrated Intel® UHD Graphics 770 (32EU) / 730 (24EU)	Dimension	212mm (W) x 165 mm (D) x 80 mm (H)	
TPM	Up to 32GB non-ECC DDR4 3200 SDRAM (one SODIMM slot)	Weight	2.5 kg	
<b>I/O Interface</b>	Supports fTPM 2.0	Mounting	Wall-mount (optional) or DIN-rail mount (optional)	
		<b>Environmental</b>		
Ethernet	2x 2.5GBASE-T Ethernet ports by Intel® I226-V GbE controllers (Nuvo-9501) 2x 2.5GBASE-T Ethernet ports by Intel® I226-IT GbE controllers (Nuvo-9505D)	Operating Temperature	With 35W CPU -10°C to 60°C * (Nuvo-9501) -25°C to 60°C * (Nuvo-9505D) With 65W CPU (installation of the optional fan kit is recommended) -10°C to 60°C **/** (Nuvo-9501) -25°C to 60°C **/** (Nuvo-9505D)	
USB 3.2	4x USB 3.2 Gen1 (5 Gbps) ports	Storage Temperature	-40°C ~ 85°C	
USB 2.0	2x USB 2.0 ports	Humidity	10%~90% , non-condensing	
Video Port (Integrated Graphics)	1x VGA output, supporting 1920 x 1200 resolution 1x DisplayPort, supporting 4096 x 2304 resolution	Vibration	MIL-STD-810H, Method 514.8, Category 4	
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)	Shock	MIL-STD-810H, Method 516.8, Procedure I	
Audio	1x 3.5 mm jack for mic-in and speaker-out	EMC	CE/FCC Class A, according to EN 55032 & EN 55035	
Isolated DIO	4-CH isolated DI and 4-CH isolated DO (Nuvo-9505D only)	* For sub-zero operating temperature, a wide temperature HDD or Solid State Disk (SSD) is required. ** For 65W CPUs, the optional fan kit is recommended for operating at ambient temperatures higher than 50°C.		
<b>Internal Expansion Bus</b>				
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 for WiFi5, WiFi6 or Google Edge TPU module			

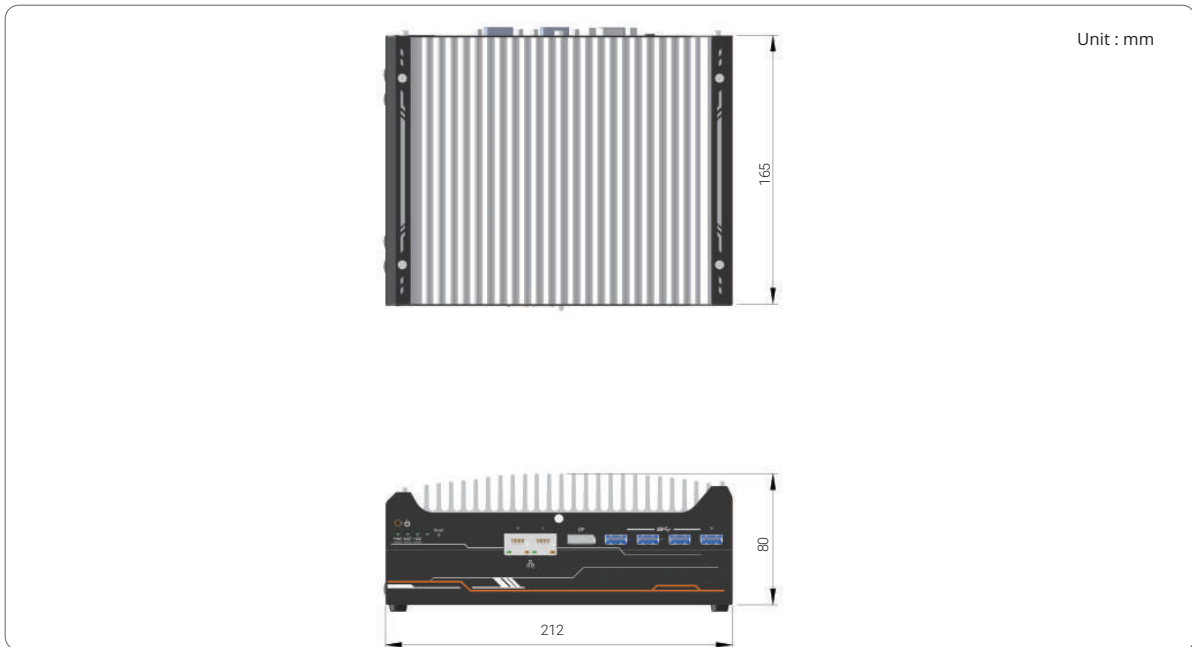
Nuvo-9501



## Appearance



## Dimensions



## Ordering Information

Model No.	Product Description
Nuvo-9501	Intel® 13 <sup>th</sup> /12 <sup>th</sup> -Gen Core™ compact fanless computer with 2x 2.5GbE and 4x USB3.2
Nuvo-9505D	Intel® 13 <sup>th</sup> /12 <sup>th</sup> -Gen Core™ compact fanless computer with 2x 2.5GbE, 4x USB3.2 and 8x isolated DIO

## 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. (recommended for 35W CPU)
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)
Wmkit-Nuvo9501	Wall mount assembly for Nuvo-9501 series
DINRAIL-31	DIN-rail mounting assembly for Nuvo-9501 series
AccsyBx-FAN-Nuvo9531_9501	Fan kit with 92mm x 92mm fan for Nuvo-9501 series

## Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

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