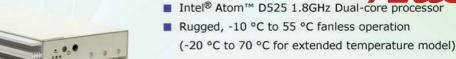
# **Nuvo-2000 Series**

## Intel® Atom™ D525 Fanless Shoe-Box IPC with 3x PCI/PCIe slots





- 1x PCI slot or 3x PCI/ PCIe slots
- Two SATA ports to accommodate two 2.5" HDD
- One RS-232/422/485 port and three RS-232 ports
- On-board isolated DIO option
- Wide range 8~25V DC input
- Mini-PCIe expansion with SIM support

## - Application -



#### Automatic Fare Collection

## - Introduction -

It is an Intel® Atom $^{\text{\tiny TM}}$  D525 IPC. It is, moreover, a reliable fanless IPC.

Nuvo-2000 accommodates three PCI/PCIe cards and two 2.5" hard drives in its shoe-box size. More than that, it provides versatile I/O interfaces such as COM ports, USB ports, Gigabit Ethernet port, parallel port and mini-PCIe port, not to mention that the isolated DIO channels can be integrated optionally into this compact box.

Leveraging Intel<sup>®</sup> Atom<sup>™</sup> D525 1.8GHz dual-core processor, Nuvo-2000 delivers adequate computing performance for most Industrial applications. We also give Nuvo-2000 ingenious design mechanically and electronically so it can have a reliable, fanless operation in the temperature range of -20 to 70°C.

Nuvo-2000 is designed for general-purpose usage. Its compact size, PCI/PCIe slots and simple yet useful I/O functions fit most applications where wall-mount IPC is currently deployed. And, what is more, the fanless design of Nuvo-2000 gives you much more reliability than an ordinary IPC in all kinds of environments.

## - Product Highlights -

### Adequate Performance

Nuvo-2000 utilizes the latest Atom D525 processor. It is a 2-cores/4-threads CPU works with DDR3-800 memory. According to benchmarking result, Atom D525 has better performance than previous Pentium M CPU and is very close to entry-level Core 2 Duo CPU. This gives Nuvo-2000 adequate computing power for most industrial control applications.



\* According to CPU Benchmark by PassMark® (http://www.passmark.com)

### Small & Smart Chassis Design



Nuvo-2000 has an ingenious mechanical design which gives consideration to small dimension, superior heat dissipation, flexible wall-mounting, and intuitive pattern of use. Like handling a traditional wall-mount IPC, you can remove the top cover and install add-on cards by loosing few screws. And its dual SATA ports and dual HDD brackets provide an easy and flexible way to mount your hard drives.

#### 3x Expansion Slots for Add-on Cards

Nuvo-2000 accommodates up to 3 PCI/PCIe slots in its compact chassis. There are 3 configurations, one PCI slot, or Two PCI slots plus one x4 PCIe slot, or three PCI slots. With capacity of installing multiple add-on cards, you could expand a much wider range of applications with Nuvo-2000.

Model	PCI	x4 PCle
Nuvo-2010	1	0
Nuvo-2021	2	1
Nuvo-2030	3	0



#### Rich I/O Functions

We integrate rich I/O functions, which are useful for industrial applications, into Nuvo-2000. In addition to general computer I/O on the front panel, there are more inside. If necessary, you can have two additional COM ports and one parallel port using a flat cable connection. Or you can have the option of isolated DIO (12DI+12DO) with another flat cable connection.



# - Nuvo 2000 Series Specification -

System Core	I I I I A I THE DESCRIPTION IN I	
Processor	Intel <sup>®</sup> Atom™ D525 1.8GHz dual-core processor	
Chipset	Intel® ICH8-M I/O Control Hub	
Graphics	Integrated Intel® GMA 3150 graphics	
Memory	1x 204-pin SO-DIMM socket, up to 4GB DDR3 800MHz SDRAM	
Front-panel I/O	Interface	
Ethernet	1x Intel® 82574L Gigabit Ethernet port	
Video Port	1x DB-15 connector for analog RGB, supporting 2048x1563 resolution	
Serial Port	1x software-programmable RS-232/422/485 (CON 1x RS-232 (COM2)	
USB	4x USB 2.0 ports	
KB/MS	1x 6-pin Mini-Din for PS/2 keyboard and mouse	
Audio	1x Mic-in and 1x Speaker-out	
Internal I/O Inter	face	
Serial Port	2x RS-232 (COM3 & COM4)	
Parallel Port	1x Parallel port	
Mini-PCle	1x mini PCI Express slot with SIM socket	
Isolated DIO	12-CH isolated DI + 12-CH isolated DO (Optional)	
Storage Interface	9	
SATA HDD	2x Internal SATA ports for 2.5" HDD/SSD installation	
CompactFlash	1x Type I & II CF socket	

Expansion Bus			
PCI	3x PCI slots (Nuvo-2030) 2x PCI slots (Nuvo-2021) 1x PCI slot (Nuvo-2010)		
PCI Express	1x PCI Express x4 slot (Nuvo-2021 only)		
Power Supply			
DC Input	Built-in 8~25 VDC DC input		
Input Connector	1x 2-pin pluggable terminal block for DC input 1x DC jack (ø2.5) for AC/DC adapter input		
Mechanical			
Dimension	141 mm (W) x 157mm (H) x 226 mm (D)		
Weight	2.9 kg (including one 2.5" HDD and DDR3 SODIMM)		
Mounting	Wall-mount by mounting bracket		
Environmental			
Operating Temperature	Standard model: -10°C~55°C, 100% CPU loading */** Extended temperature model: -20°C~70°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, w/o add-on card, according to IEC60068-2-64)		
Shcok	Operating, 50 Grms, Half-sine 11 ms Duration (w/ SSD, w/o add-on card, according to IEC60068-2-27)		
EMC	CE/FCC Class A, according to EN 55022 & EN 55024		

<sup>\*</sup> The CPU loading is applied using Intel® Thermal Analysis Tool. For detail testing criteria, please contact Neousys Technology.

# - Ordering Information -

Nuvo-2021

Intel® Atom™ D525 fanless IPC with two PCI slots and one PCI Express x4 slot

Nuvo-2030

Intel® Atom™ D525 fanless IPC with three PCI slots

Nuvo-2010

Intel® Atom™ D525 fanless IPC with one PCI slot

Nuvo-2021W

Intel<sup>®</sup> Atom™ D525 extended temperature fanless IPC with two PCI slots and one PCI Express x4 slot

■ Nuvo-2030W

Intel<sup>®</sup> Atom™ D525 extended temperature fanless IPC with three PCI slots

Nuvo-2021-DIO/ Nuvo-2030-DIO/ Nuvo-2010-DIO

Option of isolated digital input/output (12DI + 12DO) with panel/cable kit

- Panel/cable kit for 2xCOM ports
- Panel/cable kit for 1x COM port + 1x LPT port
- 60W AC/DC power adapter with 12V, 5A DC output

## - Package List -

- 1x Nuvo-2000 Unit
- 1x Accessory Box, including
  - 1x PS/2 Y-cable for KB/MS connection
  - 1x SATA cable for 2<sup>nd</sup> HDD installation
  - 1x HDD bracket
  - 1x Driver CD
  - · 2x Wall-mount brackets

<sup>\*\*</sup>For sub-zero operating temperature, a wide temperature HDD drive or Solid State Disk (SSD) is required.