

Nuvo-3120 Series

Intel® 3rd-Gen Core™ i7/i5 Fanless Controller with Compact Size and Configurable CPU Power Mode



Features

- 212 mm x 165 mm x 62 mm very compact size
- Intel® 3rd-Gen i7/i5 PGA-type processor
- User-configurable CPU power mode for adaptation to various environments
- Dual GbE ports and four USB3 ports
- DVI/VGA + DisplayPort triple independent display outputs
- Built-in isolated digital I/O with change-of-state (COS) interrupt
- 8 ~ 35V wide-range DC input

Introduction

Introducing the most compact fanless controller supporting PGA-type 3rd-Gen i7/i5 processor!

Neosys' Nuvo-3120 features a very compact 212 mm x 165 mm x 62mm footprint. While other compact fanless controllers adopt low-voltage, BGA-type i7 CPU (17W), Nuvo-3120 supports standard voltage, PGA-type i7/i5 CPU (45W/35W) for flexible CPU selection. A unique feature, configurable CPU power mode, is developed to balance the trade-off between heat-sink size and operating temperature. According to ambient condition, you can configure Nuvo-3120 to operate in maximal performance, reduced performance or extended temperature mode.

Plenty of I/O functions, such as Gigabit Ethernet, USB 3.0, SATA, COM ports, mini-PCIe and isolation DIO are provided in Nuvo-3120's compact chassis. It also supports triple independent display outputs to benefit image-related applications. Compact yet powerful, Nuvo-3120 meets all your requirements for an embedded platform.

Product Highlights

PGA CPU Support with Configurable CPU Power Mode

Nuvo-3120 supports PGA-type CPU to offer greater flexibility of CPU selection. PGA-type processors are with higher CPU power, and therefore introduce higher performance and more heat. To adapt Nuvo-3120 to various environments, we develop a unique function, configurable CPU power mode, to alter CPU power per user's preference.

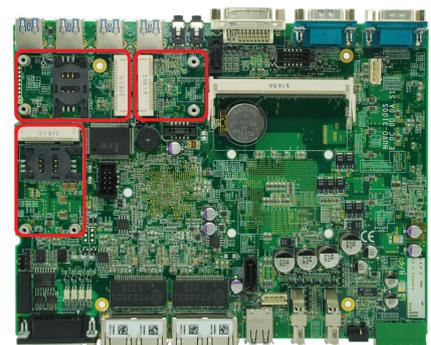
By selecting maximal performance, reduced performance or extended temperature mode, you can get adequate performance/temperature preference according to deployment environment. You can refer to the table of CPU benchmark v.s. operating temperature in different CPU power modes. Compared to other embedded controllers using i7-3517UE CPU, Nuvo-3120 offers better flexibility and more computing power without sacrificing thermal reliability.

CPU	Nuvo-3120 with i7-3610QE (PGA)	Nuvo-3120 with i5-3610ME (PGA)	i7-3517UE (BGA)
Operating Temp.			
Maximal Performance	7407 / 50°C	4388 / 60°C	3449 / 70°C
Reduced Performance	5873 / 60°C	3896 / 70°C	
Extended Temperature	3471 / 70°C	3896 / 70°C	

* The CPU benchmark score is measured using Passmark® PerformanceTest™ (<http://www.passmark.com>).

Rich I/O Functions in Compact Chassis

Nuvo-3120 integrates all general I/O functions in its compact chassis. Not only Gigabit Ethernet, USB3/USB2, SATA and COM ports are included, Nuvo-3120 further supports triple independent display outputs via its DVI/VGA + DP connectors. Inside Nuvo-3120, there are three mini-PCIe/mSATA slots with two SIM sockets for WIFI, 3G/4G, GPS and storage expandability.



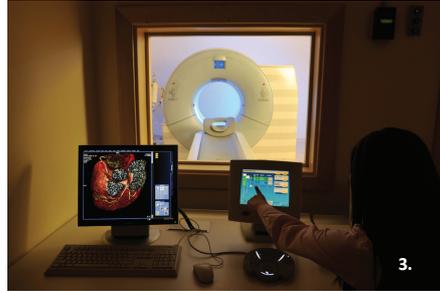
Applications



1.



2.



3.



4.

1. Fleet Management System
2. Robot Vision
3. Medical Imaging
4. Factory Plant Automation

Specifications

System Core		Power Supply & Ignition Control				
Processor	Supports the following CPU <ul style="list-style-type: none"> · 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) 	DC Input	8~35V DC input via 3-pin pluggable terminal block			
Chipset	Intel® HM76 Platform Controller Hub	Ignition Control	Ignition power control with user-selectable on/off delay (Optional)			
Graphics	Integrated Intel® HD Graphics 4000 Controller	Mechanical				
Memory	1x 204-pin SO-DIMM sockets, up to 8 GB DDR3 1333/1600 MHz SDRAM	Dimension	212 mm (W) x 165 mm (D) x 62 mm (H)			
I/O Interface		Weight	2.7 Kg (including one 2.5" HDD and DDR3 SODIMM)			
Ethernet	1x Gigabit Ethernet port by Intel® 82579LM, supporting Wake-on-LAN 1x Gigabit Ethernet ports by Intel® i210	Mounting	Wall-mounting (Standard) or DIN-Rail mounting (optional)			
Video Port	1x DVI-I connector for VGA/DVI output, supporting 2048x1536 (VGA) or 1920x1080 (DVI) resolution 2x DisplayPort, supporting 2560x1600 resolution	Environmental				
USB	4x USB 3.0 ports and 2x USB 2.0 ports	Operating Temperature	Maximal Performance	i7-3610QE, 100% CPU loading*	i5-3610ME, 100% CPU loading*	Celeron 1020E, 100% CPU loading*
Serial Port	2x software-programmable RS-232/422/485 (COM1 & COM2)	Reduced Performance	-25°C ~ 50°C**	-25°C ~ 60°C**	-25°C ~ 70°C**	-25°C ~ 70°C**
Isolated DIO	4x isolated DI with COS interrupt and 4x isolated DO	Extended Temperature	-25°C ~ 70°C**	-25°C ~ 70°C**	-25°C ~ 70°C**	-25°C ~ 70°C**
Audio	1x mic-in and 1x speaker-out	Storage Temperature	-40°C ~ 85°C			
Storage Interface		Humidity	10%~90% , non-condensing			
SATA HDD	1x Internal SATA port for 2.5" HDD/SSD	Vibration	Operating, 5 Grms, 5-500 Hz, 3 Axes (w/ SSD, according to IEC60068-2-64)			
mSATA	1x full-size mSATA (SATA/USB/W_DISABLE#) with USIM socket	Shock	Operating, 50 Grms, Half-sine 11 ms Duration (w/ SSD, according to IEC60068-2-27)			
Expansion Bus		Certification	CE/FCC Class A, according to EN 55022 & EN 55024			
Mini PCI-E	1x full-size mini PCI Express socket with USIM socket 1x half-size mini PCI Express socket	* The 100% CPU loading is applied using Passmark® BurnInTest™ v7.0. For detail testing criteria, please contact Neosys Technology ** For sub-zero operating temperature, a wide temperature HDD drive or Solid State Disk (SSD) is required.				

www.neosys-tech.com

Order Information

Nuvo-3120-I7QC

Intel® Core™ i7-3610QE fanless controller with compact size and configurable CPU power mode

Nuvo-3120-I5DC

Intel® Core™ i5-3610ME fanless controller with compact size and configurable CPU power mode

Nuvo-3120-C1020

Intel® Celeron™ 1020E fanless controller with compact size and configurable CPU power mode

Option of ignition power control

Option of DIN-Rail mounting kit

120W AC/DC power adapter

