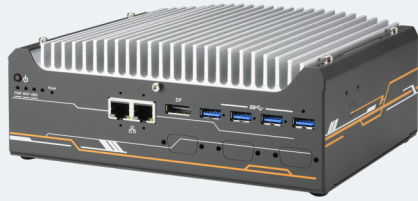# Nuvo-9501 Series

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

Key Features

· **Intel® 12th-Gen Core™ 35W/ 65W LGA1700 CPU**
· **Compact 212 x 165 x 80 mm footprint**
· **Rugged, -10°C to 60°C fanless operation**
· **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 storage**
· **Supports 1x 3.5"/2.5" SATA HDD/SSD**
· **VGA + DP dual display outputs**

Introduction

Nuvo-9501 is a cost-effective compact fanless embedded computer based on the Intel®12th -Gen Alder Lake platform. Built on the advanced Intel 7 process, Intel 12th Gen processors offer up to 16 cores/ 24 threads to deliver up to 1.8x the performance when compared to previous Intel 10th or 11th 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 SSDs with read/ write speeds up to 7000 MB/s. Also it supports a 2.5" or 3.5" HDD storage 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 necessary I/O connections to meet customers' needs and cost. It is suitable for a variety of industrial applications.

Specifications

System Core

Processor	Support Intel® 12th-Gen Core™ CPU (LGA1700 socket, 35W/ 65W 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® H610E platform controller hub
Graphics	Integrated Intel® UHD Graphics 770 (32EU)
Memory	Up to 32GB non-ECC DDR4 3200 SDRAM (one SODIMM slot)
TPM	Supports fTPM 2.0

I/O Interface

Ethernet	2x 2.5GBASE-T Ethernet ports by Intel® I226-V GbE controllers
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

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 for WiFi5, WiFi6 or Google Edge TPU module

Storage Interface

SATA HDD	1x internal SATA port for 3.5" HDD or 2.5" 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 8-35V DC input with remote on/ off control

Mechanical

Dimension	212mm (W) x 165 mm (D) x 80 mm (H)
Weight	2.5 kg
Mounting	Wall-mount (optional) or DIN-rail mount (optional)

Environmental

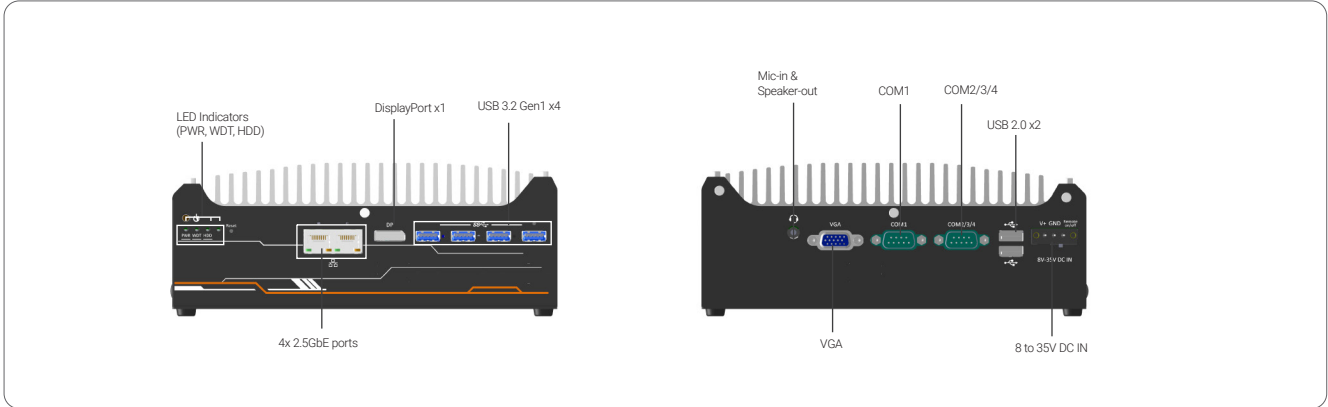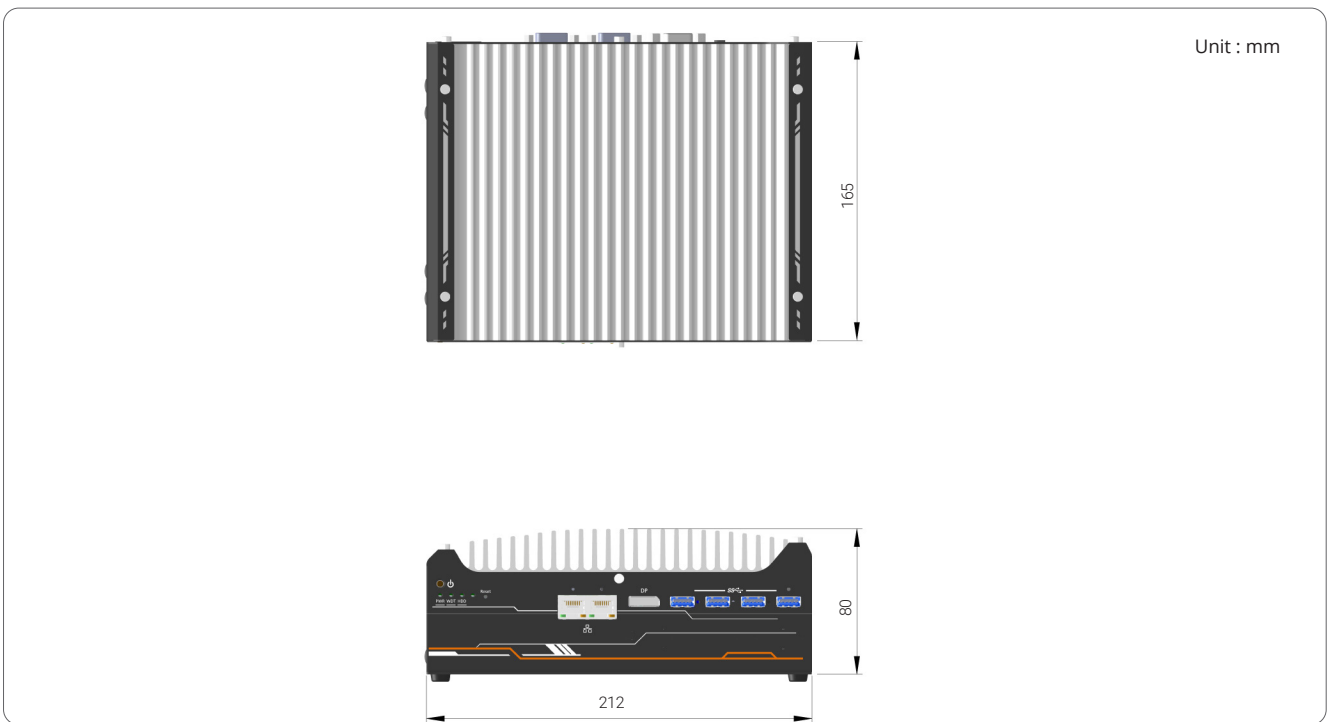|	
Operating Temperature	**with 35W CPU** -10°C to 60°C * **with 65W CPU** (installation of the optional fan kit is recommended) -10°C to 60°C */**
Storage Temperature	-40°C ~ 85°C
Humidity	10%~90% , non-condensing
Vibration	Operating, MIL-STD-810G, Method 514.6, Category 4
Shock	Operating, MIL-STD-810G, Method 516.6, Procedure I, Table 516.6-II
EMC	CE/FCC Class A, according to EN 55032 & EN 55035

* 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.

Appearance

LED Indicators (PWR, WDT, HDD)
DisplayPort x1
USB 3.2 Gen1 x4
4x 2.5GbE ports

Mic-in & Speaker-out
COM1
COM2/3/4
USB 2.0 x2
VGA
8 to 35V DC IN

Dimensions

Unit : mm

165

80

212

Ordering Information

Model No.	Product Description
Nuvo-9501	Intel® 12th-Gen Core™ compact fanless computer with 2x 2.5GbE and 4x USB3.2

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