Rugged Embedded

Nuvo-11000 Series

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

CE FC

Key Features

- **Supports Intel® Core™ Ultra 200S 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**

CONTACT US

Introduction

Nuvo-11000 series is Neousys' flagship rugged embedded computer built on the Intel® Core™ Ultra 200S series platform. Powered by TSMC's advanced 3nm photolithography, the latest Core™ Ultra 200S 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 200S 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*. Combing 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	
Processor	Supports Intel® Core™ Ultra 200S series Processors (LGA 1851 socket), 35W and 65W TDP - Intel® Core™ Ultra 9 285/285T - Intel® Core™ Ultra 7 265/265T - Intel® Core™ Ultra 5 245/245T
Chipset	Intel® Q870 Platform Controller Hub (Nuvo-11006) Intel® H810 Platform Controller Hub (Nuvo-11002)
Graphics	Integrated Intel Xe LPG Graphics
AI Engine	Integrated neural processing unit
Memory	Up to 128GB non-ECC DDR5 6400 SDRAM (Dual SODIMM slots)
AMT	Supports Intel vPro/ AMT 16.0 (Nuvo-11006 only)
TPM	Supports dTPM 2.0
I/O Interface	
Ethernet	1x 2.5G Ethernet by I226-IT and 1x Gigabit Ethernet by I219-LM (Nuvo-11002E/ LP) with screw-lock 5x 2.5G Ethernet by I226-IT and 1x Gigabit Ethernet by I219-LM (Nuvo-11006E/ LP) with screw-lock 1x optional 10GBASE-T Ethernet (Nuvo-11006E/ LP)
PoE+	Optional IEEE 802.3at PoE+ PSE for Port 3 ~ Port 6 100 W total power budget
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)
Isolated DIO	4-CH isolated DI and 4-CH isolated DO
Video Port	1x HDMI™, supporting 3840 x 2160 resolution 2x DisplayPort, supporting 3840 x 2160 resolution
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
Storage 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)

Internal Expansion Bus	
PCI Express	1x PCIe x16 slot@Gen4, 16-lanes PCIe signals in Cassette for installing an NVIDIA® graphics card up to 145W TDP (Nuvo-11002E/ 11006E)
Mini PCI Express	2x full-size mini PCI Express socket
Expandable I/O	1x MezIO® expansion port for Neousys MezIO® modules
USB2.0	1x USB 2.0 port with Type-A connector (internal, Nuvo-11006E/ LP)
Power Supply	
DC Input	1x 3-pin pluggable terminal block for 8V to 48VDC DC input with optional ignition power control
Remote Ctrl. & LED Output	1x 10-pin (2x5) wafer connector for remote on/off control and status LED output
Mechanical	
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)
Weight	3.58 kg (Nuvo-11000E Series) 3.36 kg (Nuvo-11000LP series)
Mounting	Wall-mount (standard) or DIN-rail mount (optional)
Environmental	
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)
Storage Temperature	-40°C to 85°C
Humidity	10% to 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

** For sub-zero and over 60°C operating temperature, a wide temperature HDD/ SSD/ NVMe is required.*
***For 10G LAN, operational up to 60°C ambient.*

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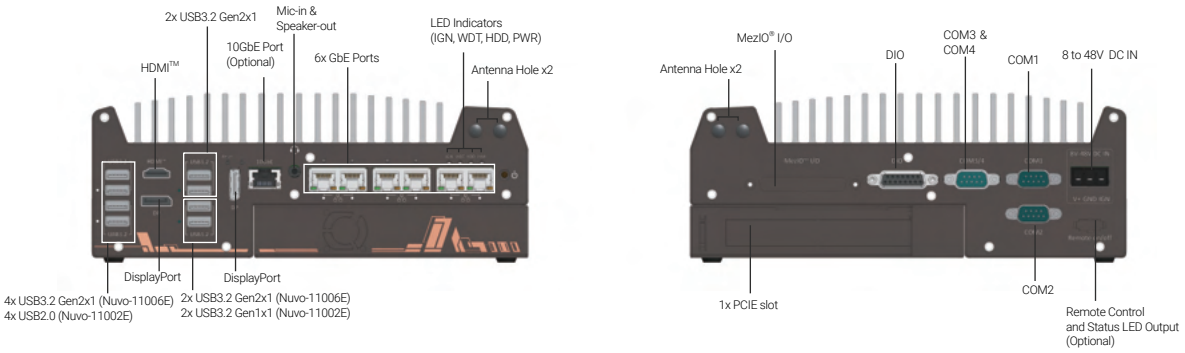
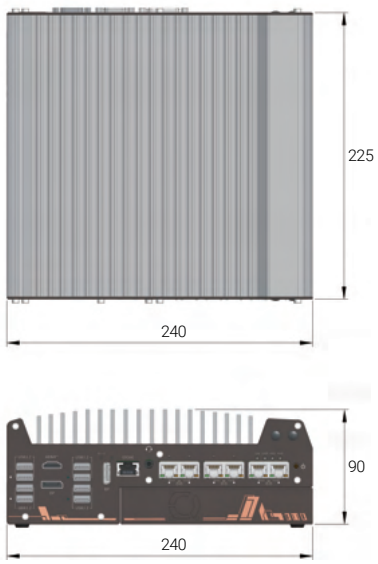
Appearance

Nuvo-11000E



Dimensions

Unit : mm



Ordering Information

Model No.	Product Description
Nuvo-11002E	Intel® Core™ Ultra 200S Series Rugged Embedded Computer with 2x 2.5GbE/GbE, USB 3.2, single-slot PCIe Cassette & MezIO® Interface
Nuvo-11006E	Intel® Core™ Ultra 200S Series Rugged Embedded Computer with 6x 2.5GbE/GbE, USB 3.2, single-slot PCIe Cassette & MezIO® Interface
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 (Nuvo-11006 series)

Optional Accessories

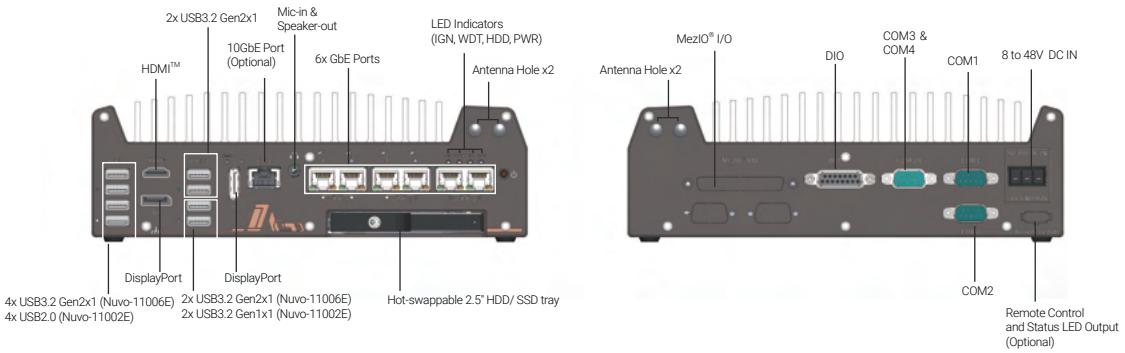
PA-280W-ET2	280W AC/DC power adapter 24V/ 11.67A ; 16AWG/ 100cm; cord end terminals for terminal block, operating temperature : -30°C to 60°C. (recommended for 65W CPU or 35W CPU with PoE+ option)
PA-160W-OW	160W AC-DC power adapter 20V/8A; 18AWG/120cm; cord end terminals for terminal block, operating temperature: -30°C to 70°C. (recommended for 35W CPU)
Dmpbr-Nuvo5000_7000	Neousys' patented damping brackets assembly for Nuvo-5000/7000/9000/11000 series
DINRAIL-O	DIN-rail mount assembly for Nuvo-5000/7000/9000/11000 series
Fankit-25	Fan assembly for 1-slot Cassette, 25x25x10 mm
Cbl-W212F-W210F-23CM	Cable Wafer 2.0 Female 12P to 10P, Length: 23cm

MezIO® Modules

MezIO®-C180	MezIO® module with 4x RS-232/ 422/ 485 ports and 4x RS-232 ports	***MezIO®-V20-EP***	MezIO® module with ignition power control function for in-vehicle application
MezIO®-C181	MezIO® module with 4x RS-232/ 422/ 485 ports and 4x RS-422/ 485 ports	***MezIO®-U4***	MezIO® module with 4x USB 3.1 ports
MezIO®-D220	MezIO® module with 8-CH isolated digital input and 8-CH isolated digital output	***MezIO®-G4***	MezIO® module with 4x GigE ports
MezIO®-D230	MezIO® module with 16-CH isolated digital input and 16-CH isolated digital output	***MezIO®-G4P***	MezIO® module with 4x IEEE 802.3at PoE+ ports
MezIO®-D330	MezIO® module with 16-CH isolated DI and 16-CH isolated DO MezIO® module		*Only Nuvo-11006E/LP -PoE support MezIO-G4P*

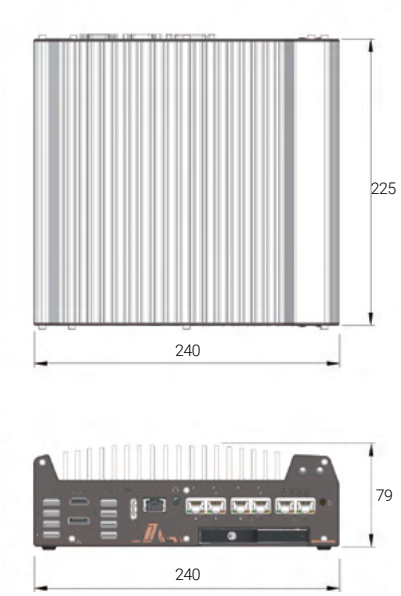
Appearance

Nuvo-11000LP



Dimensions

Unit : mm



Ordering Information

Model No.	Product Description
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 (Nuvo-11006 series)

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	Neousys' patented damping brackets assembly for Nuvo-5000/7000/9000/11000 series
DINRAIL-O	DIN-rail mount assembly for Nuvo-5000/7000/9000/11000 series
Fankit-25	Fan assembly for 1-slot Cassette, 25x25x10 mm
Cbl-W212F-W210F-23CM	Cable Wafer 2.0 Female 12P to 10P, Length: 23cm

MezIO® Modules

MezIO®-C180	MezIO® module with 4x RS-232/ 422/ 485 ports and 4x RS-232 ports	***MezIO®-V20-EP***	MezIO® module with ignition power control function for in-vehicle application
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MezIO®-D220	MezIO® module with 8-CH isolated digital input and 8-CH isolated digital output	***MezIO®-G4***	MezIO® module with 4x GigE ports
MezIO®-D230	MezIO® module with 16-CH isolated digital input and 16-CH isolated digital output	***MezIO®-G4P***	MezIO® module with 4x IEEE 802.3at PoE+ ports
MezIO®-D330	MezIO® module with 16-CH isolated DI and 16-CH isolated DO MezIO® module		*Only Nuvo-11006E/LP -PoE support MezIO-G4P*

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