

Rugged Embedded

Nuvo-11000 Series

Intel® Core™ Ultra 200 Series Fanless Embedded Computer with 2.5GbE/ GbE, USB 3.2, 8-CH DIO, optional 10GbE and Expansion Cassette & MeziO® Interface

Preliminary



Key Features

- Supports Intel® Core™ Ultra 200 Series 24C/ 24T 35W/ 65W LGA1851 CPU
- Rugged, -25°C to 70°C fanless operation
- Up to 5x 2.5GbE and 1x GigE ports with optional PoE+, supporting 9.5 KB jumbo frame
- Up to 8x USB 3.2 Gen2 ports
- 4-CH isolated DI and 4-CH isolated DO
- 1x optional 10GBASE-T Ethernet
- Expansion Cassette for PCIe add-on card accommodation
- MeziO® interface for easy function expansion

Introduction

Nuvo-11000 series is Neosys' flagship rugged embedded computer built on the Intel® Core™ Ultra 200 series platform. Powered by TSMC's advanced 3nm photolithography, the latest Core™ Ultra 200 processors offer up to 24 cores/ 24 threads with higher CPU clock rates, and an integrated neural processing unit (NPU) for AI acceleration. This results in a 1.2x boost in CPU performance and AI computing capabilities of up to 36 TOPs. Combined with DDR5-6400 memory and PCIe Gen5 support, it delivers a significant improvement in computing power, enhancing performance across diverse industrial applications.

Nuvo-11000 series provides comprehensive I/O capabilities for industrial applications. It includes five 2.5Gb and a 1Gb Ethernet ports with optional PoE+ capability, one optional 10GbE port for high-speed data transfer or 10Gb industrial camera, and eight USB 3.2 Gen2 ports for USB3 cameras. Additionally, an upgraded M.2 Gen5x4 slot supports the latest NVMe SSDs, achieving read/ write speeds over 11,000 MB/s and the system also features 4x isolated DI and 4x isolated DO for automation and machine vision applications.

For extended functionality, the series supports add-on cards via its expansion Cassette, proprietary MeziO® interface, and internal mini-PCIe slots, ensuring adaptability to diverse application requirements.

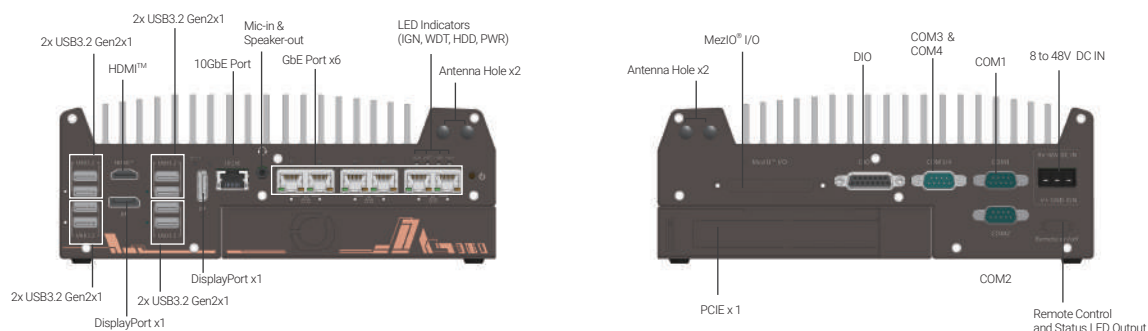
The advanced Intel® Core™ Ultra 200 processors also bring better energy efficiency to the Nuvo-11000 platform. Compared to the previous generation, they can deliver nearly 120% the performance while consuming only 80% of the power*. Combining a proven thermal design with versatile I/O functions, Nuvo-11000 offers a rugged, high-performance embedded computing solution tailored for a wide range of industrial applications.

* Benchmarked using PassMark PerformanceTest.

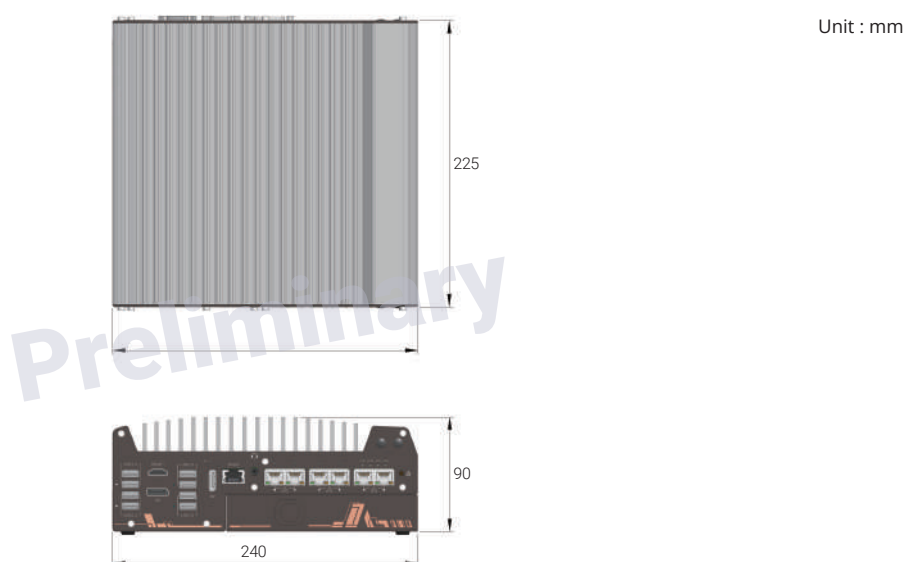
Specifications

System Core		Internal Expansion Bus	
Processor	Supports Intel® Core™ Ultra 200 series CPU (LGA 1851 socket), 35W and 65W TDP	PCI Express	1x PCIe x16 slot@Gen4, 16-lanes PCIe signals in Cassette (Nuvo-11002E/ 11006E)
	- Intel® Core™ Ultra 9 285/285T	Mini PCI Express	2x full-size mini PCI Express socket
	- Intel® Core™ Ultra 7 265/265T	Expandable I/O	1x MeziO® expansion port for Neosys MeziO® modules
	- Intel® Core™ Ultra 5 245/245T	Power Supply	
		DC Input	1x 3-pin pluggable terminal block for 8V to 48VDC DC input (V+/ GND/ IGN)
Chipset	Intel® H810/ Q870 Platform Controller Hub	Remote Ctrl. & LED Output	1x 10-pin (2x5) wafer connector for remote on/off control and status LED output
Graphics	Integrated Intel® X® LPG Graphics	Mechanical	
AI Engine	Integrated neural processing unit	Dimension	240 mm (W) x 225 mm (D) x 90 mm (H) (Nuvo-11000E series) 240 mm (W) x 225 mm (D) x 79 mm (H) (Nuvo-11000LP series)
Memory	Up to 96 GB non-ECC DDR5 6400 SDRAM (Dual SODIMM slots)	Weight	3.58 kg (Nuvo-11000E Series) 3.36 kg (Nuvo-11000LP series)
AMT	Supports Intel vPro/ AMT 16.0	Mounting	Wall-mount (standard) or DIN-rail mount (optional)
TPM	Supports dTPM 2.0	Environmental	
I/O Interface		Operating Temperature	With 35W CPU -25°C to 70°C* With 65W CPU -25°C to 70°C* (configured as 35W TDP) -25°C to 50°C* (configured as 65W TDP)
Ethernet	1x 2.5G Ethernet by I226-IT and 1x Gigabit Ethernet by I219-LM (Nuvo-11002E/ LP) with screw-lock	Storage Temperature	-40°C to 85°C
	5x 2.5G Ethernet by I226-IT and 1x Gigabit Ethernet by I219-LM (Nuvo-11006E/ LP) with screw-lock	Humidity	10% to 90% , non-condensing
PoE+	Optional IEEE 802.3at PoE+ PSE for Port 3 ~ Port 6 100 W total power budget	Vibration	MIL-STD-810H, Method 514.8, Category 4
USB	8x USB 3.2 Gen2 ports (Nuvo-11006E/ LP) 2x USB 3.2 Gen2, 2x USB3.2 Gen1 and 4x USB2.0 ports (Nuvo-11002E/ LP)	Shock	MIL-STD-810H, Method 516.8, Procedure I
Isolated DIO	4-CH isolated DI and 4-CH isolated DO	EMC	CE/FCC Class A, according to EN 55032 & EN 55035
Video Port	1x HDMI™, supporting 3840 x 2160 resolution 2x DisplayPort, supporting 4096 x 2304 resolution	* For sub-zero and over 60°C operating temperature, a wide temperature HDD/ SSD/ NVMe is required.	
Serial Port	2x software-programmable RS-232/ 422/ 485 ports (COM1/ 2) 2x 3-wire RS-232 ports (COM3/ 4)		
Audio	1x 3.5 mm jack for mic-in and speaker-out		
I/O Interface			
M.2 NVMe	1x M.2 2280 M key NVMe socket (PCIe Gen5x4) for NVMe SSD (Nuvo-11006E/ LP)		
SATA HDD	2x internal SATA port for 2.5" HDD/ SSD installation, supporting RAID 0/ 1 (Nuvo-11000E) 1x hot-swappable 2.5" HDD tray (7mm HDD/ SSD) and 1x internal 2.5" SATA port, supporting RAID 0/ 1 (Nuvo-11000LP)		

Appearance



Dimensions



Ordering Information

Model No.	Product Description
Nuvo-11002E	Intel® Core™ Ultra 200 Series Rugged Embedded Computer with 2x 2.5GbE/GbE, USB 3.2, single-slot PCIe Cassette & MeziO® Interface
Nuvo-11006E	Intel® Core™ Ultra 200 Series Rugged Embedded Computer with 6x 2.5GbE/GbE, USB 3.2, single-slot PCIe Cassette & MeziO® Interface
Nuvo-11002LP	Intel® Core™ Ultra 200 Series Rugged Embedded Computer with 2x 2.5GbE/GbE, USB 3.2, MeziO® Interface & 2.5" HDD tray
Nuvo-11006LP	Intel® Core™ Ultra 200 Series Rugged Embedded Computer with 6x 2.5GbE/GbE, USB 3.2, MeziO® Interface & 2.5" HDD tray
PoE+ Option	Option of 802.3at PoE+ PSE for 2.5GbE port 3 to port 6
10G Ethernet Option	Option of 10GBASE-T Ethernet port

Optional Accessories

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 or 35W CPU with PoE+ option)
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)
Dmpbr-Nuvo5000_7000	Neosys' patented damping brackets assembly for Nuvo-11000 series
DINRAIL-O	DIN-rail mount assembly for Nuvo-11000 series
MeziO® Modules	
MeziO®-C180	MeziO® module with 4x RS-232/ 422/ 485 ports and 4x RS-232 ports
MeziO®-C181	MeziO® module with 4x RS-232/ 422/ 485 ports and 4x RS-422/ 485 ports
MeziO®-D220	MeziO® module with 8-CH isolated digital input and 8-CH isolated digital output
MeziO®-D230	MeziO® module with 16-CH isolated digital input and 16-CH isolated digital output
MeziO®-D330	MeziO® module with 16-CH isolated DI and 16-CH isolated DO MeziO® module
MeziO®-V20-EP	MeziO® module with ignition power control function for in-vehicle application
MeziO®-U4	MeziO® module with 4x USB 3.1 ports
MeziO®-G4	MeziO® module with 4x GigE ports
MeziO®-G4P	MeziO® module with 4x IEEE 802.3at PoE+ ports

Only Nuvo-11006LP/E/DE+PoE support MeziO-G4P