

# Nuvo-5000E/P Series

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



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## Key Features

- Intel® 6th-Gen Core™ i7/ i5/ i3 35W/65W LGA1151 CPU
- Patented Cassette\* for PCI/ PCIe add-on card
- 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

\*R.O.C Patent No. M456527

## Introduction

Nuvo-5000 is Neosys' rugged fanless embedded controller with performance and versatility. It supports socket-type 6th-Gen Core™ processors so one can choose a CPU according to application performance needs while Neosys' efficient heat-dissipating design offers true -25°C to 70°C Wide temperature operation.

With plenty of embedded I/O connections for applications including Gigabit Ethernet, USB 3.1/ USB 2.0, COM ports, VGA/ DVI/ DP triple display outputs and if that's not enough, Neosys' patented Cassette offers I/O expansion by installing an off-the-shelf PCIe/PCI card.

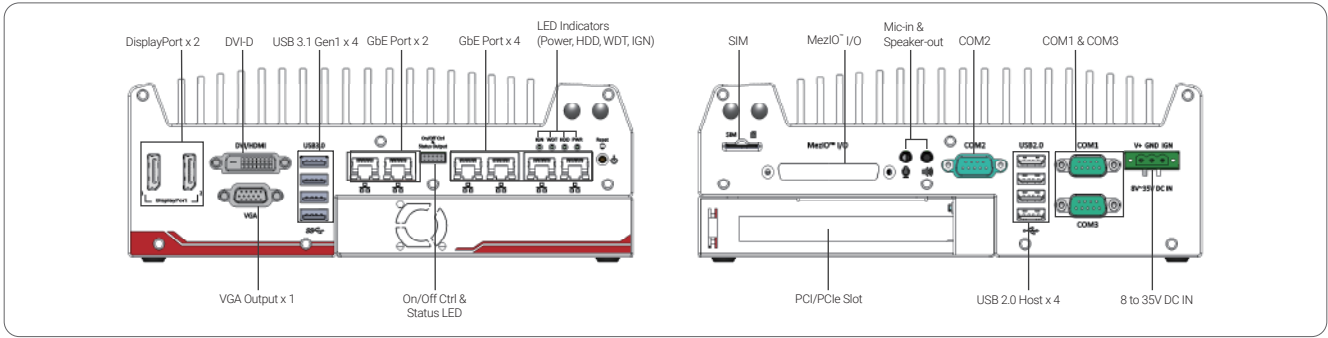
On top of all that, Nuvo-5000 also incorporates Neosys MeziO™ interface. The patented design enhances Neosys' embedded system with a cost-effective and reliable way for I/O expansion. The MeziO™ module can deliver application-oriented functions for diversified vertical markets.

Neosys Nuvo-5000 features 6th-Gen Intel® CPU, patented Cassette and MeziO™ to create a powerful and yet diverse controller for all your industrial application needs!

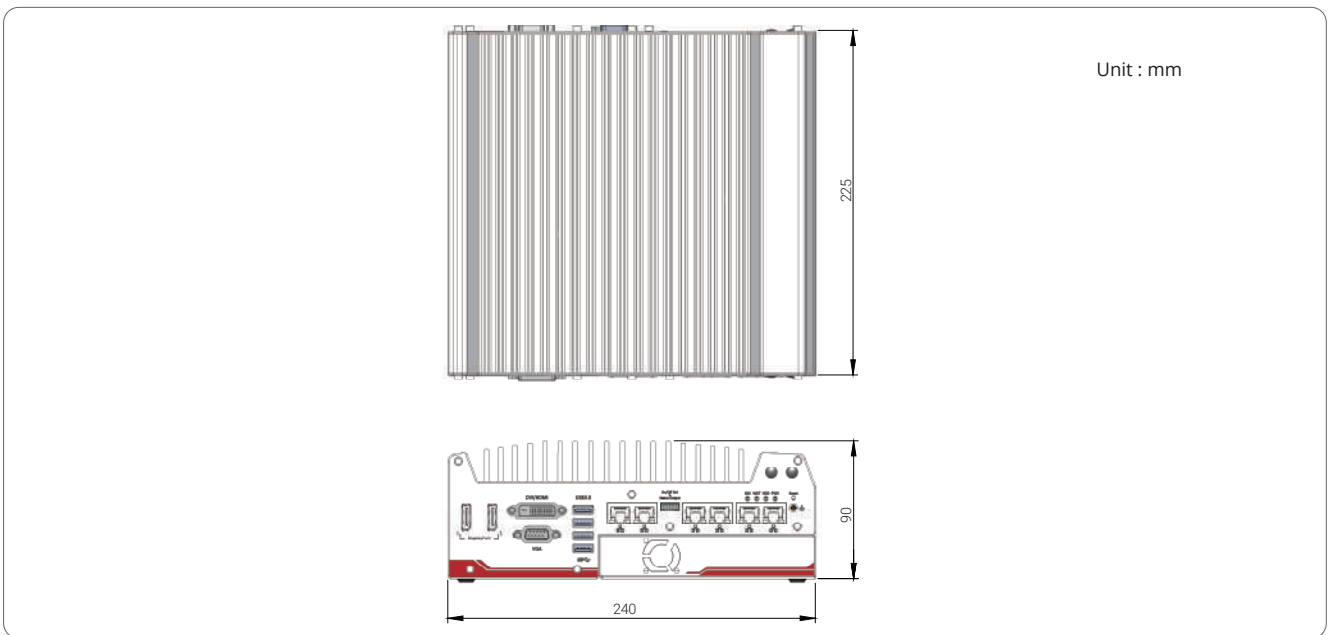
## Specifications

System Core		Expansion Bus	
Processor	Intel® Core™ i7-6700 (8M Cache, 3.4/ 4.0 GHz, 65W TDP)*	PCI/PCI Express	1x PCI slot in Cassette (Nuvo-5002P/5006P)
	Intel® Core™ i5-6500 (6M Cache, 3.2/ 3.6 GHz, 65W TDP)*		1x PCIe x16 slot @ Gen3, 8-lanes PCIe signals in Cassette (Nuvo-5002E/ 5006E)
	Intel® Core™ i3-6100 (3M Cache, 3.7 GHz, 51W TDP)*	Mini PCI-E	1x internal Mini PCIe socket with front-accessible SIM socket
	Intel® Pentium® G4400 (3M Cache, 3.3 GHz, 54W TDP)*		1x internal Mini PCIe socket with internal SIM socket (mux with mSATA)
	Intel® Celeron® G3900 (2M Cache, 2.8 GHz, 51W TDP)*	Expandable I/O	1x MeziO™ expansion port for Neosys' MeziO™ modules
	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)	<b>Power Supply</b>	
	Intel® Core™ i3-6100TE (4M Cache, 2.7 GHz, 35W TDP)	DC Input	1x 3-pin pluggable terminal block for 8 to 35V DC input
	Intel® Pentium® G4400TE (3M Cache, 2.4 GHz, 35W TDP)	Remote Ctrl. & Status Output	1x 10-pin (2x5) wafer connector for remote on/off control and status LED output
	Intel® Celeron® G3900TE (2M Cache, 2.3 GHz, 35W TDP)	<b>Mechanical</b>	
Chipset	Intel® Q170 platform controller hub	Dimension	240mm (W) x 225mm (D) x 90mm (H)
Graphics	Integrated Intel® HD graphics 530/ 510	Weight	3.6kg
Memory	Up to 32GB DDR4-2133 SDRAM (two SODIMM slots)	Mounting	Wall-mount (standard) or DIN-rail mount (optional)
AMT	Supports AMT 11.0	<b>Environmental</b>	
TPM	Supports TPM 2.0	Operating Temperature	-25°C ~ 70°C **
<b>I/O Interface</b>			
Ethernet	2x Gigabit Ethernet ports by Intel® 1x I219 and I210 (Nuvo-5002E/P) 6x Gigabit Ethernet ports by Intel® 1x I219 and 5x I210 (Nuvo-5006E/ P)	Storage Temperature	-25°C ~ 70°C */** (configured as 35W CPU mode)
PoE+	Optional IEEE 802.3at PoE+ PSE for GbE Ports 3 ~ 6, 80W total power budget		-25°C ~ 50°C */** (configured as 65W/ 51W CPU mode)
USB 3.1	4x USB 3.1 Gen1 (5 Gbps) ports via native xHCI controller	Humidity	10%~90% , non-condensing
USB 2.0	4x USB 2.0 ports	Vibration	Operating, 5Grms, 5-500 Hz, 3 Axes (w/ SSD, according to IEC60068-2-64)
Video Port	1x stacked VGA + DVI-D 2x DisplayPort, supporting 4K2K resolution (triple-independent display support)	Shock	Operating, 50Grms, Half-sine 11ms Duration (w/ SSD, according to IEC60068-2-27)
Serial Port	2x software-programmable RS-232/ 422/ 485 port (COM1 & COM3) 1x RS-232 port (COM2)	EMC	CE/FCC Class A, according to EN 55022, EN 55024, EN 55032 & EN 60950
Audio	1x Mic-in and 1x speaker-out	* For i7-6700 running at 65W mode, the highest 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.	
<b>Storage Interface</b>			
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)		

## Appearance



## Dimensions



## Ordering Information

Model No.	Product Description
Nuvo-5002E	Intel® 6th-Gen Core™ fanless controller with 2x GbE, PCI Express Cassette and MeziO™ interface
Nuvo-5002P	Intel® 6th-Gen Core™ fanless controller with 2x GbE, PCI Cassette and MeziO™ interface
Nuvo-5006E	Intel® 6th-Gen Core™ fanless controller with 6x GbE, PCI Express Cassette and MeziO™ interface
Nuvo-5006P	Intel® 6th-Gen Core™ fanless controller with 6x GbE, PCI Cassette and MeziO™ interface
<i>Optional IEEE 802.3at PoE+ for GbE ports 3 ~ 6</i>	

## Optional Accessories

DINRAIL-O	DIN-rail mount assembly for Nuvo-5000 series
Fankit-25	Fan assembly for 1-slot Cassette, 25x25x10mm
PA-120W-OW	120W AC/DC power adapter 20V/6A; 18AWG/120cm; cord end terminals for terminal block, operating temperature : -30 to 70 °C.
Dmpbr-Nuvo5000_7000	Neousys' patented damping bracket assembly for Nuvo-7000E/DE/P
ETHY-100-2008S	Ethernet I/O expansion module with 8 isolated digital inputs and outputs
ETHY-100-2604S	Ethernet I/O expansion module with 8 isolated digital inputs and 4 relays outputs (coming soon)
<b>Cassette Modules</b>	
CSM-PoE354	Cassette module with PCIe-PoE354at and pre-installed passive heat-spreader
CSM-R800	Cassette module accommodating four 2.5" HDD/ SSD (support RAID 0/ 1/ 10)

### 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 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-5006E-PoE and Nuvo-5006P-PoE support MeziO-G4P