

Rugged Embedded

# Nuvo-9531-FT Series

Intel® 14<sup>th</sup>/13<sup>th</sup>/12<sup>th</sup>-Gen Core™ i9/ i7/ i5/ i3 Compact Fanless Computer with 4x 2.5GbE, 4x USB3.2 and 1x Hot-swappable HDD Tray and Flattop Heatsink



CE FC

## Key Features

- 212 x 165 x 45 mm low-profile design with flattop heatsink
- Intel® 14th/13th/12th-Gen Core™ 65W/ 35W 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
- 1x M.2 2280 Gen4 x4 NVMe and 1x hot-swappable HDD tray for storage
- 4-CH isolated DI and 4-CH isolated DO
- VGA + DP dual display output
- Optional ignition power control

## Introduction

Nuvo-9531-FT is a new category of fanless computer utilizing flattop heatsink for passive heat dissipation. It is designed to be installed inside a metal cabinet, waterproof box or explosion-proof case, where ventilation is limited. With the flattop heatsink and the non-adhesive thermal pad on top, heat generated by Nuvo-9531-FT can be effectively conducted to the outer surface of the cabinet to maintain optimum operating temperature.

Nuvo-9531-FT supports Intel® 14th Gen processors with up to 24 cores/ 32 threads to deliver almost double the performance when compared to previous Intel® 10<sup>th</sup> or 11th Gen platforms. It has rich I/O functions such as 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 to support an NVMe SSD with 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 mini PCIe 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.

Combining excellent computing performance, abundant I/O connections, compactness, and a unique flattop heatsink, Nuvo-9531-FT is perfect for applications deployed in a sealed cabinet or confined space, where traditional fanless computers fall short.

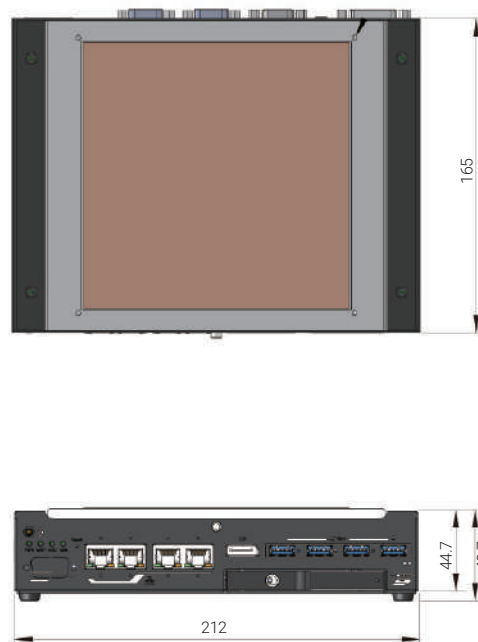
## Specifications

System Core		Internal Expansion Bus	
Processor	Supporting Intel® 14th-Gen Core™ CPU (LGA1700 socket, 65W/ 35W TDP)	Mini PCI Express	2x full-size mini PCI Express sockets with internal SIM sockets
	- Intel® Core™ i9-14900/ i9-14900T	M.2 E key	1x M.2 2230 E key socket for WiFi5, WiFi6 or Google Edge TPU module
	- Intel® Core™ i7-14700/ i7-14700T	<b>Storage Interface</b>	
	Supporting Intel® 13 <sup>th</sup> -Gen Core™ CPU (LGA1700 socket, 65W/ 35W TDP)	SATA HDD	1x hot-swappable 2.5" HDD/ SSD tray for 7mm HDD/ SSD
	- Intel® Core™ i9-13900E/ i9-13900TE	M.2	1x M.2 2280 M key socket (PCIe Gen4 x4) for NVMe SSD
	- Intel® Core™ i7-13700E/ i7-13700TE	<b>Power Supply</b>	
	- Intel® Core™ i5-13500E/ i5-13400E/ i5-13500TE	DC Input	1x 3-pin pluggable terminal block for 8-48V DC input with optional ignition power control
	- Intel® Core™ i3-14100/ i3-14100T	<b>Mechanical</b>	
Chipset	Supporting Intel® 12 <sup>th</sup> -Gen Core™ CPU (LGA1700 socket, 65W/ 35W TDP)	Dimension	212mm (W) x 165 mm (D) x 45 mm (H)
Graphics	- Intel® Core™ i9-12900E/ i9-12900TE	Weight	2.4 kg
Memory	- Intel® Core™ i7-12700E/ i7-12700TE	Mounting	Wall-mount (optional)
TPM	- Intel® Core™ i5-12500E/ i5-12500TE	<b>Environmental</b>	
I/O Interface	- Intel® Core™ i3-12100E/ i3-12100TE	Operating Temperature	with 35W CPU -25°C ~ 60°C <sup>[1][2]</sup> with 65W CPU -25°C ~ 60°C <sup>[1][2]</sup> (configured as 35W TDP)
Ethernet	- Intel® Pentium® G7400E/ G7400TE	Storage Temperature	-40°C ~ 85°C
PoE+	- Intel® Celeron® G6900E/ G6900TE	Humidity	10%~90% , non-condensing
USB 3.2		Vibration	MIL-STD-810H, Method 514.8, Category 4
USB 2.0		Shock	MIL-STD-810H, Method 516.8, Procedure I
Video Port (Integrated Graphics)		EMC	CE/FCC Class A, according to EN 55032 & EN 55035
Serial Port		<sup>[1]</sup> For sub-zero operating temperature, a wide temperature HDD or Solid State Disk (SSD) is required.	
Audio		<sup>[2]</sup> The system was tested while mounted on an aluminum panel measuring 60(W) x 60(D) x 0.3(H) cm in a high temperature environment to simulate in-cabinet conditions. For more information, please refer to the user manual.	
Isolated DIO			

## Appearance



## Dimensions



## Ordering Information

Model No.	Product Description
<b>Nuvo-9531-FT</b>	Intel® 14 <sup>th</sup> / 13 <sup>th</sup> /12 <sup>th</sup> -Gen Core™ i9/ i7/ i5/ i3 compact fanless computer with 4x 2.5GbE , 4x USB3.2 Gen 1, a hot-swappable HDD tray and flattop heatsink
	<i>Optional ignition power control and 802.3at PoE+ PSE for 4x 2.5GbE ports</i>

## Optional Accessories

<b>PA-160W-OW</b>	160W AC-DC power adapter 20V/8A; 18AWG/120cm; cord end terminals for terminal block, operating temperature: -30°C to 70°C.
<b>PA-280W-ET2</b>	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)
<b>Wmkit-Nuvo-9531-FT</b>	Wall mounting assembly for Nuvo-9531-FT