NEOUSYS TECHNOLOGY

Nuvo-4000 Series

Intel® 3rd-Gen Core™ i7/ i5 Fanless Box-PC with 4x PCIe/ PCI Expansion Slots

⚡ Key Features

· **Intel® 3rd-Gen i7 quad-core processor**
· **Four slots expansion capacity**
  - **x16 and x4 PCI Express slot**
  - **Up to four PCI slots**
· **164 mm x 225 mm x 180 mm small footprint**
· **Rugged, -25°C to 60°C fanless operation**
· **DVI+DVI+VGA triple independent display outputs**
· **One CFast socket and two SATA ports**
· **Optional smart-fan and on-board isolated DIO**

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Introduction

Nuvo-4000 is a high-performance fanless box-pc with a small footprint. It incorporates Intel® 3rd-Gen i7/ i5 processor to offer extraordinary computing power and fanless architecture to offer reliable operation in various environments.

The 4-slot expandability makes Nuvo-4000 very versatile. Its two Gen2 PCI Express slots deliver a total of 6 GB/s bandwidth for applications demanding high-speed data transmission. A dedicated 48W power budget is supplied to the x16 PCIe slot for powering a high-watt PCIe card (e.g. a graphics card). Nuvo-4000 also has PCI slots to accommodate up to 4 PCI cards for general industrial automation, test and measurement applications.

Nuvo-4000 features one of the smallest foot-prints for a fanless box-pc with four expansion slots. It has ample I/O interfaces for communication/ control purposes, and supports DVI+DVI+VGA triple independent display outputs for video/ image related applications. An optional smart fan is available for better operating reliability when high-watt cards are installed.

The combination of high performance, small footprint and versatility makes Nuvo-4000 not only an ideal application platform, but also a great replacement for traditional rack-mount or wall-mount IPC.

Specifications

System Core

Processor	Intel® Core™ i7-3610QE (2.3/3.3 GHz, 6 MB cache) Intel® Core™ i5-3610ME (2.7/3.3 GHz, 3 MB cache) Intel® Celeron® 1020E (2.2 GHz, 2 MB cache)
Chipset	Intel® HM76 Platform Controller Hub
Graphics	Integrated Intel® HD Graphics 4000 Controller (i7/ i5) Integrated Intel® HD Graphics Controller (Celeron®)
Memory	Up to 16 GB DDR3 1333/ 1600 MHz SDRAM (two SO-DIMM slots)

Front Panel I/O Interface

Ethernet	2x Gigabit Ethernet ports by Intel® I210

Video Port	1x DVI-I connector for VGA and DVI outputs,
	    supporting 1920x1080 resolution
	1x DVI-D connectors for DVI output,
	    supporting 1920x1080 resolution
	(Supporting triple independent display outputs)

Serial Port	2x software-programmable RS-232/ 422/ 485 (COM1 & COM2) 1x RS-232 (COM3)
USB	4x USB3.0 ports
Audio	1x Speaker-out

Internal I/O Interface

USB	2x USB 2.0 ports via 10-pin box-header
Isolated DIO	Optional 8-CH isolated DI + 8-CH isolated DO

Storage Interface

SATA HDD	2x Internal SATA ports for 2.5" HDD/ SSD installation
CFast	1x CFast socket

Expansion Bus

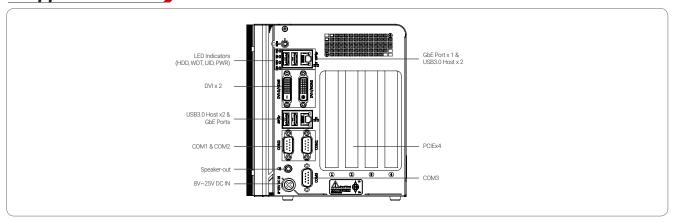|	
PCI	2x 33MHz/32-bit 5V PCI slots (Nuvo-4022) 4x 33MHz/32-bit 5V PCI slots (Nuvo-4040)
PCI Express (Nuvo-4022 only)	1x PCIe x16 slot @ 8-lanes PCIe signal with dedicated 48W power budget 1x PCIe x4 slot

Power Supply

DC Input	1x 3-pin pluggable terminal block for 8~25VDC DC input
Power Consumption	Intel® Core™ i7-3610QE : 66.12W (3.48A@19V) Intel® Core™ i5-3610ME : 43.13W (2.27A@19V)

Mechanical

Dimension	164 mm (W) x 225 mm (D) x 180 mm (H)
Weight	4.0 kg (incl. CPU, memory and HDD)
Mounting	Wall-mounting (Standard) or DIN-rail mounting (optional)

Environmental

Operating Temperature	-25°C ~ 60°C, 100% CPU loading */**
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

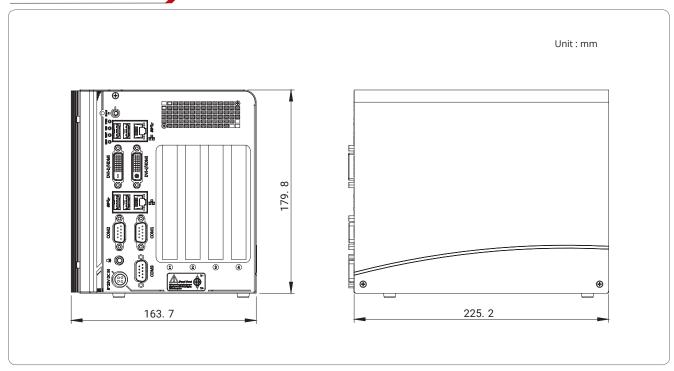*The 100% CPU loading is applied using Passmark® BurnInTest™ v7.0. For detail testing criteria, please contact Neousys Technology
** For sub-zero operating temperature, a wide temperature HDD drive or Solid State Disk (SSD) is required.

Appearance

LED Indicators
(HDD, WDT, UID, PWR)

DVI x 2

USB3.0 Host x2 &
GbE Ports

COM1 & COM2

Speaker-out

8V~25V DC IN

GbE Port x 1 &
USB3.0 Host x 2

PCIEx4

COM3

Dimensions

Unit : mm

179. 8

163. 7

225. 2

Ordering Information

Model No.	Product Description
Nuvo-4022	Intel® 3rd-Gen Core™ i fanless Box-PC with 2x PCIe and 2x PCI slots
Nuvo-4040	Intel® 3rd-Gen Core™ i fanless Box-PC with 4x PCI slots
Option of isolated DIO (8 DI + 8 DO) with panel/ cable kit	

Optional Accessories

DINRAIL-E	DIN-rail mounting assembly for Nuvo-4000 series
Fan-80	Fan assembly for Nuvo-4000 series, 80x80x15 mm
PA-120W	120W AC/DC power adapter 12V/8.5A (max. output 102W); 18AWG/120cm; DIN 4PIN connector, operating temperature : -30 to 70 °C.
PA-160W	160W AC/DC power adapter 20V/8A; 18AWGx4C/120cm, DIN 4PIN connector, power cord is not included.