Nuvo-5000E/P Series

Intel® 6th-Gen Skylake Core™ i7/i5/i3 Fanless Controller with 6x GbE, Expansion Cassette and MezIO™ Interface

⬛ *Key Features*

- · **Intel® 6th-Gen Core™ i7/i5/i3 LGA1151 35W/65W socket-type CPU**
- · **Patented Cassette* for PCI/PCIe add-on card accommodation**
- · **MezIO™ interface for easy function expansion**
- · **Rugged, -25°C to 70°C fanless operation**
- · **Up to 6x GigE ports, supporting 9.5 KB jumbo frame**
- · **Up to 32 GB, DDR4-2133 SODIMM**
- · **Accommodates two 2.5" SATA HDD/SSD with RAID 0/1 support**
- · **VGA/DVI/DP triple independent display, supporting 4K2K resolution**

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*R.O.C Patent No. M456527

Introduction

Integrating cutting-edge technologies, Neousys creates the next-generation fanless controller, Nuvo-5000 series, with ruggedness, performance and versatility. It supports socket-type, 6th-Gen Core™ processors for flexible CPU selection from Pentium® to Core™ i7 according to performance consideration, and remains -25°C to 70°C true wide-temperature operating.

It provides plenty of embedded I/O functions for general applications, including Gigabit Ethernet, USB3/USB2, COM and VGA/DVI/DP triple display outputs. If they are not enough, Neousys' patented Cassette offers an easy way for I/O expansion by installing an off-the-shelf PCIe/PCI card.

Nuvo-5000 further incorporates Neousys' MezIO™, an interface electronically and mechanically fitted for embedded system, to present a cost-effective and reliable way for I/O enhancement. By installing optional MezIO™ module, Nuvo-5000 can deliver more application-oriented functions for diversified vertical markets.

Latest Intel® CPU, Cassette and MezIO™ create a powerful controller with numerous I/O configurations. Nuvo-5000 is the one platform for all!
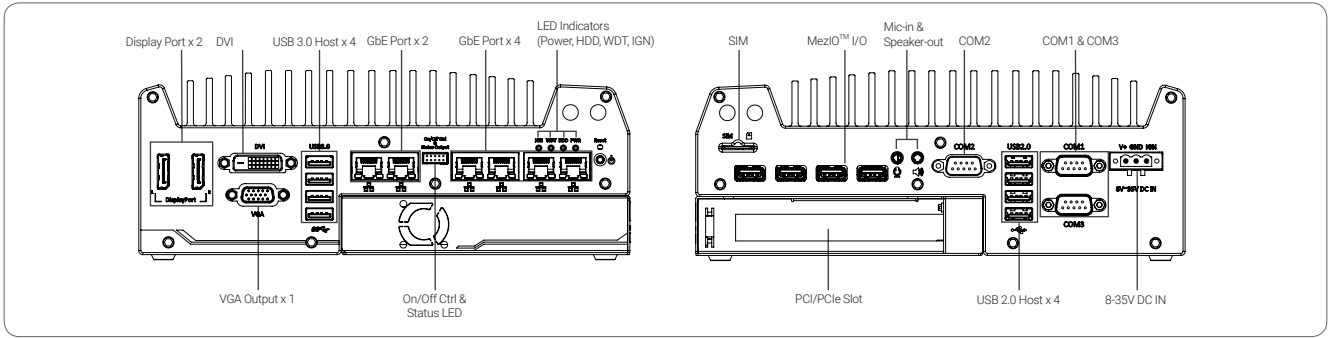
Specifications

System Core

Processor	Intel® Core™ i7-6700 (8M Cache,3.4/4.0 GHz, 65W TDP)* Intel® Core™ i5-6500 (6M Cache, 3.2/3.6 GHz, 65W TDP)* Intel® Core™ i3-6100 (3M Cache, 3.7 GHz, 51W TDP)* Intel® Pentium® G4400 (3M Cache, 3.3 GHz, 54W TDP)* Intel® Celeron® G3900 (2M Cache, 2.8 GHz, 51W TDP)* Intel® Core™ i7-6700TE (8M Cache, 2.4/3.4 GHz, 35W TDP) Intel® Core™ i5-6500TE (6M Cache, 2.3/3.3 GHz, 35W TDP) Intel® Core™ i3-6100TE (4M Cache, 2.7 GHz, 35W TDP) Intel® Pentium® G4400TE (3M Cache, 2.4 GHz, 35W TDP) Intel® Celeron® G3900TE (2M Cache, 2.3 GHz, 35W TDP)
Chipset	Intel® Q170 Platform Controller Hub
Graphics	Integrated Intel® HD Graphics 530/510
Memory	Up to 32 GB DDR4-2133 SDRAM by two SODIMM sockets
AMT	Supports AMT 11.0
TPM	Supports TPM 2.0

I/O Interface

Ethernet	2x Gigabit Ethernet ports by Intel® 1x I219 and I210 (Nuvo-5002E/P) 6x Gigabit Ethernet ports by Intel® 1xI219 and 5x I210 (Nuvo-5006E/P)
PoE+	Optional IEEE 802.3at PoE+ PSE for GbE Port 3 ~ Port 6, 80 W total power budget
USB	4x USB 3.0 ports via native XHCI controller 4x USB 2.0 ports
Video Port	1x stacked VGA + DVI-D connector 2x DisplayPort connectors, supporting 4K2K resolution
Serial Port	2x software-programmable RS-232/422/485 port (COM1 & COM3) 1x RS-232 port (COM2)
Audio	1x Mic-in and 1x Speaker-out

Storage Interface

SATA HDD	2x Internal SATA port for 2.5" HDD/SSD installation, supporting RAID 0/1
mSATA	1x full-size mSATA port (mux with mini-PCIe)

Expansion Bus

PCI/PCI Express	1x PCI slot in Cassette (Nuvo-5002P/5006P) 1x PCIe x16 slot @ Gen3, 8-lanes PCIE signals in Cassette (Nuvo-5002E/5006E)
Mini PCI-E	1x internal mini PCI Express socket with front-accessible SIM socket 1x internal mini PCI Express socket with internal SIM socket (mux with mSATA)
Expandable I/O	1x MezIO™ expansion port for Neousys' MezIO™ modules

Power Supply

DC Input	1x 3-pin pluggable terminal block for 8~35VDC DC input
Remote Ctrl. & Status 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)
Weight	4.4 kg (incl. CPU, memory and HDD)
Mounting	Wall-mounting (standard) or DIN-Rail mounting (optional)

Environmental

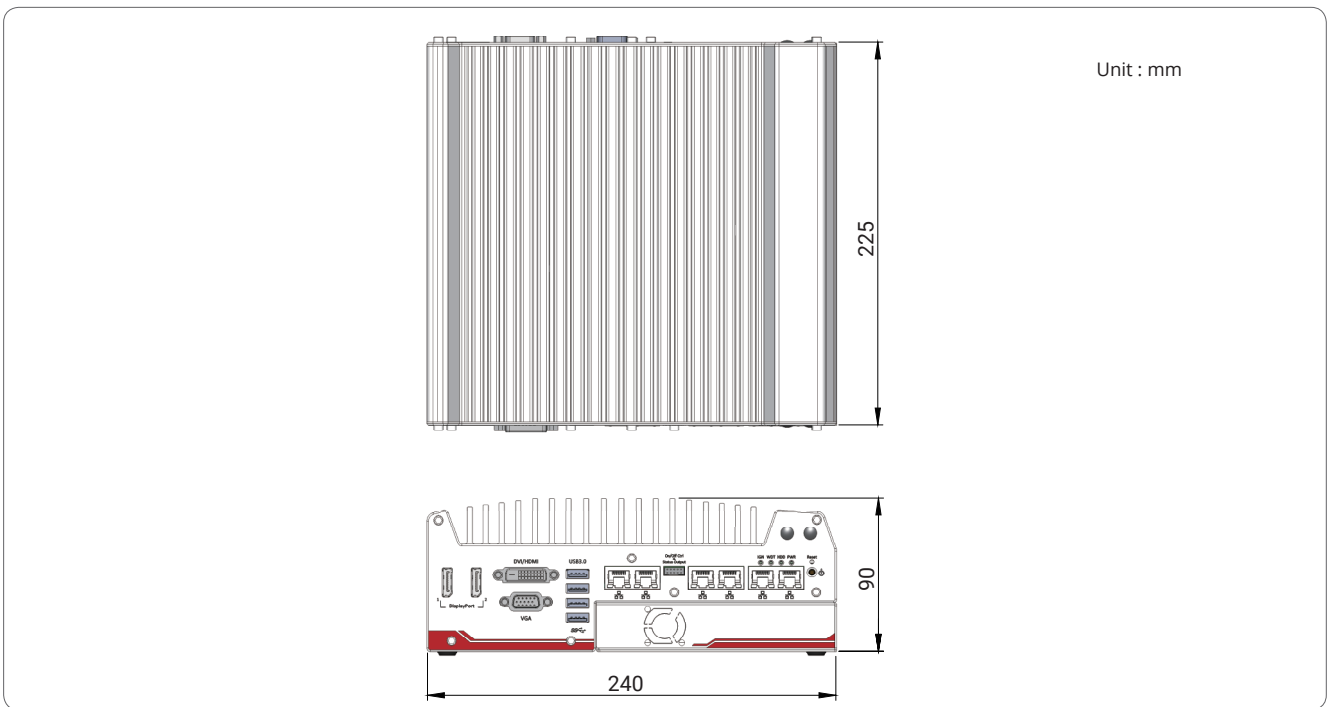|	

Operating Temperature	with i7-6700TE, i5-6500TE, i3-6100TE, Pentium G4400TE (35W TDP)
	  -25°C ~ 70°C **
	with i7-6700, i5-6500, i3-6100 (65W/51W TDP)
	  -25°C ~ 70°C */** (configured as 35W CPU mode)
	  -25°C ~ 50°C */** (configured as 65W/51W CPU mode)

Storage Temperature	-40°C ~ 85°C
Humidity	10%~90% , non-condensing
Vibration	Operating, 5 Grms, 5-500 Hz, 3 Axes (w/ SSD, according to IEC60068-2-64)
Shock	Operating, 50 Grms, Half-sine 11 ms Duration (w/ SSD, according to IEC60068-2-27)
EMC	CE/FCC Class A, according to EN55022, EN55024 & EN55032

* For i7-6700 running at 65W mode, the high operating temperature shall be limited to 50°C and thermal throttling may occur when sustained full-loading applied. Users can configure CPU power in BIOS to obtain higher operating temperature.
** For sub-zero operating temperature, a wide temperature HDD drive or Solid State Disk (SSD) is required.

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Appearance

Dimensions

Unit : mm

Ordering Information

Model No.	Product Description
Nuvo-5002E	Intel® 6th-Gen Core™ fanless controller with 2x GbE, PCI Express Cassette and MezIO™
Nuvo-5002P	Intel® 6th-Gen Core™ fanless controller with 2x GbE, PCI Cassette and MezIO™
Nuvo-5006E	Intel® 6th-Gen Core™ fanless controller with 6x GbE, PCI Express Cassette and MezIO™
Nuvo-5006P	Intel® 6th-Gen Core™ fanless controller with 6x GbE, PCI Cassette and MezIO™
Option of 802.3at PoE+ for GbE port 3 ~ port 6	

Optional Accessories

DIN-Rail mounting kit

120W AC/DC power adapter

Cassette and 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™-V20-EP	MezIO™ module with ignition power control function for in-vehicle usage
CSM-PoE354	Cassette module with PCIe-PoE354 and pre-installed passive heat-spreader
CSM-USB380	Cassette module with PCIe-USB380 and pre-installed passive heat-spreader
CSM-NV750	Cassette module with nVidia® GTX 750 Ti graphics card, pre-installed heat-spreader and fan
CSM-R800	Cassette module with 4-drives hardware RAID 0/1/10, accommodating four 2.5" HDD/SSD

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