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Nuvo-5000LP Series

Intel® 6th-Gen Core™ i7/i5/i3 Fanless Controller with 6x GbE, MezIO™ Interface and Low-profile Chassis

Key Features

· Intel® 6th-Gen Core™ i7/ i5/ i3 35W/ 65W LGA1151 CPU
· 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 32GB, DDR4-2133 SO-DIMM
· One hot-swappable 2.5" HDD/ SSD and one fixed 2.5" HDD/ SSD, supporting RAID 0/ 1
· VGA/ DVI/ DP triple independent display, supporting 4K2K resolution
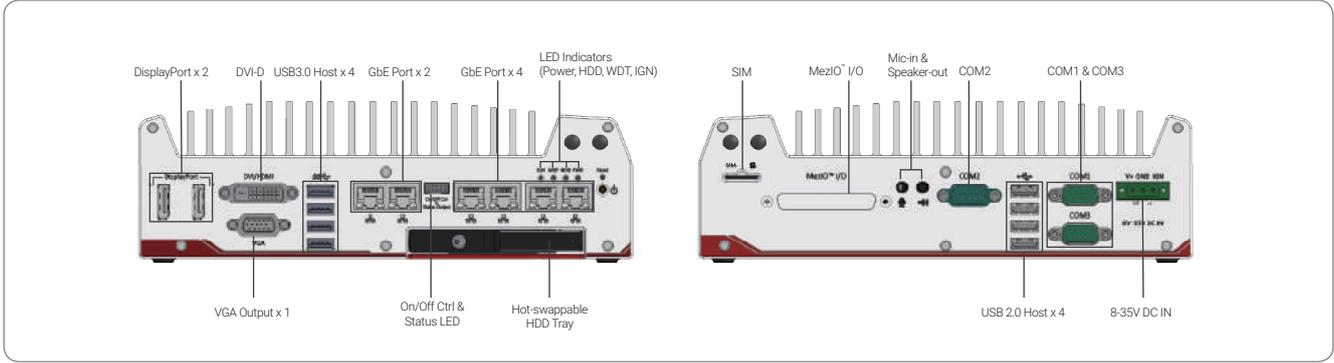· 77mm low-profile design

Introduction

Nuvo-5002LP/ 5006LP are low-profile systems in the Nuvo-5000 family. They feature a 77mm low-profile chassis and yet retain extraordinary -25°C to 70°C wide operating temperature capability. Neousys Nuvo-5002LP/ 5006LP supports LGA1151 socket-type CPUs so one can choose an Intel® 6th-Gen Core™ i7/i5/i3, from 35W to 65W TDP CPU according to application performance and operation needs.

Nuvo-5002LP/ 5006LP has plentiful I/Os such as GbE, USB3.0/ USB2.0, COM and VGA/ DVI/ DP. It also incorporates Neousys' MezIO™ interface for additional or application-oriented I/O expansion. By installing an optional MezIO™ module, Nuvo-5002LP/ 5006LP transforms from a typical embedded controller to a ruggedized application platform that may include up to 11x COM ports, 32 DIO channels, ignition power control or customized application-specific I/Os.
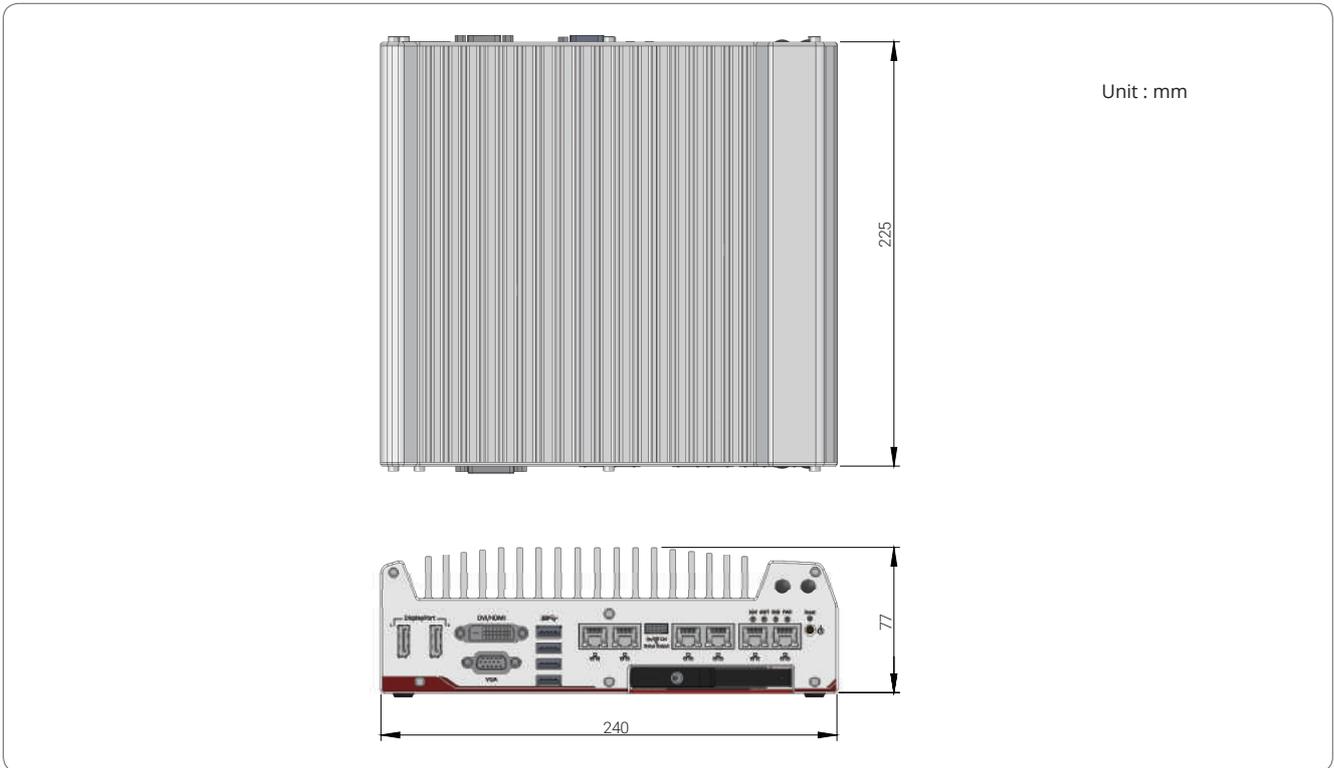
Specifications

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 32GB DDR4-2133 SDRAM (two SO-DIMM slots)
AMT	Supports AMT 11.0
TPM	Supports TPM 2.0

I/O Interface

Ethernet	2x Gigabit Ethernet ports by Intel® I219 and I210 (Nuvo-5002LP) 6x Gigabit Ethernet ports by Intel® I219 and 5x I210 (Nuvo-5006LP)
PoE+	Optional IEEE 802.3at PoE+ PSE for GbE Ports 3 ~ 6, 80W total power budget
USB	4x USB3.0 ports via native xHCI controller 4x USB2.0 ports
Video Port	1x stacked VGA + DVI-D connector 2x DisplayPort connectors, supporting 4K2K resolution (triple-independent display support)
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	1x hot-swappable HDD tray for 2.5" HDD/ SSD installation 1x 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

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 interface 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	240mm (W) x 225mm (D) x 77mm (H)
Weight	3.1kg (incl. CPU, memory and HDD)
Mounting	Wall-mounting (standard) or DIN-rail mounting (optional)

Environmental

Operating Temperature	-25°C ~ 70°C **	i7-6700TE (35W TDP) i5-6500TE (35W TDP) i3-6100TE (35W TDP) Pentium G4400TE (35W TDP)
	-25°C ~ 70°C */** (configured as 35W CPU mode) -25°C ~ 50°C */** (configured as 65W/ 51W CPU mode)	i7-6700 (65W/51W TDP) i5-6500 (65W/51W TDP) i3-6100 (65W/51W TDP)
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 EN 55022, EN 55024 & EN 55032	

* 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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NEOUSYS
TECHNOLOGY

Appearance

DisplayPort x 2 | DVI-D | USB3.0 Host x 4 | GbE Port x 2 | GbE Port x 4 | LED Indicators (Power, HDD, WDT, IGN) | SIM | MezIO™ I/O | Mic-in & Speaker-out | COM2 | COM1 & COM3

VGA Output x 1 | On/Off Ctrl & Status LED | Hot-swappable HDD Tray | USB 2.0 Host x 4 | 8-35V DC IN

Dimensions

Unit : mm

225

77

240

Ordering Information

Model No.	Product Description
Nuvo-5002LP	Intel® 6th-Gen Core™ low-profile fanless controller with 2x GbE and MezIO™ interface
Nuvo-5006LP	Intel® 6th-Gen Core™ low-profile fanless controller with 6x GbE and MezIO™ interface
Optional IEEE 802.3at PoE+ for GbE ports 3 ~ 6	

Optional Accessories

DINRAIL-O	DIN-rail mounting assembly for Nuvo-5000LP series
PA-120W-OW	120W AC/DC power adapter 20V/6A; 18AWG/120cm; cord end terminals for terminal block, operating temperature : -30 to 70 °C.
DmpbrNuvo5000_7000	Neousys' patented damping bracket assembly for Nuvo-7000E/DE/P

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 USB3.0 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