Established in 2010, Neousys Technology designs and manufactures rugged embedded modules and systems with core expertise ranging from embedded computing to data acquisition and processing. Our dedication to innovate and integrate practical application-oriented functions set us apart from the rest and our products are ideal solutions for automation, machine vision, transportation, GPU computing, surveillance and video analytics.

Neousys Technology application-oriented systems thrive in the following field:
- Wide-temperature fanless computing
- Rugged embedded fanless computing
- Machine vision platforms
- In-vehicle fanless PC
- Ultra compact fanless controller
- Surveillance/ video analytics computing
- GPU computing
**Machine Vision**

- **Nuvo-7000E/P/DE** ........................................ P. 18
- **Nuvo-7000LP** ........................................... P. 21
- **Nuvo-5000E/P** .......................................... P. 23
- **Nuvo-5000LP** .......................................... P. 25
- **Nuvo-5026E** ........................................... P. 27
- **Nuvo-2500E/P** .......................................... P. 31
- **Nuvo-6000** ............................................... P. 33
- **Nuvo-2400** ............................................... P. 35
- **PB-9250J** .................................................. P. 39
- **PB-2500J** .................................................. P. 40

**Expansion Slots**

- **POC-500** ................................................ P. 41
- **POC-300** ................................................ P. 43
- **POC-200** ................................................ P. 45
- **POC-120** ................................................ P. 47
- **ETHY-100-2008S** .................................... P. 49
- **IGT-30** .................................................. P. 51
- **IGT-20** .................................................. P. 53
- **Nuvis-5306RT** ......................................... P. 57
- **PCle-PoE550X** ........................................ P. 59
- **PCle-PoE334LP** ........................................ P. 60
- **PCle-PoE354at/352at** ................................ P. 61
- **PCle-USB380/340** ................................... P. 62
- **Nuvo-5608VR** .......................................... P. 71
- **Nuvo-EDX-104** ......................................... P. 73
- **Nuvo-8208GC** ......................................... P. 83
- **Nuvo-7164GC** ......................................... P. 85
- **Nuvo-7160GC** ......................................... P. 87
- **Nuvo-5095GC** ......................................... P. 89
- **Nuvo-6108GC** ......................................... P. 91
- **Nuvo-6108GC-IGN** .................................. P. 93

**Interface and Low-profile Chassis**

- **Intel® 8th Gen Core™ i7/i5/i3 Fanless Controller with 6x GbE Ports, Patented Cassette and MezIO™ Interface**
- **Intel® 6th Gen Core™ i7/i5/i3 Fanless Controller with 6x GbE Ports, MezIO™ Interface and Low-profile Chassis**
- **Intel® 6th Gen Core™ i7/i5/i3 Fanless Controller with 3x GbE, Expansion Cassette and MezIO™ Interface**
- **Intel® 6th Gen Core™ i7/i5/i3 Fanless Controller with 6x GbE, MezIO™ Interface and Low-profile Chassis**
- **Intel® 6th Gen Core™ i7/i5/i3 Compact Fanless Embedded Controller with 3x GbE**
- **Intel® Celeron® Bay Trail Fanless Computer with Expansion Cassette**
- **Intel® Atom™ Bay Trail Fanless Computer with Expansion Cassette**
- **Intel® Atom™ Bay Trail Fanless Computer with 6 x GbE and Triple PCI/Pcie slots**

**8th-Gen Core™ Processor**

- **Intel® Xeon® E3 v5 and 6th-Gen Core™ Processor**
- **Intel® Xeon® E3 v5 or 6th-Gen Core™ Processor**

**6th-Gen Core™ Processor**

- **Intel® Pentium® Apollo Lake**
- **Intel® Atom™ E3950**
- **Intel® Atom™ E3950 Ultra-compact In-vehicle Controller with 4x 802.3at PoE+ Ports, Dual 2.5" Hard Drives with RAID Support**
- **Intel® Atom™ E3950 Ultra-compact In-vehicle Controller with Vision-Specific I/O, Real-time Control and GPU Computing**

**Industrial-Grade Intelligent Supercapacitor-based Power Backup Module**

- **PB-9250J** .............................................. P. 39
- **PB-2500J** .............................................. P. 40
- **Industrial Grade Intelligent Supercapacitor-based Uninterruptible Power Backup Module**
- **Industrial Grade Intelligent Supercapacitor-based Uninterruptible Power Backup Module with 4x PoE+**
- **Industrial Grade Intelligent Supercapacitor-based Uninterruptible Power Backup Module with IEEE 802.3at PoE+ Capability**
- **Industrial Grade Intelligent Supercapacitor-based Uninterruptible Power Backup Module with 1x 3.5" HDD Accommodation Supporting RAID 0/1"
**Product Highlight**

**PCle/PCI Expansion Cassette**

(R.O.C Patent No. M456527)

Neousys’ patented Cassette technology innovates a brilliant way for accommodating add-on cards. The modularized design is easy to install or replace and it offers passive cooling to the add-on card for reliable operation. Customers can install any PCI or PCIe card in the Cassette, or choose Neousys’ selection of standard cassette modules with preinstalled heat-spreader for PoE+, USB3.0 or independent graphics card.

**Concept of Cassette**

As the dedicated heat-spreader makes contact with components and the heat is conducted to the surface of the Cassette enclosure, it is able to sustain a stable internal thermal condition.

- Two enclosures, one dedicated for the system and the other dedicated for add-on cards, separate compartments to minimize electrical and thermal interference
- Reliable mechanical/electrical connection between system and Cassette

Neousys’ exclusive mechanical design and thermal pad efficiently dissipate heat from CPU and other components. It allows Neousys products to operate under 100% CPU loading in a wide temperature environment ranging from -40°C to 70°C.

**Wide-Temperature Fanless Embedded System**

![Image showing wide-temperature fanless embedded system]

2-16 IEEE 802.3at PoE+ Ports

Supplying up to 25.5W of power per port, Neousys provides 2-16 IEEE 802.3at PoE+ ports for connecting PoE powered device (PD) such as IP cameras, wireless access points or related applications like machine vision, in-vehicle and surveillance. Neousys provide turnkey platforms that offer cost reductions when deploying embedded vision systems.

<table>
<thead>
<tr>
<th>Ports Available</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PoE+</td>
<td>IEEE 802.3at</td>
</tr>
<tr>
<td>USB3.0</td>
<td></td>
</tr>
<tr>
<td>Independent</td>
<td></td>
</tr>
</tbody>
</table>

**DTIO and NuMCU**

(R.O.C Patent No. I526834)

Neousys Deterministic Trigger I/O (DTIO) and NuMCU are a MCU-based architecture technology that provides a deterministic timing correlation between input and output signals. It utilizes a standalone microprocessor with highly optimized algorithm to collaborate with platform and DIO circuit. DTIO and NuMCU redefine machine vision systems that require accurate interaction between light, camera, actuator and sensor devices.

```
Hardware architecture of DTIO
```

![Image showing hardware architecture of DTIO]

Innovative approach to implement your own algorithm and create your own unique solution

*Available on Nuvis-530RT


*Available on all products but temperature range may vary
**Product Highlight**

**MezIO™ Module**

MezIO™ is the interface designed for incorporating application-oriented I/O functions into an embedded system. It offers computer signals, power rails and control signals via a high-speed connector. MezIO™ module benefits from its 3-point mounted mezzanine structure for mechanical stability. Neousys MezIO™ modules offer a variety of I/Os such as RS-232/422/485, isolated DIO, CAN bus, ignition power control and DTIO. Users can also leverage signals/ power on MezIO™ interface to create a module with specific domain know-how. The Neousys MezIO™ module presents a cost-effective way to build a tailor-made embedded system for your application.

**Concept of MezIO™ Interface**

Neousys MezIO™ (interchangeable mezzanine I/O board) is the interface module designed for incorporating application-oriented I/O functions into an embedded system.

**High-speed Board-to-board Connector**

MezIO™ module offers various signals and power rails via a high-speed connector for high-density and high-power applications.

*Available on Nuvo-7000E/P/D, Nuvo-7000LP, Nuvo-7160GC, Nuvo-7164GC, Nuvo-5000E/P, Nuvo-5026E, Nuvo-5000LP, Nuvo-5095GC, POC-500, POC-300, POC-120MZ

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**Product Selection Guide**

**Industrial-grade GPU Computing Platform**

Featuring patented Cassette technology and an innovative thermal ventilation design, Neousys GPU computing platforms support 75W~250W NVIDIA® GPU. They are applicable to CUDA computing, autopilot, deep learning, virtual reality and also allow sustained full load operation under -25°C to 60°C wide temperature conditions.

- Designed for 75W/ 250W NVIDIA® GPU
- Ideal for open autonomous driving platform
- A new era for Machine Vision applications
  - GPU-accelerated Machine Vision library
  - Deep-learning Machine Vision software

*Available on Nuvo-7164GC, Nuvo-7160GC, Nuvo-6108GC, Nuvo-7108GC-IGN, Nuvo-5095GC, Nuvis-5306RT and Nuvo-8208GC
### Environmental

**Power Supply**
- Nuvo-7000E/P: 8-35V DC
- Nuvo-7000LP: 8-35V DC
- Nuvo-5026E: 8-35V DC
- Nuvo-5501: 8-35V DC

**Expansion Bus**
- Mini PCI-E
- PCI/PCI Express
- M.2

**Storage Interface**
- SATA HDD
- CFast / MicroSD

**Memory**
- Optional via MezIO module

**Digital I/O**
- 1x RS-232/422/485

**USB Port**
- USB 2.0: 2x
- USB 3.0: 2x

**Video Port**
- 1x DisplayPort
- 1x DVI-D
- 1x VGA

**Thermal Analysis Tool**
- For detailed testing criteria, please contact Neousys Technology.
- For sub-zero operating temperature, a wide temperature HDD drive or Solid State Disk (SSD) is required.

### Dimensions

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Nuvo-7000E/ P/ DE</th>
<th>Nuvo-7000LP</th>
<th>Nuvo-5026E</th>
<th>Nuvo-5501</th>
</tr>
</thead>
<tbody>
<tr>
<td>(W x D x H)</td>
<td>240 x 225 x 79 mm</td>
<td>240 x 225 x 79 mm</td>
<td>240 x 225 x 111 mm</td>
<td>221 x 173 x 76.2 mm</td>
</tr>
</tbody>
</table>

### Weights

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Nuvo-7000E/ P/ DE</th>
<th>Nuvo-7000LP</th>
<th>Nuvo-5026E</th>
<th>Nuvo-5501</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>3.1 kg</td>
<td>3.7 kg</td>
<td>3.7 kg</td>
<td>2.8 kg</td>
</tr>
</tbody>
</table>

### Chassis Construction
- Aluminum alloy with heavy duty metal.

### Processor
- Intel® Celeron®
- Intel® Pentium®
- Intel® Core™ i3
- Intel® Core™ i5
- Intel® Core™ i7

### Chipset
- Intel® Q77
- Intel® Q77

### Graphics
- Intel® HD Graphics 600
- Intel® HD Graphics 600
- Intel® HD Graphics S3D/ S10
- Intel® HD Graphics S3D/ S10

### Memory
- Optional via MezIO module

### Ethernet
- 2x Gigabit Ethernet (Port 3~6, IEEE 802.3at, 25.5W)
- 1x Gigabit Ethernet

### USB Port
- 2x USB 3.0
- 2x USB 2.0

### DC Input
- 240 VAC (10%~15%)
- 220 VAC (10%~15%)

### Operating Temperature
- Nuvo-7000E/P: -25°C ~ 70°C**
- Nuvo-5026E: -25°C ~ 70°C**

### Certification
- CE/ FCC
- CE/ FCC

### Released Date
- 2018/6/15
- 2018/6/15
- 2017/7/21

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**Note:** All specifications and photos are subject to change without prior notice.
### Model Name: Nuvo-2400
- **Dimensions (W x D x H):** 139 x 225 x 160 mm
- **Weight:** 2.2 kg
- **Chassis Construction:** Aluminum alloy with heavy duty metal
- **Processor:** Intel® Celeron® J1900 quad-core
- **Chipset:** Intel® HD Graphics
- **Memory:** 1x DDR3L 1333 MHz (Port 1~2, IEEE 802.3at, 25.5W)
- **Graphics:** Intel® HD Graphics
- **Power Supply:** 1x 65W/51W CPU
- **Ignition Control:** Optional via MezIO
- **Operating Temperature:** -25°C ~ 70°C

### Model Name: POC-500
- **Dimensions (W x D x H):** 69.1 x 116 x 176 mm (POC-515)
- **Weight:** 1.2 kg (POC-515)
- **Chassis Construction:** Aluminum alloy with heavy duty metal
- **Processor:** Intel® Atom® x5-Z8350 quad-core
- **Chipset:** Intel® HD Graphics 505
- **Memory:** Up to 2GB DDR4-2400 (POC-515)
- **Graphics:** Intel® HD Graphics 505
- **Power Supply:** 1x 65W/51W CPU
- **Ignition Control:** Optional via MezIO
- **Operating Temperature:** -25°C ~ 70°C

### Model Name: POC-300
- **Dimensions (W x D x H):** 68.1 x 116 x 176 mm (POC-515)
- **Weight:** 0.56 kg (POC-315)
- **Chassis Construction:** Aluminum alloy with heavy duty metal
- **Processor:** Intel® Atom® x5-Z8350 quad-core
- **Chipset:** Intel® HD Graphics 505
- **Memory:** Up to 2GB DDR4-2400 (POC-515)
- **Graphics:** Intel® HD Graphics 505
- **Power Supply:** 1x 65W/51W CPU
- **Ignition Control:** Optional via MezIO
- **Operating Temperature:** -25°C ~ 70°C

### Model Name: POC-200
- **Dimensions (W x D x H):** 68 x 116 x 176 mm (POC-515)
- **Weight:** 1.1 kg
- **Chassis Construction:** Aluminum alloy with heavy duty metal
- **Processor:** Intel® Atom® X7-Z8700 quad-core
- **Chipset:** Intel® HD Graphics 505
- **Memory:** Up to 2GB DDR4-2400 (POC-515)
- **Graphics:** Intel® HD Graphics 505
- **Power Supply:** 1x 65W/51W CPU
- **Ignition Control:** Optional via MezIO
- **Operating Temperature:** -25°C ~ 70°C

### Certification
- CE/UL

### Operating Data
- 2015/11/11
- 0.41 ~ 4.21
- 2015/11/11
- 2015/11/11

### Page Number
- P. 41 ~ 42
- P. 41 ~ 44
- P. 41 ~ 44
- P. 41 ~ 44

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### Model Name: POC-120
- **Dimensions (W x D x H):** 105 x 149 x 34 mm (POC-121)
- **Weight:** 0.9 kg (POC-121)
- **Chassis Construction:** Aluminum alloy with heavy duty metal
- **Processor:** Intel® Atom® x5-Z8350 dual-core
- **Chipset:** Intel® HD Graphics 505
- **Memory:** Up to 2GB DDR3L-1333
- **Graphics:** Intel® HD Graphics 505
- **Power Supply:** 1x 65W/51W CPU
- **Ignition Control:** Optional via MezIO
- **Operating Temperature:** -25°C ~ 70°C

### Certification
- CE/UL

### Operating Data
- 2015/11/11
- 0.5 kg
- 0.4 kg
- 4.5 kg
- 0.5 kg
- 4.5 kg
- 0.5 kg
- 4.5 kg
- 0.5 kg
- 4.5 kg

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### Rugged Embedded | Machine Vision | In-Vehicle Computing | Surveillance & Video Analytics | GPU Computing

### Model Name: Nuvo-3508RT
- **Dimensions (W x D x H):** 240 x 225 x 111 mm
- **Weight:** 6.5 kg
- **Chassis Construction:** Aluminum alloy with heavy duty metal
- **Processor:** Intel® Atom® x5-Z8350 dual-core
- **Chipset:** Intel® HD Graphics 505
- **Memory:** Up to 2GB DDR3L-1333
- **Graphics:** Intel® HD Graphics 505
- **Power Supply:** 1x 65W/51W CPU
- **Ignition Control:** Optional via MezIO
- **Operating Temperature:** -25°C ~ 50°C

### Certification
- CE/UL

### Operating Data
- 2015/11/11
- 800 W
- 120 W
- 120 W
- 120 W
- 120 W
- 120 W
- 120 W
- 120 W
- 120 W

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*Images: Camera interface card, Independent NVIDIA GPU (75W),...
<table>
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<th>Model Name</th>
<th>Nuvo-7164GC</th>
<th>Nuvo-7160GC</th>
<th>Nuvo-5095GC</th>
<th>Nuvo-8208GC</th>
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<tr>
<td><strong>Dimensions (W x D x H)</strong></td>
<td>260 x 225 x 111 mm</td>
<td>240 x 225 x 111 mm</td>
<td>240 x 225 x 111 mm</td>
<td>235 x 360 x 186 mm</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>4.5 kg</td>
<td>4.5 kg</td>
<td>4.5 kg</td>
<td>8.6 kg</td>
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<td><strong>Chassis Construction</strong></td>
<td>Aluminum alloy with heavy duty metal</td>
<td>Aluminum alloy with heavy duty metal</td>
<td>Aluminum alloy with heavy duty metal</td>
<td>Aluminum alloy with heavy duty metal</td>
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<tr>
<td><strong>Processor</strong></td>
<td>Intel® Core™ i5-8500T or i5-8500T or Intel® Core™ i3-8100T</td>
<td>Intel® Core™ i7-8700 or i7-8700T or Intel® Core™ i7-8700K</td>
<td>Intel® Core™ i5-8250U or i5-8250U or Intel® Core™ i5-8250U</td>
<td>Intel® Core™ i5-8500 or i5-8500T or Intel® Core™ i5-8500T</td>
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<tr>
<td><strong>Chipset</strong></td>
<td>Intel® Q770</td>
<td>Intel® Q770</td>
<td>Intel® Q770</td>
<td>Intel® Q770</td>
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<tr>
<td><strong>Memory</strong></td>
<td>Up to 64 GB DDR4-2666/2400</td>
<td>Up to 32 GB DDR4-2133</td>
<td>Up to 128 GB DDR4-2133</td>
<td>Up to 512 GB DDR4-2133</td>
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<tr>
<td><strong>Weight</strong></td>
<td>4.5 kg</td>
<td>4.5 kg</td>
<td>4.5 kg</td>
<td>8.6 kg</td>
</tr>
<tr>
<td><strong>Dimensions (W x D x H)</strong></td>
<td>240 x 225 x 111 mm</td>
<td>240 x 225 x 111 mm</td>
<td>240 x 225 x 111 mm</td>
<td>235 x 360 x 186 mm</td>
</tr>
<tr>
<td><strong>Chassis Construction</strong></td>
<td>Aluminum alloy with heavy duty metal</td>
<td>Aluminum alloy with heavy duty metal</td>
<td>Aluminum alloy with heavy duty metal</td>
<td>Aluminum alloy with heavy duty metal</td>
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<tr>
<td><strong>Processor</strong></td>
<td>Intel® Core™ i5-8500 or i5-8500T</td>
<td>Intel® Core™ i7-8700 or i7-8700T or Intel® Core™ i7-8700K</td>
<td>Intel® Core™ i5-8250U or i5-8250U or Intel® Core™ i5-8250U</td>
<td>Intel® Core™ i5-8500 or i5-8500T or Intel® Core™ i5-8500T</td>
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<td><strong>Chipset</strong></td>
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<td>Intel® Q770</td>
<td>Intel® Q770</td>
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<tr>
<td><strong>Graphics</strong></td>
<td>NVIDIA GeForce GTX 1060</td>
<td>NVIDIA GeForce GTX 1060</td>
<td>NVIDIA GeForce GTX 1060</td>
<td>NVIDIA GeForce GTX 1060</td>
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<tr>
<td><strong>Memory</strong></td>
<td>Up to 64 GB DDR4-2666/2400</td>
<td>Up to 32 GB DDR4-2133</td>
<td>Up to 128 GB DDR4-2133</td>
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<td>240 x 225 x 111 mm</td>
<td>240 x 225 x 111 mm</td>
<td>235 x 360 x 186 mm</td>
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<tr>
<td><strong>Chassis Construction</strong></td>
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<td>Aluminum alloy with heavy duty metal</td>
<td>Aluminum alloy with heavy duty metal</td>
<td>Aluminum alloy with heavy duty metal</td>
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<tr>
<td><strong>Processor</strong></td>
<td>Intel® Core™ i5-8500 or i5-8500T</td>
<td>Intel® Core™ i7-8700 or i7-8700T or Intel® Core™ i7-8700K</td>
<td>Intel® Core™ i5-8250U or i5-8250U or Intel® Core™ i5-8250U</td>
<td>Intel® Core™ i5-8500 or i5-8500T or Intel® Core™ i5-8500T</td>
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<td>Intel® Q770</td>
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<tr>
<td><strong>Graphics</strong></td>
<td>NVIDIA GeForce GTX 1060</td>
<td>NVIDIA GeForce GTX 1060</td>
<td>NVIDIA GeForce GTX 1060</td>
<td>NVIDIA GeForce GTX 1060</td>
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<tr>
<td><strong>Memory</strong></td>
<td>Up to 64 GB DDR4-2666/2400</td>
<td>Up to 32 GB DDR4-2133</td>
<td>Up to 128 GB DDR4-2133</td>
<td>Up to 512 GB DDR4-2133</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>4.5 kg</td>
<td>4.5 kg</td>
<td>4.5 kg</td>
<td>8.6 kg</td>
</tr>
</tbody>
</table>

* Supports dual display video output

** All specifications are subject to change without prior notice. All specifications and photos are subject to change without prior notice.
## Selection Guide

### Neousys Intelligent Embedded Systems

#### Rugged Embedded
- Machine Vision
- In-Vehicle Computing
- Surveillance / Video Analytics
- GPU Computing

---

### Model Comparison

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Nuvo-5100VTC</th>
<th>Nuvo-2510VTC</th>
<th>Nuvo-3100VTC</th>
<th>Nuvo-5608VR</th>
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</thead>
<tbody>
<tr>
<td><strong>Dimensions</strong></td>
<td>240 x 225 x 79 mm</td>
<td>205 x 145 x 44 mm</td>
<td>212 x 165 x 62 mm</td>
<td>240 x 225 x 98 mm</td>
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<tr>
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<td><strong>Chassis Construction</strong></td>
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<td>Aluminum alloy with heavy duty metal</td>
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<tr>
<td><strong>Processor</strong></td>
<td>Intel® Core™ i7-6700TE</td>
<td>Intel® Core™ i5-6500TE</td>
<td>Intel® Core™ i3-6100TE</td>
<td>Intel® Celeron® 1020E</td>
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<td><strong>Chipset</strong></td>
<td>Intel® Q170</td>
<td>-</td>
<td>Intel® Q170</td>
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<td><strong>Memory</strong></td>
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<td>Up to 8GB DDR3L-1333</td>
<td>Up to 8GB DDR3-1600</td>
<td>Up to 32 GB DDR4-2133</td>
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<tr>
<td><strong>I/O Interface</strong></td>
<td>2x GbE by Intel® X719 and X710</td>
<td>2x GbE by Intel® X710</td>
<td>1x GbE by Intel® X710/82579LM</td>
<td>2x GbE by Intel® X710</td>
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<td><strong>Video Port</strong></td>
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<td>1x HDMI</td>
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<td><strong>Serial Port</strong></td>
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<td>1x Mic-in and speaker-out</td>
<td>1x Mic-in and speaker-out</td>
<td>1x Mic-in and speaker-out</td>
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<tr>
<td><strong>Digital I/O</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td><strong>SATA HDD</strong></td>
<td>1x 2.5''</td>
<td>1x 2.5''</td>
<td>1x 2.5''</td>
<td>1x 2.5''</td>
</tr>
<tr>
<td><strong>mSATA / uSATA</strong></td>
<td>1x mSATA</td>
<td>1x mSATA</td>
<td>1x mSATA</td>
<td>1x mSATA</td>
</tr>
<tr>
<td><strong>M.2</strong></td>
<td>-</td>
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<tr>
<td><strong>PCI/PCIe Express</strong></td>
<td>-</td>
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<tr>
<td><strong>DC Input</strong></td>
<td>8-35V DC</td>
<td>8-35V DC</td>
<td>8-35V DC</td>
<td>8-35V DC</td>
</tr>
<tr>
<td><strong>Ignition Control</strong></td>
<td>Built-in</td>
<td>Built-in</td>
<td>Built-in</td>
<td>Built-in</td>
</tr>
<tr>
<td><strong>Operating Temperature</strong></td>
<td>-40°C ~ 70°C **</td>
<td>-25°C ~ 70°C **</td>
<td>-25°C ~ 60°C **</td>
<td>-25°C ~ 70°C **</td>
</tr>
<tr>
<td><strong>Certification</strong></td>
<td>E-Mark, EN50155, CE / FCC</td>
<td>E-Mark, CE / FCC</td>
<td>E-Mark, EN50155, CE / FCC, ENSA45, CE / FCC</td>
<td>E-Mark, EN50155, CE / FCC, ENSA45, CE / FCC</td>
</tr>
</tbody>
</table>

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* Supports dual display video output
* 100% CPU loading is applied using Intel® Thermal Analysis Tool. 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.
* Depending on the HDD selected, users may encounter performance degradation in sequential disk write at low/high ambient temperature. No data integrity issue was observed in -10°C ~ 60°C operating temperature range.

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**Model Name**
- Nuvo-5100VTC
- Nuvo-2510VTC
- Nuvo-3100VTC
- Nuvo-5608VR

**Dimensions**
- 240 x 225 x 79 mm
- 205 x 145 x 44 mm
- 212 x 165 x 62 mm
- 240 x 225 x 98 mm

**Weight**
- 3.3 kg
- 1.9 kg
- 2.8 kg
- 3.5 kg

**Processor**
- Intel® Core™ i7-6700TE
- Intel® Core™ i5-6500TE
- Intel® Core™ i3-6100TE
- Intel® Celeron® 1020E

**Chipset**
- Intel® Q170
- -
- Intel® Q170
- Intel® Q170

**Memory**
- Up to 32 GB DDR4-2133
- Up to 8GB DDR3L-1333
- Up to 8GB DDR3-1600
- Up to 32 GB DDR4-2133

**I/O Interface**
- 2x GbE by Intel® X719 and X710
- 2x GbE by Intel® X710
- 1x GbE by Intel® X710/82579LM
- 2x GbE by Intel® X710

**Video Port**
- 1x VGA
- 1x HDMI
- 1x HDMI
- 1x HDMI

**Serial Port**
- 2x RS-232/422/485
- 2x RS-232
- 2x RS-232
- 2x RS-232/422/485

**USB 2.0**
- 2
- 4
- 4
- 4

**Audio**
- 1x Mic-in and speaker-out
- 1x Mic-in and speaker-out
- 1x Mic-in and speaker-out
- 1x Mic-in and speaker-out

**Digital I/O**
- -
- -
- -
- -

**SATA HDD**
- 1x 2.5''
- 1x 2.5''
- 1x 2.5''
- 1x 2.5''

**mSATA / uSATA**
- 1x mSATA
- 1x mSATA
- 1x mSATA
- 1x mSATA

**M.2**
- -
- -
- -
- -

**PCI/PCIe Express**
- -
- -
- -
- -

**DC Input**
- 8-35V DC
- 8-35V DC
- 8-35V DC
- 8-35V DC

**Ignition Control**
- Built-in
- Built-in
- Built-in
- Built-in

**Operating Temperature**
- -40°C ~ 70°C **
- -25°C ~ 70°C **
- -25°C ~ 60°C **
- -25°C ~ 70°C **

**Certification**
- E-Mark, EN50155, CE / FCC
- E-Mark, CE / FCC
- E-Mark, EN50155, CE / FCC, ENSA45, CE / FCC
- E-Mark, EN50155, CE / FCC, ENSA45, CE / FCC

**Released Date**
- 2015/6/1
- 2015/2/1
- 2014/5/1
- 2018/2/1
**Key Features**

- Intel® 8th-Gen Core™ hexa-core 65W / 35W LGA1151 CPU
- Patented Cassette for PCIe/PCIe add-on card accommodation
- Mezo™ Interface for easy function expansion
- Rugged, -25°C to 70°C fanless operation
- Up to 6x GigE ports, supporting 9.5 KB jumbo frame
- M.2 2280 M key socket (Gen3 x4) supporting NVMe SSD or Intel® Optane™ memory
- 4x USB 3.1 Gen2 ports and 4x USB 3.1 Gen1 ports
- VGA/ DVI/ DP triple independent display, supporting 4K2K resolution

**Rugged Embedded**

Introducing Neousys Technology’s 2018 flagship rugged fanless controllers, the new Nuvo-7000 series, powered by Intel® 8th-Gen Core™ processors with up to 6-core/ 12-thread architecture that offer significant performance improvement over previous 6th and 7th-Gen platforms. Nuvo-7000 series includes Neousys’ track-proven technologies for superior ruggedness and versatility, such as effective fanless design, patented expansion Cassette and proprietary Mezo™ Interface. It also incorporates cutting-edge computer I/O like USB 3.1 Gen2 with up to 10 Gbps throughput and M.2 2280 M key socket for NVMe SSD or Intel® Optane™ memory for ultimate system performance. The plethora of on-board I/O ports (GbE, USB and COM) feature sophisticated protection circuits to endure stress from ESD and power surge. This makes Nuvo-7000 series by far the most rock-solid embedded controller we’ve ever created.

Flexible and versatile for a variety of applications, Nuvo-7000 variants are available with different Cassette expansion options. With Neousys 8th-Gen series, you get a true rugged platform that can accommodate a single PCIe card (Nuvo-7000E), dual PCIe cards (Nuvo-7000DE) or a single PCI card (Nuvo-7000P) according your application needs.

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**Specifications**

**System Core**

- Processor: Supporting Intel® 8th Gen Coffee Lake CPU (LGA1151 socket, 65W/ 35W TDP)
  - Intel® Core™ i7-8700 (LGA1151)
  - Intel® Core™ i5-8500 (LGA1151)
  - Intel® Core™ i3-8100 (LGA1151)
- Chipset: Intel® Q370 PCIE controller hub
- Graphics: Integrated Intel® UHD graphics 630
- Memory: Up to 64 GB DDR4 2666/ 2400 SDRAM (two SODIMM slots)
- Processor: Support Intel® 8th-Gen Core™ i7/ i5/ i3 Fanless Controller with 6x GbE Ports, Patented Cassette and Mezo™ Interface
- Expansion Bus: 1x PCIe x16 (Gen3x16), 4x PCIe x8 (Gen3x8), 4x PCIe x4 (Gen3x4)

**Serial Port**

- 2x serial ports (COM1 & COM2)
- Optional 4x serial ports (COM3 & COM4)
- Optional 2x serial ports (COM5 & COM6)

**Audio**

- 3.5 mm jack for mic-in and speaker-out

**Storage Interface**

- SATA: 1x internal SATA port for 2.5" HDD/ SSD installation, supporting RAID 0/ 1
- M.2: 1x M.2 2280 M key socket (PCIe Gen3 x4) supporting NVMe SSD or Intel® Optane™ memory installation

**Network Interface**

- 6x Gigabit Ethernet ports by Intel® I219 and 5x I210 (Nuvo-7006E/ P/ DE)
- Up to 9.5 KB jumbo frame
- Supports Intel® Q370 platform controller hub

**I/O Interface**

- 1x DisplayPort connector, supporting 4096 x 2304 resolution
- 1x DVI-D connector, supporting 1920 x 1200 resolution
- 1x VGA connector, supporting 1920 x 1200 resolution
- 4x USB 3.1 Gen2 ports and 4x USB 3.1 Gen1 ports
- 6x Gigabit Ethernet ports by I219 and 5x I210 (Nuvo-7006E/ P/ DE)
- M.2: 1x M.2 2280 M key socket with dual front-accessible SIM sockets, supporting dual SIM mode with selected M.2 2280 module

**Mechanical**

- Dimension: 240 mm (W) x 225 mm (D) x 90 mm (H) (Nuvo-7000E/ P series)
  - 240 mm (W) x 225 mm (D) x 110.5 mm (H) (Nuvo-7000DE series)
- Weight: 3.7 kg (Nuvo-7000E/ P series)
  - 3.7 kg (Nuvo-7000DE series)
- Mounting: Wall-mounting (standard) or DIN-Rail mounting (optional)
- Environmental Operating Temperature: -25°C to 70°C
- Storage Temperature: -40°C to 85°C
- Humidity: 10%~90%, non-condensing

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Nuvo-7000E/DE/P Series

Optional Accessories

Ordering Information

Model No. | Product Description
--- | ---
Nuvo-7002E | Intel® 8th-Gen Core™ fanless controller with 2x GbE, single-slot PCI Cassette and MezIO™ interface
Nuvo-7002P | Intel® 8th-Gen Core™ fanless controller with 2x GbE, single-slot PCI Express Cassette and MezIO™ interface
Nuvo-7006E | Intel® 8th-Gen Core™ fanless controller with 4x GbE, single-slot PCI Express Cassette and MezIO™ interface
Nuvo-7006F | Intel® 8th-Gen Core™ fanless controller with 4x GbE, single-slot PCI Express Cassette and MezIO™ interface

Optional IEEE 802.3at PoE+ for GbE ports 3 ~ 6

Nuvo-7006P | Intel®

Model No. | Product Description
--- | ---
DINRAIL-O | DIN-rail mounting assembly for Nuvo-7000 series
Dmpbr-Nuvo5000_7000 | Neousys® patented damping bracket assembly for Nuvo-7000E/DE/P
Fankit-25 | Fan assembly for 1-slot Cassette, 25x25x10 mm
PA-160W-OW | 160W AC/DC power adapter 20V/8A;18AWGx4C/120cm, cord end terminals for terminal block, operating temperature : -30 to 70°C.

Units : mm

Nuvo-7000E/DE/P

Optional IEEE 802.3at PoE+ for GbE ports 3 ~ 6

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™-G4 | MezIO™ module with 4x USB3.0 ports
MezIO™-G4P | MezIO™ module with 4x IEEE 802.3at PoE+ ports

MezIO™-G4D | MezIO™ module with 4x GPIO ports
MezIO™-G4P | MezIO™ module with 4x IEEE 802.3at PoE+ ports
**Key Features**

- Intel® 8th-Gen Core™ i7/i5/i3 Fanless Controller with 6x GbE Ports, MezIO™ Interface and Low-profile Chassis
- High-performance M.2 NVMe SSD technology for over 2000MB/s disk read/write speed, or install an Intel® Optane™ memory
- Proprietary MezIO™ interface and a plethora of on-board I/O interfaces
- One 1x M.2 2280 M key socket (PCIe Gen3 x4) supporting NVMe SSD or Intel® Optane™ memory
- 4x USB 3.1 Gen2 ports and 4x USB 3.1 Gen1 ports
- VGA/ DVI/ DP triple independent display, supporting 4K2K resolution
- Intel Pentium® G4900/ G4900T®/ G5400/T G5400T®/ G5400T®
- 8th-Gen Coffee Lake CPU (LGA1151 socket, 65W/ 85W TDP)

**Specifications**

**System Core**
- Supporting Intel® 8th-Gen Coffee Lake CPU (LGA1151 socket, 65W/ 85W TDP)
- Intel® Core™ i7-8700/ i7-8700K
- Intel® Core™ i5-8400/ i5-8400K
- Intel® Pentium® G4900/ G4900T
- Intel® Celeron® G3900/ G3900T

**Chipset**
- Intel® Q370 platform controller hub

**Graphics**
- Integrated Intel® UHD graphics 630

**Memory**
- Up to 64 GB DDR3L 2133/ 2400/ 2666 SO-DIMM (two SO-DIMM slots)

**I/O Interface**
- **Ethernet**: 2x Gigabit Ethernet ports by G49 and D230 (Nuvo-7000LP)
- **PoE+**: Optional IEEE 802.3at PoE+ for GbE ports 3 ~ 6
- **USB**: 4x USB 3.1 Gen2 (2x0/ 2x1) ports - 2x USB 3.1 Gen1 (2x0/ 1x1) ports
- **Video Port**: 1x VGA connector, supporting 1920 x 1080 resolution, 1x DisplayPort connector, supporting 4096 x 2160 resolution
- **Serial Port**: 2x software-programmable RS-232/422/485 ports (COM1/ COM2) & 2x RS-232 ports (COM5/ COM6)
- **Audio**: 1x 3.5 mm jack for mic in and speaker-out

**Storage Interface**
- **SATA-HDD**: 1x front-accessible, hot-swappable 3.5" HDD/ SSD tray
- **mSATA**: 1x full-size mSATA port with mini PCIe

**Expansion Bus**
- Mini PCIe Express
  - 1x full-size mini PCIe Express socket with internal EM socket
  - 1x mini PCIe Express slot, supporting mSATA

**Powder Supply**
- **DC Input**: 1x 3-pin pluggable terminal block for 0~35VDC DC input
- **Sensing Ctrl. & LED Output**: 1x 3-pin pluggable terminal block for remote control and PWR LED output

**Mechanical**
- **Dimension**: 240 mm (W) x 225 mm (D) x 79 mm (H)
- **Weight**: 3.1 kg
- **Mounting**: Wall-mounting (standard) or DIN-Rail mounting (optional)

**Environmental**
- **Operating Temperature**: -40°C ~ 85°C
- **Storage Temperature**: -25°C ~ 70°C
- **Humidity**: 5%~95% non-condensing
- **Vibration**: Operating, MIL-STD-810G, Method 514.6, Category 4
- **Shock**: Operating, MIL-STD-810G, Method 514.6, Procedure I, Table 514.6-I
- **EMC**: CE/FCC Class A, according to EN 55032 & EN 55024

**Ordering Information**

- **Model No.**: Nuvo-7002LP
- **Product Description**: Intel® 8th-Gen Core™ fanless controller with 2x GbE ports, MezIO™ interface and low-profile chassis
- **Nuvo-7000LP**: Intel® 8th-Gen Core™ fanless controller with 6x GbE ports, MezIO™ interface and low-profile chassis
- **Optional Accessories**
  - Optional IEEE 802.3at PoE+ for GbE ports 3 ~ 6
  - Optional MezIO™ module with 4x USB3.0 ports
  - Optional MezIO™ module with ignition power control function for in-vehicle application
  - Optional MezIO™ module with 8-CH isolated digital input and 8-CH isolated digital output
  - Optional MezIO™ module with 4x RS-232/ 422/ 485 ports and 4x RS-422/ 485 ports
  - Optional MezIO™ module with 4x RS-232/ 422/ 485 ports

**Dimensions**

<table>
<thead>
<tr>
<th>Unit: mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
</tr>
<tr>
<td>Weight</td>
</tr>
</tbody>
</table>

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**Introduction**

Integrating cutting-edge technologies, Nuvo-5000 is Neousys’ next-generation rugged fanless embedded controller with performance and versatility. It supports compact 6th-Gen Core® processors so one can choose a CPU according to application performance needs while Neousys’ 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, USB3.0/USB2.0, COM ports, VGA/DVI DP triple independent display outputs and that’s if it’s not enough, Neousys’ patented Cassette offers I/O expansion by installing an off-the-shelf PCIe/PCI card.

On top of all that, Nuvo-5000 also incorporates Neousys MezIO™ interface. The patented design enhances Neousys’ embedded system with a cost-effective and reliable way for I/O expansion for diversified vertical markets.

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**
- Intel® 6th-Gen Core™ fanless controller with 6x GbE, PCI Express Cassette and MezIO™ interface

**Processor**
- 6th-Gen Core™ i7/ i5/ i3 Fanless Controller with 6x GbE, Expansion Cassette and MezIO™ Interface

**Memory**
- Up to 32GB DDR4-2133 SDRAM (two SO-DIMM slots)

**Graphics**
- Integrated Intel® HD Graphics 530/ 510

**Expansion Bus**
- PCI/PCI Express

**Power Supply**
- 80W total power budget

**Environmental**
- Operating, -30°C to 70°C temperature

**Dimensions**
- Unit: mm

**Ordering Information**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Product Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuvo-5000E</td>
<td>Intel® 6th-Gen Core® fanless controller with 2x GbE, PCI Express Cassette and MezIO™ Interface</td>
</tr>
<tr>
<td>Nuvo-5000P</td>
<td>Intel® 6th-Gen Core® Fanless controller with 6x GbE, PCI Express Cassette and MezIO™ Interface</td>
</tr>
<tr>
<td>Nuvo-5006E</td>
<td>Intel® 6th-Gen Core® Fanless controller with 6x GbE, PCI Express Cassette and MezIO™ Interface</td>
</tr>
</tbody>
</table>

**Optional Accessories**

- DINRAIL-O: DIN rail mounting assembly for Nuvo-5000 series
- PA-120-W: 120W AC/DC power adapter, 205x140x23mm, cord and terminals for terminal block, operating temperature: -30°C to 70°C

- Usb 3.0x1 (4pin), memory and iC3D

- VGA Output x 1
dvi-DisplayPort x 2
gbe Port x 4

- 802.3at PoE+ for GbE ports 3 – 6

- MezIO™ Modules
- Mefio™-C190: MezIO™ module with 8x GbE, 1x PCIe-USB380 and pre-installed passive heat-sink (configured as 65W/51W CPU mode)
- Mefio™-C181: MezIO™ module with 8x GbE, 1x PCIe-USB380 and pre-installed passive heat-sink (configured as 65W/51W CPU mode)
- CSM-PoE354: Cassette module with PCIe-USB380 and pre-installed passive heat-sink
- CSM-USB380: Cassette module with PCIe-USB380 and pre-installed passive heat-sink
- CSM-NV750: Cassette module with NVIDIA® GPU 7511 graphics card pre-installed heat-sink and fan
- CSM-R800: Cassette module accommodating four 2.5" SATA HDD (support RAID 0/1/10)

- DINRAIL-O: DIN rail mounting assembly for Nuvo-5000 series
- PA-120-W: 120W AC/DC power adapter, 205x140x23mm, cord and terminals for terminal block, operating temperature: -30°C to 70°C

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**Nuvo-5000LP Series**

**Intel 6th-Gen Core™ / 7th-Gen Fanless Controller with 6x GbE, MezIO™ Interface and Low-profile Chassis**

**Key Features**
- **Intel 6th-Gen Core™** /17/13 35W / 65W LGA1151 CPU
- **MezIO™ Interface** for easy function expansion
- Rugged, **-25°C to 70°C fansless operation**
- Up to 4x 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-5000LP is a low-profile system 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™/7th/6th, from 35W to 65W TDP CPU according to application performance and operation needs. Nuvo-5002LP/5006LP has plentiful IOs such as GbE, USB3.0/USB2.0, COM and VGA/ DVI/ DP. It also incorporates Neousys' MedIO™ interface for additional or application-oriented I/O expansion. By installing an optional MedIO™ 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 IOs.

**Specifications**

- **Processor**
  - Intel® Core™ i7-6700 (8M Cache, 3.4/ 4.0 GHz, 65W TDP)*
  - Intel® Core™ i7-6700TE (35W TDP)
  - Intel® Core™ i5-6500 (6M Cache, 3.2/ 3.6 GHz, 65W TDP)*
  - Intel® Core™ i5-6500TE (35W TDP)
  - Intel® Core™ i3-6100TE (35W TDP)
  - Intel® Pentium® G4400TE (2M Cache, 2.3 GHz, 35W TDP)
  - Intel® Pentium® G4400 (3M Cache, 3.3 GHz, 54W TDP)*
  - Intel® Pentium® G3900TE (2M Cache, 2.3 GHz, 35W TDP)

- **Memory**
  - Up to 32GB, DDR4-2133 SO-DIMM

- **Expansion Bus**
  - 1x internal miniPCI-E Express socket
  - 1x internal miniPCI-E Express socket with front-accessible SIM socket
  - 1x internal miniPCI-E Express socket with internal SIM slot (with or w/o SIM)

- **Display**
  - 1x 10-pin pluggable terminal block for B-EC/ESC DC input

- **Communications**
  - Remote Ctrl. & Status Output
  - 1x 10-pin (2x5) wafer connector for remote on/off control and monitor I/O output

- **Mechanical**
  - Dimensions: 248mm (W) x 232mm (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 **/**
  - Storage Temperature: -40°C ~ 85°C **/**
  - Humidity: 10% ~ 90%, non-condensing
  - Vibration: Operating: 2.5g rms, non-sine, 11 ~ 55Hz, random, 3axis
  - Shock: Operating: 2g rms, half-sine waveform, 1ms duration (SR Class, according to IEC68-2-27)

- **Ordering Information**

- **Model No.**
  - Nuvo-5002LP
  - Nuvo-5006LP

- **Product Description**
  - Intel® 6th-Gen Core™ low-profile fanless controller with 6x GbE and MedIO™ interface
  - Intel® 6th-Gen Core™ low-profile fanless controller with 4x GbE and MedIO™ interface
  - Optional IEEE 802.3at PoE+ PSE for GbE Ports 3 ~ 6

- **Optional Accessories**

- DINRAIL-O
  - DIN-rail mounting assembly for Nuvo-5000LP series
- PA-120W-0W
  - 120W AC/DC power adapter 20W/18W/12W/10W, cord end terminals for terminal block, operating temperature: -30 to 70°C.
- DimbNuvo5000_7000
  - Neousys' patented damping bracket assembly for Nuvo-7000E/DE/FP

- **MezIO™ Modules**

- **MeziO-C180**
  - MeziO™ module with 4x RS-232/485/422/485 ports
  - MeziO™ module with 4x RS-422/485 ports

- **MeziO-C181**
  - MeziO™ module with 4x RS-232/422/485 ports
  - MeziO™ module with 4x RS-422/485 ports

- **MeziO-D220**
  - MeziO™ module with 16-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

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Nuvo-5026E is the latest Nuvo-5000 family member with dual PCIe slots. The dual PCIe slots enhance expansion abilities while preserving all practical features such as ruggedness, performance and versatility. The expandability makes Nuvo-5026E more adaptable to various application needs while the two PCIe slots in the patented expansion Cassette are easy to access for PCIe card installation without the need to disassemble the system. Nuvo-5026E supports LGA1151 6th-Gen Core™ processors. It offers processor selection flexibility from Core™ i7 to Celeron according to performance needs and operating environment. It also offers plenty of I/O functions such as 6x GbE, 4x USB3.0, 3x COM ports and triple independent display support. In addition, Neousys’ MezIO™ Interface can also further expand system I/Os offering up to either 11x COM ports, 10x GbE, 8x USB3.0, 32x DIO or ignition power control by installing an optional MezIO™ module.

Nuvo-5026E is an expandable and flexible platform with numerous I/O functions for various industrial applications.

### Key Features
- **Intel® 6th Gen Core™ i7/i5/i3 LGA1151 35W/65W**
- **Dual PCIe x8 slots in patented expansion Cassette**
- **MezIO™ Interface for easy function expansion**
- **Rugged, -25°C to 70°C fanless operation**
- **6x GbE ports, supporting 9.5 KB jumbo frame**
- **Up to 32 GB, DDR4-2133 SO-DIMM**
- **Rugged, -25°C to 70°C SO-DIMM**
- **Accommodates two 2.5” SATA HDD/ SSD with RAID 0/1 support**
- **VGA/DVI/D Port triple independent display, supporting 4K2K resolution**

### Introduction
Nuvo-5026E is the latest member of the Nuvo-5000 family with dual PCIe slots. The dual PCIe slots enhance expansion abilities while preserving all practical features such as ruggedness, performance, and versatility. The expandability makes Nuvo-5026E more adaptable to various application needs while the two PCIe slots in the patented expansion Cassette are easy to access for PCIe card installation without the need to disassemble the system. Nuvo-5026E supports LGA1151 6th-Gen Core™ processors. It offers processor selection flexibility from Core™ i7 to Celeron according to performance needs and operating environment. It also offers plenty of I/O functions such as 6x GbE, 4x USB3.0, 3x COM ports and triple independent display support. In addition, Neousys’ MezIO™ Interface can also further expand system I/Os offering up to either 11x COM ports, 10x GbE, 8x USB3.0, 32x DIO or ignition power control by installing an optional MezIO™ module.

### Specifications

**System Core**
- **Processor**
  - Intel® Core™ i7-6100U (3M Cache, 2.3 GHz, 35W TDP)
  - Intel® Core™ i5-6500 (6M Cache, 3.2/3.6 GHz, 65W TDP)
  - Intel® Core™ i7-6700 (8M Cache, 3.4/4.0 GHz, 65W TDP)*
- **Chipset**
  - Intel® Q170 platform controller hub
- ** Graf phics**
  - Integrated Intel® HD graphics 530 or 510 (CPU dependent)
- **Memory**
  - Up to 32 GB, DDR4-2133 SO-DIMM (two SO-DIMM slots)
- **AMT**
  - Supports AMT 11.0
- **TPM**
  - Supports TPM 2.0

**Power Supply**
- **Input**
  - 80W total power budget
- **Output**
  - 1x 3-pin pluggable terminal block for 8-5VDC DC input
- **Remote Ctrl. & Status Output**
  - 1x 10-pin (5V)输出 connector for remote on/off control and status LED output

**Me zIO™ Interface**
- **Ethernet**
  - 6x Gigabit Ethernet ports by Intel® i217-2 and i350 T
- **PoE+**
  - Optional IEEE 802.3at PoE+ for GbE ports 3 ~ 6
- **USB**
  - 4x USB3.0 ports via native xHCI controller
- **Video Port**
  - 1x stacked VGA + DVI-D Connector
  - 2x DisplayPort connections, supporting QM1 resolution
- **Serial Port**
  - 2x software-programmable RS-232/422/485 pins (COM1 & COM2)
  - 1x RS-232 pin (COM3)
- **Audio**
  - 1x Mic-in and 1x Speaker-out

**Storage Interface**
- **SATA HDD**
  - 2x internal SATA ports for 2.5” HDD/SSD installation, supporting RAID 0/1
- **mSATA**
  - 1x full-size mSATA port (with mini PCIe)

**Expansion Bus**
- **PCI/PCI Express**
  - 2x PCIe x16 slot (Gen3), 4-lanes PCIe signals in expansion Cassette
- **Mini-PCI-E**
  - 1x internal mini PCI Express socket with front-accessible SMA socket
  - 1x internal mini PCI Express socket with internal SMA socket (with mSATA)

**Environmental**
- **Operating Temperature**
  - -25°C ~ 70°C for sub-zero operating temperature, a wide temperature HDD drive or Solid State Disk (SSD) is required.
  - -25°C ~ 50°C for higher operating temperature.
  - Throttling may occur when sustained full-loading applied. Users can configure CPU power in BIOS to obtain higher operating temperature.
- **Humidity**
  - 5% ~ 95%, non-condensing
- **Vibration**
  - Operating: 0.5G, 5-40 Hz, 3 axis (at 150G, according to ISO22848-2-4)
  - Shock: Operating: 5G, Half-sine 11 ms Duration

**EMC**
- **CE/ FCC Class A, according to EN55022 & EN55032

### Ordering Information
- **Model No.**
  - Nuvo-5026E
  - Intel® 6th-gen Core™ fanless controller with dual PCIe Cassette, 6x GbE and MezIO™ interface

**Optional Accessories**
- **PA-1600W-DW**
  - 1600W AC/DC power adapter 200-240V/18AWGx4C120cm, cord and terminals for terminal block, operating temperature: -50 to 70°C.
- **DINRAIL-O**
  - DIN rail mounting assembly for Nuvo-5026E series
- **DmpbrNuvo5000_7000**
  - Neousys’ patented damping bracket assembly for Nuvo-7000E/D/E/P

**MezIO™ Modules**
- **MezIO™-C180**
  - MezIO™ module with 4x RS-232/422/485 ports and 4x RS-232 ports
- **MezIO™-C181**
  - MezIO™ module with 8x 10/100/1000M Ethernet ports and 4x RS-232 ports
- **MezIO™-D220**
  - MezIO™ module with 8x RS-485 isolated digital input and 8x RS-485 isolated digital output
- **MezIO™-D230**
  - MezIO™ module with 16x RS-485 isolated digital input and 16x RS-485 isolated digital output
- **MezIO™-V20-EP**
  - MezIO™ module with ignition power control function for in-vehicle usage
- **MezIO™-G4P**
  - MezIO™ module with 4x Gigabit Ethernet ports
- **MezIO™-G4**
  - MezIO™ module with 4x Gigabit Ethernet ports

**Dimensions**

<table>
<thead>
<tr>
<th>Unit</th>
<th>mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>225</td>
</tr>
<tr>
<td>Height</td>
<td>110.5</td>
</tr>
<tr>
<td>Depth</td>
<td>51</td>
</tr>
</tbody>
</table>

**Wall-mount by mounting bracket (standard)**

**DIN-rail mounting (optional)**

Nuvo-5026E Series

Available at Neousys Technology Inc.

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Nuvo-5501 Series

**Key Features**
- Compact 221 x 173 x 76.2 mm footprint
- Supports Intel® 6th-Gen Core™ i7/i5/i3 LGA 1151 socket CPU
- Rugged, -25°C to 70°C wide-temperature fanless operation
- 3x GbE and 4x USB3.0 ports
- 2x RS-232/ 422/ 485 ports and 2x RS-232 ports
- VGA + DVI dual display outputs
- Accommodates one 3.5" HDD or 2.5" HDD/ SSD
- Optional B+CH isolated DI and B-CH isolated DO

**Introduction**
Nuvo-5501 series features compact fanless embedded controllers for the cost and space conscious. Based on Intel® Skylake platform, it is designed to provide cutting-edge performance and reliable operation in extreme environment. Its LGA 1151 socket offers the flexibility to select a 35W CPU from Intel® 6th-Gen Core™ to Celeron® lineup to suit application needs.

Nuvo-5501 is the most compact fanless embedded controller supporting Skylake LGA 1151 socket CPUs, measuring just 221 x 173 x 76.2 mm, it is easy to deploy in restricted spaces. In its compact enclosure, Nuvo-5501 features rich, front-accessible I/Os including 3x GbE, 4x USB3.0 and 4x COM ports. There is even enough room for a 3.5" HDD, compatible with the latest storage capacities.

The compact Nuvo-5501 is a cost-effective solution that does not compromise on performance and reliability, making it the ideal embedded controller for various industrial applications.

**Specifications**

**System Core**
- Supports following CPUs
  - Intel® Core™ i7-6100TE (4M Cache, 2.7 GHz, 35W TDP), i5-6500TE (6M Cache, 2.3/ 3.3 GHz, 35W TDP), i3-6100TE (4M Cache, 2.7 GHz, 35W TDP)
- Intel® Pentium® G4400TE (3M Cache, 2.4 GHz, 35W TDP), G3900TE (2M Cache, 2.3 GHz, 35W TDP)

**Processor**
- Nuvo-5501 Series
  - Intel® 6th-Gen Core™ compact fanless embedded controller with 3x GbE

**Chipset**
- Intel® H110 platform controller hub

**Graphics**
- Integrated Intel® HD 530/ 510 controller

**Memory**
- Up to 16GB DDR4-2133 (single SO-DIMM slot)

**Expansion Bus/ Internal I/O Interface**
- M.2: 1x full-size mini PCIE Express socket
- SATA: 1x full-size miniPCIE Express socket
- USB: 1x internal USB2.0 port
- Power Supply: DC input 1x 3-pin pluggable terminal block for 8-35 VDC power input

**Environmental**
- Temperature
  - Operating: -20°C ~ 70°C
  - Storage: -40°C ~ 85°C
- Humidity
  - Operating: 10%~90%, non-condensing
  - Storage: 10%~90% (w/ SSD, according to IEC60068-2-64)
- Shock
  - Operating: 22g (half sine, 11 ms duration)
  - Storage: 36g (half sine, 1ms duration)

**Ordering Information**

**Model No.**
- Nuvo-5501
- Nuvo-5501-DIO

**Product Description**
- Intel® 6th Gen Core™ compact fanless embedded controller with 3x GbE
- Intel® 6th Gen Core™ compact fanless embedded controller with isolated DIO & 3x GbE

**Optional Accessories**
- DINRAIL-31 DIN-rail mounting assembly for Nuvo-5501 series
- PA-120W-OV 120W AC/DC power adapter for DINRAIL series, 18AWG/120cm; cord ends terminals for terminal block, operating temperature: -40 to 70°C.
Nuvo-2500E/P Series

Intel® Celeron® Bay Trail Fanless Computer with Expansion Cassette

Introduction

Nuvo-2500E/P series are general purpose fanless computers with Intel® Bay Trail processor. Powered by the quad-core Bay Trail processor, Nuvo-2500 shows outstanding computing power and is more power efficient compared to its predecessors. Nuvo-2500 supports dual independent display, dual storage for isolating system and data, 2x Gigabit Ethernet ports, 4x COM ports and 4x USB ports.

With one PCI or PCIe expansion slot, Nuvo-2500 still retains its compact dimensions measuring just 205mm (W) x 146mm (D) x 76mm (H). The PCI or PCIe expansion slot is situated in Neousys Patented expansion Cassette. The patented design significantly reduces thermal impact from the installed add-on card thus making Nuvo-2500 extremely reliable and stable under harsh environments.

Wireless communication such as 3G, LTE, Wi-Fi and BT are supported by internal Mini PCIe socket with USIM socket. As an option, Nuvo-2500 can be equipped with an Auxiliary I/O that includes 4x isolated digital inputs, 8x isolated digital outputs, 4x PWM outputs, 1x quadrature encoder input and 2x ADC.

The Auxiliary I/O facilitates simple sequence and speed control for various types of motors making Nuvo-2500 the perfect controller for your versatile equipment.

Key Features

- Intel® Celeron® Bay Trail J1900 quad-core processor
- Compact 1x PCI/PCIe expansion
- Rugged, -25°C to 70°C fanless operation
- Dual storage with 1x mSATA and 1x SATA
- Dual independent display via VGA and DVI connectors
- 2x RS-232/422/485 + 2x RS-232
- Optional MAIO for DI/O, PWM and encoder signals
- 8 to 35V DC wide-range DC input

Specifications

**System Core**

- Processor: Intel® Celeron® Bay Trail J1900 quad-core processor (2.42 GHz, 2M cache)
- Graphics: Integrated Intel® HD graphics
- Memory: Up to 8GB DDR3L 1333Mhz SDRAM (single SO-DIMM slot)

**Expansion Bus**

- Max PCI-E: 1x Full-size mini PCIe Express slot with USIM holder [PCI-E x1 Gen2 and USIM signal]
- 1x Full-size mini PCIe Express slot [PCI-E x8 Gen3 (M.2)]
- PCIe (Nuvo-2500P):
  - 1x PCI-Express x4 slot with USIM at and pre-installed passive heat-spreader
  - USB: 1x USB3.0 and 3x USB2.0

**Power Supply**

- DC Input: 8~35V DC

**Mechanical**

- Dimension: 205mm (W) x 146mm (D) x 76mm (H)
- Mounting: Wall-mounting (standard) or DIN-rail mounting (optional)

**Back Panel I/O Interface**

- Audio: 1x Mic-in and 1x speaker-out
- Aux I/O Port: 1x DB-9 F/FDB connector, 4x DI and 8x DO, 6x PWM, 1x encoder and 2x voltage inputs are available on an option of MAIO
- Video Port: 1x DVI-D output via DVI-I connector, supporting resolution up to 2560 x 1600

**Power Input**

- Input: 8~35V DC

**Environmental**

- Operating Temperature: -25°C ~ 70°C (with SSD, 100% CPU loading)
- Storage Temperature: -40°C ~ 85°C**
- Humidity: 10%~90%, non-condensing
- Shock: Operating: 5G, 3 axes, 3 times (per IEC68-2-26)
- Vibration: Operating: 5G, 3 axes, 11m/s² (per IEC68-2-6)
- EMI: C&K Class A, according to EN55022 & EN55032

**Ordering Information**

- Model No.: Nuvo-2500P
- Description: Intel® Bay Trail Celeron® [1900 Series embedded controller with 1x PCI slot in Neousys patented Cassette]
- Nuvo-2500E
  - Intel® Bay Trail Celeron® [1900 Series fanless embedded controller with 2x PCIe x4 slot (8x 1x signals) in Neousys patented Cassette]
- Optional Accessories
  - DINRAIL-25: DIN-rail mounting assembly for Nuvo-2500 series
  - PA-60W-OW: 60W AGDC power adapter with 120, 5A DC output, cord ends terminals for terminal block, operating temperature: -30 to 60°C

- Cassette Modules
  - CSM-PeE3S4: Cassette module with PCIe-PoE3S4at and pre-installed passive heat-spreader
  - CSM-PeE3S2: Cassette module with PCIe-PoE3S2at and pre-installed passive heat-spreader
  - CSM-USB380: Cassette module with PCIe-USB380 and pre-installed passive heat-spreader
  - CSM-USB390: Cassette module with PCIe-USB390 and pre-installed passive heat-spreader

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*For the latest CPU booting procedure using PassMark™ DriverDock™ v7.0. For other testing criteria, please contact Neousys Technology
*For sub-zero operating temperature, a wide temperature HDD drive or Solid State Disk (SSD) is required.

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Nuvo-6000 Series

Intel® 6th Gen Core™ i7/i5/i3 Fanless Box-PC with Up to 5 PCIe/ PCI Expansion Slots

Key Features
- Supports Intel® 6th Gen Core™ i7/i5/i3, Pentium® and Celeron® LGA1151 CPU
- Up to five expansion slots
  - x16 PCIe, x8 PCIe and three PCIe slots (Nuvo-6032)
  - x16 PCIe and x8 PCIe slots (Nuvo-6002)
- Rugged, -25 °C to 60 °C fanless operation
- 2x GbE, 4x USB3.0 and 5x COM ports
- Dual DVI display outputs
- Up to 3x 2.5" SATA HDD/SDD and 1x mSATA socket
- Wall-mounting, (optional DIN-rail and rack-mount)
- Optional fan with automatic temperature sensing and fan control

Introduction

Nuvo-6000 series is the perfect replacement for your bulky rack-mount or wall-mount IPC systems. Leveraging Intel® 6th Gen Skylake platform, it delivers the same computing power as traditional IPCs, but in a compact fanless form-factor. Nuvo-6000 series supports LGA1151 socket-type CPU, you can choose from Core™ i7 to Celeron® depending on your budget/ application needs. Its 5-slot capacity offer the same level of expandability as most IPCs. The front-accessible I/O design includes 2x GbE, 4x USB3.0 and 5x COM ports, making it easier to access your Nuvo-6000 when it’s placed inside a cabinet or a rack.

Key Features
- Supports Intel® 6th Gen Core™ i7/i5/i3, Pentium® and Celeron® LGA1151 CPU
- Up to five expansion slots
  - x16 PCIe, x8 PCIe and three PCIe slots (Nuvo-6032)
  - x16 PCIe and x8 PCIe slots (Nuvo-6002)
- Rugged, -25 °C to 60 °C fanless operation
- 2x GbE, 4x USB3.0 and 5x COM ports
- Dual DVI display outputs
- Up to 3x 2.5" SATA HDD/SDD and 1x mSATA socket
- Wall-mounting, (optional DIN-rail and rack-mount)
- Optional fan with automatic temperature sensing and fan control

Specifications

<table>
<thead>
<tr>
<th>Nuvo-6032</th>
<th>Nuvo-6002</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>System Core</strong></td>
<td><strong>System Core</strong></td>
</tr>
<tr>
<td>Processor</td>
<td>Supports Intel® 6th Gen Core™, Pentium® and Celeron® LGA1151 CPU</td>
</tr>
<tr>
<td>Chipset</td>
<td>Intel® H110 platform controller hub</td>
</tr>
<tr>
<td>Graphics</td>
<td>Integrated Intel® HD SAVI/100 controller</td>
</tr>
<tr>
<td>Memory</td>
<td>Up to 16 GB DDR4-2133 (single SO-DIMM slot)</td>
</tr>
<tr>
<td><strong>Ethernet</strong></td>
<td><strong>Ethernet</strong></td>
</tr>
<tr>
<td></td>
<td>2x Gigabit Ethernet ports</td>
</tr>
<tr>
<td><strong>USB</strong></td>
<td>2x USB3.0 ports</td>
</tr>
<tr>
<td><strong>Audio</strong></td>
<td>1x Speaker out</td>
</tr>
<tr>
<td><strong>Storage Interface</strong></td>
<td><strong>Storage Interface</strong></td>
</tr>
<tr>
<td>SATA HDD</td>
<td>3x SATA ports for 2.5&quot; HDD/SSD installation</td>
</tr>
<tr>
<td>msATA</td>
<td>1x full-size msATA socket</td>
</tr>
</tbody>
</table>

Expansion Bus/ Internal I/O Interface

<table>
<thead>
<tr>
<th>Nuvo-6032</th>
<th>Nuvo-6002</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PCI Express</strong></td>
<td><strong>PCI Express</strong></td>
</tr>
<tr>
<td></td>
<td>1x PCIe x16 slot (Gen3), 16-lane PCIe signals</td>
</tr>
<tr>
<td></td>
<td>1x PCIe x8 slot (Gen2), 8-lane PCIe signals</td>
</tr>
<tr>
<td><strong>PCI</strong></td>
<td>1x 32MB/1.25 GbE PCI slots</td>
</tr>
<tr>
<td><strong>Remote OUI &amp; Status Output</strong></td>
<td>1x 2.5-pin header connector for remote on/off switch and status LED output</td>
</tr>
<tr>
<td><strong>Power Supply</strong></td>
<td><strong>Power Supply</strong></td>
</tr>
<tr>
<td>DC Input</td>
<td>1x 3-pin pluggable terminal block for 8-35V DC DC input</td>
</tr>
<tr>
<td>Voltage</td>
<td>12V, 24V, 48V, 60V, 90V, 120V, 180V, 240V, 360V, 480V</td>
</tr>
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</table>

Environmental Specifications

<table>
<thead>
<tr>
<th>Nuvo-6032</th>
<th>Nuvo-6002</th>
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</thead>
<tbody>
<tr>
<td><strong>Operating Temperature</strong></td>
<td>-20°C ~ 60°C</td>
</tr>
<tr>
<td><strong>Storage Temperature</strong></td>
<td>-60°C ~ 85°C</td>
</tr>
<tr>
<td><strong>Humidity</strong></td>
<td>95% non-condensing</td>
</tr>
<tr>
<td><strong>Vibration</strong></td>
<td>Operating: 0.5 Grms, 5-500 Hz, 2 Axes (per IEC60068-2-64)</td>
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<tr>
<td></td>
<td>Shock: 35 Grms, half sine 11 ms, 2 Axes (per IEC608-2-37)</td>
</tr>
<tr>
<td><strong>Shock</strong></td>
<td>35 Grms, half sine</td>
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Ordering Information

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<th>Product Description</th>
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<tbody>
<tr>
<td>Nuvo-6032</td>
<td>Intel® 6th Gen Core™ Fanless Box-PC with 1x PCIe x16 slot, 1x PCIe x8 (x4 signals) slot and 3x PCI slots</td>
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<tr>
<td>Nuvo-6002</td>
<td>Intel® 6th Gen Core™ Fanless Box-PC with 1x PCIe x16 slot and 1x PCIe x8 (x4 signals) slot</td>
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Optional Accessories

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Accessory Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rmkkit-Nuvo6000</td>
<td>Rack mounting assembly for Nuvo-6000 series</td>
</tr>
<tr>
<td>DINRAIL-E</td>
<td>DIN-rail mounting assembly for Nuvo-6000 series</td>
</tr>
<tr>
<td>Fankit-80</td>
<td>Fan assembly for Nuvo-6000 series, 80x80x18 mm</td>
</tr>
<tr>
<td>PA-120W-0W</td>
<td>120W AC/DC power adapter 20V/1A, 18AWG/20m, cord and terminals for terminal block, operating temperature: -50 to 70 °C</td>
</tr>
<tr>
<td>PA-160W-0W</td>
<td>160W AC/DC power adapter 20V/1A, 18AWG/14/C120mm, cord and terminals for terminal block, operating temperature: -50 to 70 °C</td>
</tr>
<tr>
<td>CDP-DB9F-3DB9M-10CM</td>
<td>1x DB9 (female) to 3x DB9 (male), for Nuvo-6000 series, length: 15CM</td>
</tr>
</tbody>
</table>
Nuvo-2400 Series

**Key Features**

- **Intel® Celeron® Bay Trail quad-core processor**
- **3x PCI slots or 1x PCIe x4 + 2x PCI slots**
- **Rugged, -25°C to 70°C fanless operation**
- **Dual independent display via DVI-I connector**
- **2x SATA ports for 2.5" HDD/SSD**
- **2x RS-232/ 422/ 485 and 2x RS-232**
- **Optional isolated 8-ch DI and 8-ch DO**
- **8 to 25V DC wide-range input**

**Introduction**

Nuvo-2400 series are fanless shoebox IPCs with 3 PCI or 2 PCI + 1 PCIe expansion slots. The expansion slots are provided for add-on cards, such as COM port cards and frame grabbers. Nuvo-2400 provides 3 PCI slots, while Nuvo-2421 provides one PCIe x4 slot with and two PCI slots (1-lane PCI Express 2.0 signal).

Nuvo-2400 series facilitate the integration of both remote on/off switch and the system status indicators with corresponding signals reserved for buttons and LEDs outside of Nuvo-2400 so users can power on/off Nuvo-2400 externally. Furthermore, there are optional 24V DC rated and isolated 8-channel digital inputs/8-channel digital outputs. This makes Nuvo-2400's DI/O compatible with many industrial sensors, indicators, coils and actuators.

Powered by Intel® Celeron® Bay Trail J1900 series quad-core processor, Nuvo-2400 series show outstanding computing power and is even more power efficient compared to its predecessors. Nuvo-2400 supports dual independent displays, dual 2.5" SATA bays and dual gigabit LAN ports with teaming and PXE. These features, together with 3 expansion slots, maximize the flexibility of Nuvo-2400 for various applications.

**Specifications**

- **Processor**: Intel® Celeron® Bay Trail J1900 quad-core processor (22纳米, 2.42GHz)
- **Graphics**: Integrated Intel® HD graphics
- **Memory**: Up to 1GB-DDR3L-1333MHz SDRAM (single SO-DIMM slot)
- **Front Panel I/O Interface**:
  - **Ethernet**: 2x Gigabit Ethernet by Intel® Ethernet controller (210)
  - **Video Port**: 1x DVI-I for VGA and DVI dual independent display support
  - **Serial Port**: 2x RS232-configurable RS-232/422/485 (CEMI & COM2)
  - **USB**: 1x USB3.0 and 3x USB2.0
  - **Audio**: 1x Mic-in and 1x speaker-out
- **Internal I/O Interface**:
  - **Parallel Port**: 1x parallel port
  - **Isolated DIO**: Optional 8-pin DIO or 8-pin DIO (ganging mode only)
  - **Remote Control**: 1x 5-pin 2.0mm pin-header connector for remote on/off control
  - **Status Output**: 1x 2x6-pin 2.0mm pin-header connector for status output
  - **Storage Interface**: 2x internal SATA ports for 2.5" HDD/SSD installation
- **Power Supply**: DC input 8–25V DC

**Operating**

- **Temperature**: -25°C ~ 70°C, 100% CPU loading */**
- **Humidity**: 10% – 90%, non-condensing
- **Vibration**: Operating, 2g, 5-500 Hz, 3 Axes (w/ SSD, according to IEC60068-2-64)
- **Shock**: Operating, 50g rms, half-sine 11 ms Duration (w/ SSD, according to IEC60068-2-27)

**Ordering Information**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Product Description</th>
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</thead>
<tbody>
<tr>
<td>Nuvo-2430</td>
<td>intel® Bay Trail Celeron® J1900 fanless shoe-box IPC with dual display, dual GbE and 3x PCI slots</td>
</tr>
<tr>
<td>Nuvo-2421</td>
<td>intel® Bay Trail Celeron® J1900 fanless shoe-box IPC with dual display, dual GbE, 2x PCI slots and one PCIe x4 slot</td>
</tr>
</tbody>
</table>

**Optional DIO (8 DI + 8 DO)**

**Optional Accessories**

- **Panel cable kit for 2x COM ports**
- **Panel cable kit for 1x COM + 1x LP ports**
- **Fan Kit**: 80 Fan assembly for Nuvo-2400 series, 80mmx80mm 15 mm
- **DINRAIL-E**: DIN rail mounting assembly for Nuvo-2400 series
- **FA-60W-OW**: 60W AC/DC power adapter with 12V, 5A DC output, cord end terminals for terminal block - operating temperature: -30 to 60 °C
Supercapacitor-based Power Backup Solution

Battery vs. Supercapacitor

For decades, battery has been the preferred form of energy storage as it has high energy density (10~100 Wh/kg). However, limited by operating temperature (typically 0°C~40°C) and cycle life (2 years or 500 charge-discharge cycles), battery is neither rugged nor durable enough for industrial applications. Supercapacitor, also called electric double-layer capacitor (EDLC), is an emerging category of capacitor offering 10~100 times more energy density than electrolytic capacitor (1~10 Wh/kg). In addition to its impressive energy density, supercapacitor also has a wide operating temperature range (-40°C~85°C) and long operating life (10 years or 500,000 charge-discharge cycles). These two traits help make it a reliable industrial power backup solution.

Neousys’ Patented CAP Energy Management Technology

To design and create a reliable supercapacitor-based power backup system requires fundamental techniques such as charge/discharge control, active load balance and DC/DC regulation. But the real challenge is how to get the most out of the capacitor energy while ensuring the system shuts down safely during the blackout. At Neousys Technology, we have patented an architecture (R.O.C. Patent No. 1598820) that incorporates a microprocessor along with supercapacitor and charge/discharge controller. The proprietary firmware embedded in the MCU not only monitors energy level continuously, it also automatically initiates soft-shutdown to prevent data loss/computations. The patented architecture provides sophisticated features such as real-time energy monitoring, h/voltage protection and auto/manual shutdown control. Users can also extend the lifespan of ultracapacitors up to 4.8x via the parameter configuration utility.

Supercapacitor-based Power Backup Solution vs. UPS

Combining supercapacitors and our patented architecture, Neousys introduces a revolutionary supercapacitor-based power backup solution for industrial applications. Compared to battery-based UPS, it has wider operating temperature, extended operating life, adequate backup time to secure your embedded controller against unforeseen power outages.

### Energy Storage Technologies

<table>
<thead>
<tr>
<th>Energy Storage</th>
<th>Supercapacitor</th>
<th>Supercapacitor</th>
<th>Battery</th>
<th>Battery</th>
<th>Battery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backup time</td>
<td>1 ~ 3 mins</td>
<td>1 ~ 10 mins</td>
<td>&gt; 30 mins</td>
<td>&gt; 30 mins</td>
<td>&gt; 30 mins</td>
</tr>
<tr>
<td>Operating temp.</td>
<td>-25°C ~ 65°C</td>
<td>-25°C ~ 65°C</td>
<td>0°C ~ 40°C</td>
<td>0°C ~ 40°C</td>
<td>0°C ~ 40°C</td>
</tr>
<tr>
<td>Lifespan</td>
<td>&gt; 10 yrs @ 25°C</td>
<td>&gt; 10 yrs @ 25°C</td>
<td>2 yrs @ 25°C</td>
<td>2 yrs @ 25°C</td>
<td>2 yrs @ 25°C</td>
</tr>
<tr>
<td>Regulated power output</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Shutdown control</td>
<td>Automatic, plug and play</td>
<td>Automatic, plug and play</td>
<td>Via RS-232 and software</td>
<td>Via RS-232 and software</td>
<td>Via RS-232 and software</td>
</tr>
</tbody>
</table>

INDUSTRIAL-GRADE INTELLIGENT SUPERCAPACITOR-BASED POWER BACKUP MODULE
**Key Features**
- Universal standalone power backup module compatible with all box-PCs
- Supercapacitor-based, -25 to 65°C wide temperature operation
- 9250 watt-second energy capacity
- Maximum 180W output power for the connected back-end system
- Up to 10 years lifespan, and 500,000 charging/discharging cycles
- Patented CAP energy management technology
- Extends back-up time in the event of an unforeseen power outage
- Monitors energy and power consumption to extend operation time for safe system shutdown
- Versatile operating mode
- Normal backup mode
- Ignition control mode for standard box-PC and in-vehicle controller
- Ultra-CAP energy/lifespan configuration

**Introduction**
PB-9250J is a standalone power backup module that can protect your box-PC against power outages. Utilizing state-of-the-art supercapacitor technology, it can operate in harsh environments from -25 to 65°C, and have extremely high durability lasting up to 10 years.

PB-9250J-SA is composed of eight 370F/3.0V supercapacitors, which offers 3.3 times longer lifespan than its 2.7V counterpart, and stores 9250 watt-second energy to offer extra extended operation time to backup your system. Thanks to Neousys’ patented CAP energy management technology, it can reliably supply 180W power to the back-end system and automatically manage boot and shutdown without installing additional drivers or software. In addition to UPS-like power backup mode, it also offers two advanced ignition control modes for in-vehicle usage. PB-9250J-SA can work with other standard box-PC or in-vehicle controller to provide stable power supply and execute user-configurable power-on/power-off delay according to IGN signal input.

Featuring various modes, automatic shutdown control and up to 180W output power, PB-9250J-SA can work with most off-the-shelf box-PCs. And with properties such as maintenance-free energy storage and uninterruptible power supply, PB-9250J-SA can prevent data loss for the connected back-end system during power outage in harsh industrial environments.

**Specifications**

- **Super capacitor Configuration**
  - Composition: 8x 370F, 3.0V supercapacitors
  - Capacity: 9250 watt-second

- **Expected Lifespan**
  - >10 years at 0°C with 9250 w capacity*
  - >7 years at 0°C with 9250 w capacity*
  - >5 years at 0°C with 9250 w capacity*
  - >3 years at 0°C with 9250 w capacity*
  - >2.5 years at 0°C with 9250 w capacity*
  - >2 years at 0°C with 9250 w capacity*
  - >1.7 years at 0°C with 9250 w capacity*

- **Lifecycles**
  - 500,000 charging/discharging cycles*

- **Power Specifications**
  - Input Voltage: 12-48V
  - Output Voltage:
    - 1x 3-pin pluggable terminal block (V+, GND, IGN_IN)
      - 12-35 VDC
  - Output Current:
    - Maximum: 2.5A output**

- **Ordering Information**
  - Model No.: PB-9250J-SA
  - Product Description: Standalone intelligent supercapacitor-base power backup module with 9250W energy capacity

---

**PB-2500J Series**

**Industrial-Grade Intelligent Supercapacitor-based Uninterruptible Power Backup Module**

**Key Features**
- Supercapacitor-based, -25 to 65°C wide temperature operation
- 2500 watt-second energy capacity
- Up to 10 years lifespan and 500,000 charging/discharging cycles
- Patented CAP energy management technology
- Maximizes back-up time in an event of unforeseen power outage
- Monitors energy consumed and estimates the time required for system shutdown
- User-configurable operating parameters
- Auto/manual shutdown control
- High/low voltage protection
- Ultra-CAP energy/lifespan configuration

**Introduction**
Neousys’ PB-2500J series is an innovative power backup solution for demanding industrial applications. Utilizing supercapacitor technology, it features -25°C to 65°C operating temperature range and extremely high durability. Compared to traditional battery-based UPS systems, PB-2500J series can sustain superb reliability in extreme temperature environments and eliminates the drawbacks of battery performance degradation over time.

PB-2500J series is composed of eight 100F supercapacitors to provide 2500 watt-second stored energy to sustain your computer during power outage and depending on your system’s power consumption, it could be from seconds to minutes. But what makes PB-2500J novel is its patented CAP energy management technology, an on-board processor that constantly monitors your power consumption and then mitigates the system operation time by estimating the perfect time to initiate system shutdown to prevent data loss.

PB-2500J series is available in two form-factors; PB-2500J-PCIe is a plug-and-play PCIe card specifically designed for Nuvo-6000 (except Nuvo-6108GC/4GN), while PB-2500J-CSM is designed for Nuvo-5000J/P and Nuvo-7000J/P series.

When it comes to industrial embedded controllers, stability and data loss prevention during power outages are just as important. Neousys’ PB-2500J series aims to redefine reliability and take it to another level. With PB-2500J series, unexpected power loss and unstable power lines are a thing of the past!

**Specifications**

- **PB-2500J-PCIe**
  - 8x 100F, 3.0V ultracapacitors
  - Capacity: 2500 watt-second
  - Expected Lifespan:
    - >10 years @ 0°C with 2500 w capacity*
    - >7 years @ 0°C with 2500 w capacity*
    - >5 years @ 0°C with 2500 w capacity*
    - >3 years @ 0°C with 2500 w capacity*
    - >2.5 years @ 0°C with 2500 w capacity*
    - >2 years @ 0°C with 2500 w capacity*
  - Expected Lifespan: 2.2x when configured as 2500 watt-second energy capacity, or 4.8x when configured as 1750 watt-second energy capacity.
  - Lifecycle: 500,000 charging/discharging cycles*
  - Communication interface: 3-wire RS-232
  - Dimension:
    - Half-length PCIe card
  - Weight: 2.2 kg
  - Mechanical:
    - 3-wire RS-232 Communication interface
  - Vibration:
    - Operating: Mil-STD-810G, Method 516.6, Procedure I, Category 4
  - Shock:
    - Operating: Mil-STD-810G, Method 516.6, Procedure, Table 516.6
  - IMM: CE/UL Class A, according to EN 55022 & EN 55024

- **PB-2500J-CSM**
  - 8x 100F, 3.0V ultracapacitors
  - Capacity: 2500 watt-second
  - Expected Lifespan:
    - >10 years @ 0°C with 2500 w capacity*
    - >7 years @ 0°C with 2500 w capacity*
    - >5 years @ 0°C with 2500 w capacity*
    - >3 years @ 0°C with 2500 w capacity*
    - >2.5 years @ 0°C with 2500 w capacity*
    - >2 years @ 0°C with 2500 w capacity*
  - Expected Lifespan: 2.2x when configured as 2500 watt-second energy capacity, or 4.8x when configured as 1750 watt-second energy capacity.
  - Lifecycle: 500,000 charging/discharging cycles*
  - Communication interface: 3-wire RS-232
  - Dimension:
    - Half-length PCIe card
  - Weight: 2.2 kg
  - Mechanical:
    - 3-wire RS-232 Communication interface
  - Vibration:
    - Operating: Mil-STD-810G, Method 516.6, Procedure I, Category 4
  - Shock:
    - Operating: Mil-STD-810G, Method 516.6, Procedure, Table 516.6
  - IMM: CE/UL Class A, according to EN 55022 & EN 55024

**Ordering Information**

- **Model No.: PB-2500J-PCIe**
  - Product Description: Intelligent supercapacitor-based power backup PCIe card with 2500 w energy capacity
- **Model No.: PB-2500J-CSM**
  - Product Description: Intelligent supercapacitor-based power backup Cassette module with 2500 w energy capacity, for Nuvo-5000 series
- **Model No.: PB-2500J-CSM7**
  - Product Description: Intelligent supercapacitor-based power backup Cassette module with 2500 w energy capacity, for Nuvo-7000 series

*Note: NOT compatible with Nuvo-6108GC, Nuvo-6108GC/4GN and Nuvo-8208GC

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POC-500 Series

AMR Ryzen™ V1000 Ultra-compact Embedded Controller with 4x PoE+, 4x USB 3.0 and MezIO™ Interface

**Key Features**
- AMR Ryzen™ embedded V1000 series quad-core 15W/ 45W CPU
- -25°C to 70°C rugged wide-temperature operation
- Four Gigabit PoE+ ports with screw-lock
- Four USB 3.0 ports with screw-lock
- M.2 2280 M key NVMe (Gen3 x4) socket for fast storage access
- DVI + VGA dual display outputs
- Front I/O access and DIN-rail mounting design
- MezIO™ compatible

**Introduction**

POC-500 series is the next generation ultra-compact embedded controller offering performances never seen before in its form factor. Featuring AMR Ryzen™ Embedded V1000 4-core/ 8-thread processor, it delivers up to 4x times the CPU performance over previous POC series. GPU performance wise, it delivers an unheard of 3.6 TFLOPS in FP16 for an ultra-compact form factor embedded controller. Another amazing feat is that it manages to incorporate an M.2 2280 NVMe SSD to support 4x times the disk read/write speed over typical 2.5” SATA SSDs.

POC-500 series continues the POC series ingenious DIN-rail mounting mechanical design and offers plenty of front-accessible I/Os. Measuring just 63 x 176 x 116 mm (2.5” x 6.9” x 4.6”), it has 4x PoE+ ports, 4x USB 3.0 ports and 4x COM ports. And best of all, all data ports come with screw-lock mechanism so you can be rest assured that cables are always secured.

POC-500 series is available in two CPU variants, the V1807B (45W) variant is designed for high computing power demand and the V1605B (15W) variant is designed for rugged fanless operation.

The arrival of POC-500 series signifies a new breed of ultra-compact embedded controller; one with better I/O design, extraordinary ruggedness and significantly more CPU/GPU omph for versatile applications.

**Specifications**

**Introduction**

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The arrival of POC-500 series signifies a new breed of ultra-compact embedded controller; one with better I/O design, extraordinary ruggedness and significantly more CPU/GPU omph for versatile applications.
POC-300 Series

Intel® Apollo Lake Pentium® N4200 and Atom® E3950 Ultra-Compact DIN-rail Controller with GbE, PoE and USB3.0

Key Features
- Intel® Apollo Lake Pentium® N4200 and Atom® E3950 quad-core processor
- Fanless, rugged and wide temperature operation (-25°C to 70°C)
- One GbE port and two Gigabit PoE+ ports
- Two USB3.0 and two USB2.0 ports
- DVI + VGA dual display outputs
- Front-accessible I/O
- DIN-rail mounting design
- MezIO™ interface compatible

Introduction
Experience the giant leap in performance of Intel® Apollo Lake Pentium® and Atom™ platform! POC-300 series features the latest Pentium® N4200 and Atom™ x7 E3950 quad-core processor, which offers up to 1.5 times of CPU performance and 3 times the GPU performance improvement compared to previous generation Atom™ E8454 CPU. POC-300 series have an ingenious mechanical design that combines DIN-rail mounting chassis with front-accessible I/O in an ultra-compact enclosure. They have rich computer-like I/Os such as GbE, USB3.0/2.0, COM ports and mSATA storage, in a compact footprint that measures just 5.6 x 15 x 11 cm. IEEE 802.3at PoE+ function is also available on 1 of the 3 GbE ports to power cameras for machine vision or surveillance applications. POC-300 series features Neousys’ MezIO™ interface for easy function expansion via versatile MezIO™ modules.

With Neousys’ proven fanless design heritage, the POC-300 series thrive in harsh environments. Featuring rich I/Os, advanced CPU and compact size, POC-300 series are compelling fanless controllers beneficial for various industrial applications.

Specifications

<table>
<thead>
<tr>
<th>POC-300</th>
<th>POC-310</th>
<th>POC-320</th>
<th>POC-330</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Core</td>
<td>Processor</td>
<td>Intel® Pentium® N4200 1.1 GHz quad-core processor</td>
<td>Intel® Pentium® N4200 1.1 GHz quad-core processor</td>
</tr>
<tr>
<td>Memory</td>
<td>Up to 8GB DDR3L-1600 (single SO DIMM slot)</td>
<td>Up to 8GB DDR3L-1600 (single SO DIMM slot)</td>
<td>Up to 8GB DDR3L-1600 (single SO DIMM slot)</td>
</tr>
</tbody>
</table>

Panel I/O Interface

- Ethernet: 1 x Gigabit (device side) + 1 x Gigabit (controller side)
- PoC: 2x 10/100/1000BASE-T (PoE+ on port #1)
- Video Port: VGA and DVI dual display outputs via DVI-D connector
- USB: 2x USB3.0 ports and 2x USB2.0 ports

Serial Port

- 1x software-programmable RS-232/422/485 ports (COM1)
- 1x Software-programmable RS-232/422/485 ports (COM2)

Audio

- 1x Mic-in and 1x speaker-out

Internal I/O Interface

- MeZoIo
  - 1x full-size mini PCIe Express slot with USIM socket
- Expandable I/O: 1x MezIO™ expansion interface for Neousys MezIO™ modules

Storage Interface

- mSATA: 1x half-size mSATA port

Power Supply

- DC input: 12V or 24V DC input

Mechanical

- Dimension: 56 mm (W) x 153 mm (H) x 108 mm (D)
- Weight: 0.55 kg (incl. CPU, memory and HDD)
- Mounting: DIN-rail mount (standard) or wall mount (optional)

Environmental

- Temperature: Operating: -25°C ~ 70°C with SSD, 100% CPU loading
  - Storage: -40°C ~ 85°C
- Humidity: 10%-90%, non-condensing
- Vibration: Operating: 5G, 5-500 Hz, 3 Axes
  - Shock: Operating: 50G, Half-sine 11 ms Duration
  - Electrical: EN 55022, EN 55024 & EN 55032

Ordering Information

<table>
<thead>
<tr>
<th>Model No</th>
<th>Product Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>POC-300</td>
<td>Intel® Apollo Lake Pentium® N4200 ultra-compact DIN-rail controller with 1xGigabit PoE+ and 2xUSB3.0</td>
</tr>
<tr>
<td>POC-310</td>
<td>Intel® Apollo Lake Pentium® N4200 ultra-compact DIN-rail Controller with 1xGigabit PoE+ and 2xUSB3.0</td>
</tr>
<tr>
<td>POC-320</td>
<td>Intel® Apollo Lake Pentium® N4200 Ultra-Compact DIN-rail controller with 3xGbE and 2xUSB3.0</td>
</tr>
<tr>
<td>POC-330</td>
<td>Intel® Apollo Lake Pentium® N4200 ultra-compact DIN-rail controller with 3xGbE and 2xUSB3.0</td>
</tr>
</tbody>
</table>

Optional Accessories

- FA-69W-DWF: 60W AC/DC power adapter with 120V, 9A DC output, cord and end terminals for terminal block. Operating temperature: -50°C to 60°C
- WinKit-V-POC300: Wall mounting assembly for POC-300 series, vertical type
- WinKit-H-POC300: Wall mounting assembly for POC-300 series, horizontal type
- Cbl-D9F-10DB9M-10CM: 1x DB9(D) Female to 10x DB9(M), length: 10CM

MezIO™ Modules

- Mezo®-C180: Mezo™ module with 6x RS-232/422/485 ports and 4x RS-422/485 ports
- Mezo®-C178: Mezo™ module with 6x RS-232/422/485 ports and 4x RS-422/485 ports
- Mezo®-E220: Mezo™ module with 8x isolated digital input and 8x isolated digital output
- Mezo®-E219: Mezo™ module with 8x isolated digital input and 8x isolated digital output
- Mezo®-E210: Mezo™ module with 8x isolated digital input and 8x isolated digital output
- Mezo®-J4: Mezo™ module with 4x USB
- Mezo®-R11: Mezo™ module with SATA port for 2.5" HDD/SSD
- Mezo®-R12: Mezo™ module with SATA port for 2.5" HDD/SSD, 4x 4CH isolated DI and 4CH isolated DO

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POC-200 Series

Ultra-Compact Atom™ Bay Trail Fanless Embedded Controller with PoE and USB3.0

Key Features

- Ultra-compact 15 cm x 10 cm (6x4") footprint
- Intel® Atom™ E3845 1.91GHz quad-core processor
- Rugged, -25°C to 70°C fansless operation
- Two 802.3at (25.5W) Gigabit PoE+ ports
- Three USB3.0 ports and one USB2.0 port
- One 2.5" SATA HDD/ SSD accommodation
- Up to two RS-232/422/ 485 ports and two RS-232 ports

Introduction

POC-200 is Neousys’ breakthrough ultra-compact controller series. Inheriting the concept of favorable POC-100, POC-200 series features greater computing power and more versatile functions in its 3.5”HDD footprint. The new Intel® Atom™ Bay Trail processor offers dramatic arithmetic and graphics performance improvement. With Atom™ E3845 quad-core processor, POC-200 can deliver more than 200% performance over previous D525 / D2550 platforms. It also features comprehensive I/O interfaces to make use of the advanced computing power. Two Gigabit Ethernet and three USB3.0 ports are integrated so you can connect GigE/ USB3.0 cameras for vision applications. Its IEEE 802.3at PoE+ option is capable of supplying 25.5W each port to power IP cameras for surveillance applications. POC-200 also features up to four COM ports and digital I/O for general-purpose industrial applications.

It’s compact size is another attractive feature of POC-200. The 15 x 10 cm (6"x4") footprint allows installation of POC-200 in confined spaces. While its -25°C to 70°C wide temperature operating capability eliminates the restriction for deployment environment. Neousys provides derivative models with different CPU and I/O configurations so you can always find a POC-200 that is ideal for your application.

Specifications

<table>
<thead>
<tr>
<th>POC-200</th>
<th>POC-210</th>
<th>POC-212</th>
<th>POC-222</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Core</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processor</td>
<td>Intel® Atom™ E3845 1.91 GHz quad-core processor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graphics</td>
<td>Integrated Intel® HD graphics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Memory</td>
<td>Up to 8GB DDR3L-1333 (single SO-DIMM slot) DDRL6, 16GB, up to 8GB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Panel I/O Interface</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethernet</td>
<td>2x Gigabit Ethernet ports by Intel® 82576 GigE controller</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PoE</td>
<td>GbE PoE (PoE+ 25.5W per port)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Video Port</td>
<td>1x HDMI connector for both streaming and DID outputs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serial Port</td>
<td>2x RS-232/422/485 (COM1 &amp; COM3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Audio</td>
<td>1x speaker-out</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIO</td>
<td>8x 4-Ch isolated DI, 4-Ch isolated DO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Panel I/O Interface</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mini PCIe</td>
<td>1x more PCIe Express slot with USIM socket</td>
<td></td>
<td></td>
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</tbody>
</table>

Storage Interface

<table>
<thead>
<tr>
<th>POC-200</th>
<th>POC-210</th>
<th>POC-212</th>
<th>POC-222</th>
</tr>
</thead>
<tbody>
<tr>
<td>SATA</td>
<td>1x internal SATA port for 2.5&quot; HDD SSD</td>
<td>1x internal SATA port with easy- swap HDD tray for 2.5&quot; HDD SSD</td>
<td></td>
</tr>
</tbody>
</table>

Power Supply

| DC Input | 1x 2-pin pluggable terminal block for built-in 8-35 VDC CC input |

Mechanical

<table>
<thead>
<tr>
<th>Dimension (W x D x H)</th>
<th>150mm x 104.7mm x 58 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>1.05 kg (incl. CPU, memory and HDD)</td>
</tr>
</tbody>
</table>

Environmental

<table>
<thead>
<tr>
<th>Temp.</th>
<th>Operating, -25°C ~ 70°C with SSD, 100% CPU loading</th>
<th>Storage, -40°C ~ 85°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humidity</td>
<td>15% ~ 95%, non-condensing</td>
<td>Operating, 5 Grms, 5-500 Hz, 3 Axes</td>
</tr>
<tr>
<td>Vibration</td>
<td>Operating, 5 Grms, Half-sine 11 ms Duration</td>
<td>50 Grms, half-sine 11 ms Duration</td>
</tr>
<tr>
<td>Shock</td>
<td>Operating, 5 Grms, Half-sine 11 ms Duration</td>
<td>50 Grms, half-sine 11 ms Duration</td>
</tr>
<tr>
<td>EMC</td>
<td>EN 55022 Class A, according to EN 55024 &amp; EN 55032</td>
<td></td>
</tr>
</tbody>
</table>

Ordering Information

<table>
<thead>
<tr>
<th>Model No.</th>
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</tr>
</thead>
<tbody>
<tr>
<td>POC-200</td>
<td>Intel Atom™ E3845 ultra-compact controller with 2x RS-232/422/485 ports, 3x USB3.0 ports and 4x COM ports</td>
</tr>
<tr>
<td>POC-210</td>
<td>Intel Atom™ E3845 ultra-compact controller with 2x RS-232/422/485 ports, 3x USB3.0 ports and 4x COM ports</td>
</tr>
<tr>
<td>POC-212</td>
<td>Intel Atom™ E3845 ultra-compact controller with 2x RS-232/422/485 ports, 3x USB3.0 ports and 4x COM ports</td>
</tr>
<tr>
<td>POC-222</td>
<td>Intel Atom™ E3845 ultra-compact controller with 2x RS-232/422/485 ports, 3x USB3.0 ports and 4x COM ports</td>
</tr>
</tbody>
</table>

Optional Accessories

| DINRAIL-P | DIN-rail mounting assembly for POC-200 series |
| PA-60W-OW | 60W AC/DC power adapter with 120, 5A DC output, cord ends terminals for terminal block, Operating temperature: -30 to 60 °C |
POC-120 Series

Rugged Embedded

Ultra-compact Atom™ Bay Trail-I Fanless General-purpose Embedded Controller

Key Features
- Low-profile, ultra-compact 15 cm x 10 cm x 3.4 cm footprint
- Intel® Atom™ E3826 1.46GHz dual-core processor
- Rugged, -25°C to 70°C fanless operation
- Two GigE ports and three USB2.0 ports
- One RS-232/422/485 port and one RS-232 port
- I/O expansion interface for ODM projects
- MezIO™ interface for easy function expansion

Introduction
Introducing Neousys’ ultra-compact POC family! POC-120 is a low-cost, entry-level embedded controller in ultra-compact dimensions. With a height of 3.4 cm, the low-profile chassis is ideal for installation into confined spaces.

POC-120 utilizes Intel® Atom™ E3826 dual-core processor and it provides general I/Os, such as GigE ports, COM ports and USB3.0/USB2.0 ports. For embedded applications, instead using traditional HDD, POC-120 supports mSATA SSD to ensure reliable disk access in harsh industrial environments.

POC-120MZ also features Neousys’ MezIO™ interface for I/O expansion. By customizing a mezzanine board, you can have versatile I/O functions and turn POC-120MZ from an ultra-compact controller into a tailor-made ultra-compact embedded system for your application needs.

Specifications

**System Core**
- Processor: Intel® Atom™ E3826
- Graphics: Integrated Intel® HD graphics
- Memory: Up to 8GB DDR3L-1333 (single SO-DIMM slot)

**I/O Interface**
- Gigabit Ethernet: 2x Gigabit Ethernet ports
- Video Port: 1x VGA connector for both analog and digital RGB output, supporting 2560x1600 resolution
- Serial Port: 1x RS-232/422/485 (COM1), 1x RS-232 (COM2)
- USB: 1x USB3.0 port and 2x USB2.0 ports
- Audio: 1x speaker-out

**Storage Interface**
- mSATA: 1x full-size mSATA socket

**Expansion Bus**
- Expandable I/O (POC-120MZ only): 1x MezIO™ expansion port for Neousys’ MezIO™ modules

**Power Supply**
- DC Input: Built-in 8-35V DC input
- Input Connector: 2-pin spring-clamp terminal block for DC input

**Mechanical**
- Dimension: 105mm (W) x 149mm (D) x 34mm (H) (POC-120)
- Weight: 0.9 kg
- Footprint: 15 cm x 10 cm x 3.4 cm

**Environmental**
- Operating Temperature: -25°C ~ 70°C with SSD, 100% CPU loading **

- Storage Temperature: -40°C ~ 85°C

- Humidity: 10%~90% , non-condensing

- Vibration: Operating, 5 Grms, 5-500 Hz, 3 Axes

- Shock: Operating, 55 Grms, half-sine 11 ms Duration (per SISO, according to EN60068-2-27)

**EMC**
- Categorisation: CE, FCC Class A, according to EN55022 & EN55024

POC-120 Series

**Model No.**
- POC-120: Intel® Atom™ E3826 ultra-compact controller with 2x GbE ports, 3x USB, 2x COM ports
- POC-120MZ: Intel® Atom™ E3826 ultra-compact controller with 2x GbE ports, 3x USB, 2x COM ports and MezIO™ interface

**Optional Accessories**
- DINRAIL-P: DIN-rail mounting assembly for POC-120 series
- PA-60W-OW: 60W AC/DC power adapter with 12V, 5A DC output, cord end terminals for terminal block. Operating temperature: -30 to 60 °C

**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™-R10: MezIO™ module with 2.5" SSD accommodation and 1x mini-PCIe socket

**Ordering Information**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Product Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>POC-120</td>
<td>Intel® Atom™ E3826 ultra-compact controller with 2x GbE ports, 3x USB and 2x COM ports</td>
</tr>
<tr>
<td>POC-120MZ</td>
<td>Intel® Atom™ E3826 ultra-compact controller with 2x GbE ports, 3x USB, 2x COM ports and MezIO™ interface</td>
</tr>
</tbody>
</table>

* Specifications and photos are subject to change without prior notice.

www.neousys-tech.com
ETHY-100-2008S
Ethernet I/O Expansion Module with 8 Isolated Digital Inputs and Outputs

**Key Features**
- Rich I/O combination and decentralization
- Daisy chain for both data and power
- Direct wiring and removable terminal block
- I/O status indicators and user definable button
- Built-in configurable I/O functions

**Introduction**
ETHY-100-2008S is a system expansion I/O module featuring 8 digital input/output and status monitor/indicator. It conforms to the IEEE 802.3at Power Device (PD) specifications and can be driven by a standard Power Sourcing Equipment (PSE). It can be daisy-chained to transfer data and provide power to expand your system while the removable terminal blocks are useful when adding/removing the device into/out of awkward or remote locations. In addition to being a powerful external I/O module, ETHY-100-2008S also provides a friendly application programming interface (API) and designated mechanisms which allow users to configure a responsive automate system that is low in latency and high in performance. ETHY-100-2008S is the best automation solution.

**Specifications**

<table>
<thead>
<tr>
<th>General</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Module Status Indicator</td>
<td>4 LEDs</td>
</tr>
<tr>
<td>I/O Status Indicator</td>
<td>1 LED for each channel</td>
</tr>
<tr>
<td>UOS Connectors</td>
<td>4 removable 3.81 mm connectors</td>
</tr>
<tr>
<td>Communication Interface</td>
<td>2 Ethernet ports</td>
</tr>
<tr>
<td>Digital Input</td>
<td></td>
</tr>
<tr>
<td>Channels</td>
<td>8 channels</td>
</tr>
<tr>
<td>Input Type</td>
<td>Sinking/sourcing, channel-to-channel/isolated</td>
</tr>
<tr>
<td>Input Voltage</td>
<td>Logic Level 0: 0 to 5V</td>
</tr>
<tr>
<td></td>
<td>Logic Level 1: 11 to 30V</td>
</tr>
<tr>
<td>Isolation Voltage</td>
<td>2500 VDC</td>
</tr>
<tr>
<td>Digital Output</td>
<td></td>
</tr>
<tr>
<td>Channels</td>
<td>8 channels</td>
</tr>
<tr>
<td>Output Type</td>
<td>3A</td>
</tr>
<tr>
<td>Rated Output Voltage</td>
<td>24VDC</td>
</tr>
<tr>
<td>Rated Output Current</td>
<td>100mA per channel</td>
</tr>
<tr>
<td>Max. Output Current</td>
<td>500mA</td>
</tr>
<tr>
<td>Isolation Voltage</td>
<td>2500 VDC</td>
</tr>
</tbody>
</table>

**Communication Interface**:
- 2 Ethernet ports

**Digital Input**:
- 8 channels
- Sinking/sourcing, channel-to-channel/isolated
- Logic Level 0: 0 to 5V
- Logic Level 1: 11 to 30V

**Digital Output**:
- 8 channels
- 3A
- 24VDC
- 100mA per channel
- 500mA
- 2500 VDC

**Power**
- PD: IEEE 802.3at PoE+ PD
- DC Input: 24VDC +/-10%
- Power Consumption: 3W

**Mechanical**
- Dimensions: 125.4mm (W) x 101.8mm (H) x 25.9mm (D) (including connectors)
- Weight: 450g

**Environmental**
- Operating Temperature: -25°C ~ 70°C
- Storage Temperature: -40°C ~ 85°C
- Humidity: 10%~90%, non-condensing

**Ordering Information**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Product Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHY-100-2008S</td>
<td>Ethernet I/O expansion module with 8 isolated digital inputs and outputs</td>
</tr>
</tbody>
</table>
IGT-30D/ IGT-31D

T1 Sitara™ AM3352 ARM-based Industrial IoT Gateway with Dual LAN and Pre-installed Debian

Key Features
- Industrial grade ARM-based system with pre-installed Debian
- Certified to operate on Verizon and AT&T network
- Field-ready isolated DI/O and RS-232/422/485
- 10 to 25V wide-range DC input and 802.3at PoE+ PD
- -25°C to 70°C wide temperature operation

Introduction
Neousys IGT-30 series, equipped with AM3352 from Texas Instrument's T1 Sitara AM335x family, is an ARM-based Box PC aimed at Industrial Internet of Things (IIoT) Gateway and Industry 4.0 applications. As required by any industrial applications, IGT-30 series is shipped as a ready system pre-installed with Debian and in compliance with common industrial certifications such as CE/FCC, shock and vibration. It has a power input range of 10 to 25VDC and a wide operating temperature from -25°C to 70°C to ensure IGT-30 continues to function under harsh industrial conditions.

IGT-30 series supports PoE Powered Device (PD) mode meaning it can be powered by a LAN cable from a PoE Power Sourcing Equipment (PSE), and at the same time transfer data via this cable as well. IGT-30 series has I/Os that are applicable to a range of industrial grade sensors. It features one USB2.0 port, two 10/100M LAN ports, one configurable COM port (RS-232/422/485) and an optional CAN bus port. In addition to the ports mentioned, there are 8 built-in isolated digital input channels that accept discrete signals from various sensors or buttons/ switches. There are also 2 built-in isolated digital output channels to control actuators and indicators.

Communication wise, IGT-30 series has a mini PCIe slot and a USIM holder allowing it to transmit acquired data and system status via 3G, 4G or WiFi (mini PCIe WiFi module). There is an opening on top of IGT-30 series for users to mount the SMA connector of the wireless module. In terms of storage, IGT-30 series has dual microSDHC slots, one internal and one external. This design allows users to separate system/ user data and can expedite in OS deployment for mass production.

System Core
- Processor: TI Sitara AM3352 1GHz processor
- Memory: 1GB DDR3L SDRAM

Front-panel I/O Interface
- Ethernet: 2x 10/100 LAN
- SD Card: 1x external T-flash socket support SDHC
- USB: 1x USB2.0
- Isolated DIO: 8-CH isolated DI and 2-CH isolated DO
- Console: 1x 3-wire RS-232 as console port
- User LEDs: 6x user programmable LEDs
- Function Buttons: 2x user programmable buttons
- CAN: 1x isolated CAN bus 2.0 A/B (IGT-31D only)

Top I/O Interface
- DC-in: 1x DC-input connector
- Power Button: 1x power button
- Reset Button: 1x reset button
- Serial Port: 1x software configurable RS-232/422/485
- Antenna Hole: 2x antenna hole for WiFi and 3G/LTE

Internal I/O Interface
- mPCIe: 1x full-size mPCIe (USB signal only) with an USIM holder
- SD Card: 1x internal 7-Flash socket support SDHC

Software
- Operating System: Pre-installed Debian 9
- Power Supply
  - DC input range: 10-25V DC
  - PoE+ PD: Support IEEE 802.3at PoE+ PD

Mechanical
- Dimension: 104mm(W) x 79mm(D) x 51mm(H)
- Weight: 0.3 Kg
- Mounting: 4-hole DIN-rail mounting

Environmental
- Operating Temperature: -25°C ~ 70°C
- Storage Temperature: -40°C ~ 85°C
- Humidity: 10%~90%, non-condensing
- Vibration: 5G, 10-200Hz
- Shock: 25G, 2ms
- EMC: CE/FCC Class B (to be certified, according to EN55032 & EN61000-6-2

Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Product Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IGT-30D</td>
<td>Industrial grade ARM-based IoT gateway with dual LAN and PoE PD enabled</td>
</tr>
<tr>
<td>IGT-31D</td>
<td>Industrial grade ARM-based IoT gateway with dual LAN, CAN bus and PoE PD enabled</td>
</tr>
</tbody>
</table>

Ordering Information
IGT-20 / IGT-21

Industrial Grade ARM-based Smart Wireless IoT Gateway Device with ARM Cortex A8, Dual T-Flash (microSD), and Pre-installed Debian

Key Features
- Industrial grade ARM-based system with pre-installed Debian
- Certified to operate on Verizon and AT&T network
- Operating temperature from -25°C to 70°C
- 8 to 25V wide-range DC input
- Rich local I/O, such as USIM slot, USB, 10/100M LAN, and RS-232/422/485

Introduction

IGT-20 is an industrial grade ARM-based gateway. Unlike System on Module (SoM) that's commonly provided as a barebone component, IGT-20 is based on AM3352 from Texas Instruments’ Sitara AM335x family and will be shipped as a ready system pre-installed with Debian. The industrial nature of IGT-20 means it is in compliance with common industrial certifications such as CE/FCC, shock and vibration. Another distinction IGT-20 has over SoM is that it accepts a wider range of power inputs ranging from 8 to 25 VDC (SoM usually accepts 5 VDC). IGT-20 has I/Os that are applicable to a range of industrial grade sensors. It features one USBD 0, one 10/100M LAN, two configurable COM ports (RS-232/422/485) and an optional CAN bus port (IGT-21 only). In addition to the ports mentioned, there are 4 built-in isolated digital input channels that accept discrete signals from various sensors or buttons/ switches. There are also four built-in isolated digital output channels to control actuators and indicators.

Communication wise, IGT-20 has a mini PCIe slot and a USIM holder allowing it to transmit acquired data and system status via 3G, 4G or WiFi (mini PCIe WiFi module). There is an opening on top of IGT-20 for users to mount the SMA connector of the wireless module. In terms of storage, IGT-20 has dual microSDHC slots, one internal and one external. This design allows users to separate system/ user data and can expedite in OS deployment for mass production. As a gateway, users can take advantage of six programmable status LED indicators and two control buttons to operate IGT-20 without using a keyboard/ mouse.

Specifications

System Core
- Processor: TI Sitara AM3352 1GHz processor
- Memory: 1GB DDR3L SDRAM
- DC Input Range: 8~25V DC

Front-panel I/O Interface
- Ethernet: 1x 1G/100M Ethernet
- SD Card: 1x external T-Flash socket support SDHC
- SIM Card: 1x external SIM socket
- USB: 1x microUSB
- Isolated EIO: 4 CH isolated DI and 4 CH isolated DO
- Console: 1x 3-wire RS-232 or Console Port
- User LEDs: 6x user programmable LEDs
- User Buttons: 2x user programmable buttons
- CAN: 1x CANbus 2.0-A/B (IGT-21 only)

Top I/O Interface
- DC-in: 1x DC-input connector
- Power Button: 1x power button
- Keypad Button: 1x input function
- Serial Port: 2x software configurable RS-232/422/485
- Antenna Hole: 1x antenna hole for WiFi and 3G/4G

Internal I/O Interface
- mPCIe: 1x full-size mPCIe with USBD 0 only
- SD Card: 1x internal T-Flash socket support SDHC
- Software
  - Operating System: Debian 8 pre-installed

Mechanical
- Dimension: 41mm(W) x 77mm(D) x 104mm(H)
- Weight: 0.4 Kg
- Mounting: DIN-rail mounting

Environmental
- Operating Temperature: -25°C ~ 70°C *
- Vibration: 5Grms
- Shock: 50Grms
- EMC: CE/FCC Class A, according to EN 55032

Ordering Information

Model No.
IGT-20 Industrial grade ARM-based IoT gateway
IGT-21 Industrial grade ARM-based IoT gateway with CAN bus

* For all-weather operating requirements, a wide temperature microSD module is required.
Machine Vision
### Nuvis-5306RT Series

**Intel® 6th-Gen Core™ i7/i5 Vision Controller with Vision-Specific I/O, Real-time Control and GPU Computing**

#### Key Features
- Intel® 6th-Gen Core™ i7/i5 65W/35W CPU, up to 32 GB DDR4
- Integrated vision-specific I/O
- 4-CH CCV/IV lighting controller
- 4-CH camera trigger outputs
- 1-CH quadrature encoder input
- 8-CH isolated DI and 8-CH isolated DO
- Patented MCU-based, real-time I/O control by DTIO V2 and NuMCU
- Built-in camera interfaces
  - 4-CH IEEE 802.3at Gigabit PoE+ ports
  - 4-CH USB3.0 ports
- Supports NVIDIA® GPU with up to 75W TDP GPU-accelerated machine vision
- Patented graphic card ventilation

#### Introduction
As one of the most powerful vision controllers ever created, Nuvis-5306RT integrates every single function you need for machine vision applications in a compact footprint, including exceptional computing power, built-in camera interfaces and real-time vision-specific I/O control.

To ensure high quality images, a machine vision (MV) system requires accurate interaction between light, camera, actuator and sensor devices. Nuvis-5306RT integrates LED controller, camera trigger, encoder input, PWMI output and digital I/O to connect and control all vision devices. All vision-specific I/Os are managed by Neousys’ patented MCU-ba-sed architecture and DTIO V2 NuMCU firmware to guarantee microsecond-scale real-time I/O control.

Computing power is another crucial requirement for a vision system. In addition to the remarkable performance brought by its Intel® 6th-Gen Core™ LGA1151 CPU, Nuvis-5306RT can also accommodate a 75W NVIDIA® GPU to leverage GPU-accelerated vision library or deep-learning vision software. Combining built-in PoE+ and USB3.0 interfaces and the expandability for CameraLink and CoaXPress, Nuvis-5306RT is the ideal platform for demanding MV applications.

#### Specifications

<table>
<thead>
<tr>
<th>System Core</th>
<th>Processor</th>
<th>Supports Intel® 6th-Gen Core™ LGA1151 CPU</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>- i7-6700 (8M Cache, 3.4/ 4.0 GHz, 65W TDP)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- i5-6500TE (6M Cache, 2.3/ 3.3 GHz, 35W TDP)</td>
</tr>
<tr>
<td></td>
<td>Chipset</td>
<td>Intel® Q170 platform controller hub</td>
</tr>
<tr>
<td></td>
<td>Graphics</td>
<td>Integrated Intel® HD graphics 120</td>
</tr>
<tr>
<td></td>
<td>Memory</td>
<td>Up to 32 GB DDR4-2133 SDRAM via two SO-DIMM sockets</td>
</tr>
<tr>
<td></td>
<td>TPM</td>
<td>Supports TPM 2.0</td>
</tr>
<tr>
<td>Vision-Specific I/O Interface</td>
<td>LED Lighting Controller</td>
<td>4-CH lighting controller output, supporting Constant current mode (up to 2.4 A per channel, 50 mA dimming control) - Constant voltage mode (4.5 V, 100 kHz dimming control)</td>
</tr>
<tr>
<td></td>
<td>Camera Trigger</td>
<td>4-CH camera trigger output (12 V DC output)</td>
</tr>
<tr>
<td></td>
<td>Digital Input</td>
<td>1-CH isolated high-speed DO (up to 500 mA rated current)</td>
</tr>
<tr>
<td></td>
<td>Digital Output</td>
<td>4-CH isolated high-speed DO (up to 500 mA rated current) - 4-CH isolated high-speed DO (up to 500 mA rated current)</td>
</tr>
<tr>
<td></td>
<td>I/O Control</td>
<td>Patented MCU-based real-time I/O control with DTIO V2 or NuMCU firmware</td>
</tr>
<tr>
<td>General I/O Interface</td>
<td>Ethernet port</td>
<td>6x gigabit Ethernet ports by Intel® 6th-Gen Core™ LGA1151 CPU (up to 1 Gbps)</td>
</tr>
<tr>
<td></td>
<td>PoE</td>
<td>IEEE 802.3at 30/60W PoE+ on 6 Gigabit Port 3 - Port 6, 80 in total power budget</td>
</tr>
<tr>
<td></td>
<td>USB3.0</td>
<td>4x USB3.0 ports via native xHCI controller, 1000 MB/s total bandwidth</td>
</tr>
<tr>
<td></td>
<td>USB2.0</td>
<td>4x USB2.0 ports</td>
</tr>
<tr>
<td></td>
<td>Video Port</td>
<td>1x stacked VGA + DVI connector</td>
</tr>
<tr>
<td></td>
<td>Serial Port</td>
<td>2x software-programmable RS-232/422/485 port (COM1 &amp; COM2)</td>
</tr>
<tr>
<td></td>
<td>Audio</td>
<td>1x 8x4 i2S and 1x Speaker output</td>
</tr>
<tr>
<td>Storage Interface</td>
<td>SATA/2.5&quot; HDD</td>
<td>2x internal 2.5&quot; SATA ports for 2.5&quot; HDD/SSD installation, supporting RAID 0/1</td>
</tr>
<tr>
<td></td>
<td>mSATA</td>
<td>1x full-size mSATA port (may with mini PCIe)</td>
</tr>
<tr>
<td></td>
<td>Expansion Bus</td>
<td>1x PCIe x4 (16 GT/s @ Gen3), 8-lane PCIe signals in Cassetto, supporting -75W NVIDIA® GPU card</td>
</tr>
<tr>
<td></td>
<td>PoE+</td>
<td>4x USB3.0 x4 On/Off Ctrl</td>
</tr>
<tr>
<td></td>
<td>PoE+</td>
<td>1x 10-pin (2x5) wafer connector for remote on/off control and status LED output</td>
</tr>
<tr>
<td></td>
<td>Mechanical</td>
<td>Dimensions: 240 mm(W) x 225 mm(H) x 111 mm(D)</td>
</tr>
<tr>
<td></td>
<td>Vibration</td>
<td>272 Grms, 5 Hz-1500 Hz, 3 Axes (w/ SSD, according to IEC60068-2-64)</td>
</tr>
<tr>
<td></td>
<td>Shaker</td>
<td>100 mm/sum, half sine 11 ms duration</td>
</tr>
<tr>
<td>Environmental</td>
<td>Power Supply</td>
<td>Input: 85 to 265 VAC, 47-63 Hz, output: 12 VDC, 3.3A, 5VDC, 5VSB</td>
</tr>
<tr>
<td></td>
<td>Operating Temperature</td>
<td>-40°C to 70°C</td>
</tr>
<tr>
<td></td>
<td>Humidity</td>
<td>10%~90%, non-condensing</td>
</tr>
<tr>
<td></td>
<td>Vibration</td>
<td>Operating: 5 Grms, 5-500 Hz, 3 Axes (w/ SSD, according to IEC60068-2-64)</td>
</tr>
<tr>
<td></td>
<td>Shaker</td>
<td>Operating: 50 Grms, half sine 11 ms duration</td>
</tr>
</tbody>
</table>

#### Ordering Information

**Model No.**
- Nuvis-5306RT-DTI0: Intel® 6th-Gen Core™ vision controller with vision-specific I/O, real-time control by DTIO V2 and GPU-computing
- Nuvis-5306RT-NuMCU: Intel® 6th-Gen Core™ vision controller with vision-specific I/O, real-time control by NuMCU and GPU-computing

**Optional Accessories**
- PA-160W-DW: 160W AC/DC power adapter 20/18W, 18.4x9.4x1.7cm, cord end terminals for terminal block, operating temperature: -10°C to 50°C
PCIe-PoE550X
2-port 10GbE Network Adapter with IEEE 802.3at PoE+

**Key Features**
- Two 10 GbE ports by Intel® X550-AT2 10 GbE controller
- Gen3 PCI Express x4 interface
- Supports 10GbE with CAT-6a cable (Max. 100 meters)
- Supports 802.3at PoE+ with CAT-6a cable
- Supports 10GBASE-T and 1000BASE-T with CAT-5e/6 and 5e cable
- Compliant with IEEE 802.3at to deliver 25.5W each port
- Supports 15.5 KB jumbo frame, NIC teaming and IEEE 1588
- Per-port PoE+ power on/off control via API

**Introduction**
Introducing the world’s first 10GbE Ethernet NIC incorporating IEEE 802.3at PoE+ capability, featuring Intel® X550-AT2, Neousys Technology’s PCIe-PoE550X offers cost-effective 10GbE solution for growing 10GbE applications. PCIe-PoE550X features 10GbE NIC incorporating Power over Ethernet (PoE+) capability. It features Neousys’ proven 802.3at PoE+ technology and refined power design to ensure optimal signal integrity over 10G PHY and maximal bandwidth. The combination of 10GbE and PoE opens the door to new applications such as high-performance WiFi access points and high-speed high-definition industrial cameras over single Ethernet cable. 10GBASE-T leverages twisted-pair copper cable and RJ45 connector that dramatically reduces the deployment cost of 10G network. PCIe-PoE550X refined power design to ensure optimal signal integrity over 10G PHY and maximal bandwidth. The combination of 10GbE and PoE opens the door to new applications such as high-performance WiFi access points and high-speed high-definition industrial cameras over single Ethernet cable.}

**Specifications**
- Bus Interface: Gen3 PCI Express x4
- # of 10G-Port: 2x 10 GbE ports by Intel® X550-AT2 controller, supporting 15.5 KB jumbo frame, teaming and IEEE 1588
- Network Protocol Support: IEEE 802.3 Ethernet interface for 10GBASE-T (IEEE 802.3an), IEEE 802.1Q and IEEE 802.3ad
- PoE Capability: Optional IEEE 802.3at-2009 (PoE+), up to 25.5 W per port
- Cable Requirement: For 10GBASE-T: CAT 6a (100 meters) or CAT 6 (55 meters)
- Power Requirement: Maximum 11.5W for 2x 10 GbE operation
- EMC: CE Class A, according to IEC 61000-4-2, 4-3, 4-8, FCC Class A
- Operating Temperature: 0°C ~ 60°C with air flow
- Dimension: 167.7 mm (W) x 111.2 mm (H)

**Ordering Information**
- Model No.: PCIe-PoE550X
- Product Description: 2-port 10GbE Network Adapter with IEEE 802.3at PoE+
- Model No.: PCIe-10G550X
- Product Description: 2-port 10GbE Network Adapter

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PCIe-PoE334LP
Low-profile 4-port Server-grade Gigabit PoE+ Card with 1 kV Surge Protection

**Key Features**
- Low-profile form-factor
- 4 ports via Intel® I350-AM4 server-grade GigE controller
- Compliant with IEEE 802.3at to deliver 25.5 W each port
- IEC 61000-4-5 Class 2 surge immunity
- Supports 9.5 KB jumbo frame, teaming and IEEE 1588
- Per-port PoE+ power on/off control via software API

**Introduction**
PCIe-PoE334LP is the latest member of Neousys’ PoE NIC card family. It is the world’s first PoE card to integrate 4-port server-grade GigE controller and 802.3at PoE+ into a low-profile PCIe card. The low-profile form-factor makes PCIe-PoE334LP the perfect solution for commercial off-the-shelf 2U server computers. PCIe-PoE334LP is designed with state-of-the-art Intel® I350-AM4 server-grade GigE controller to offer extraordinary Ethernet performance. It inherits Neousys’ proven PoE technology to power your machine vision cameras and surveillance IP cameras. In addition, PCIe-PoE334LP features solid surge protection design compliant with IEC 61000-4-5 Class 2. It is capable of withstanding 1 kV surge and 8 kV ESD on signal lines. This is particularly valuable for outdoor surveillance system or factory automation equipment where power surge may damage the system through the Ethernet connection. Incorporating low-profile form-factor and robust surge protection, PCIe-PoE334LP defines a new category of PoE card - a compact and yet solid PoE card for servers and rugged industrial applications.

**Specifications**
- Bus Interface: x8, Gen3 PCI Express
- Gigabit Ethernet Port: 4x GigE ports by Intel® I350-AM4 controller, supporting 9.5 KB jumbo frame, teaming and IEEE 1588
- PoE Capability: In compliance with IEEE 802.3at-2009 (PoE+), each port delivers up to 25.5 W of power
- Cable Requirement: CAT-5e or CAT-6 cable, 100 meters maximal
- Power Requirement: Maximum 1.2 A @ 3.3 V from PCI Express bus
- EMC: CE Class A, according to IEC 61000-4-2, 4-3, 4-8, FCC Class A, according to FCC Part 15, Subject 2
- EMS: IEC 61000-4-5 Class 2
- Operating Temperature: 0°C ~ 55°C with air flow
- Dimension: 168 mm (W) x 69 mm (H)

**Ordering Information**
- Model No.: PCIe-PoE334LP
- Product Description: Low-profile 4-port server-grade Gigabit 802.3at PoE+ card with 1 kV surge protection
PCIe-PoE354at/PoE352at

- 4-Port / 2-Port Server-grade Gigabit 802.3at PoE+ Frame Grabber Card

**Key Features**
- x4, Gen2 PCI Express interface (2GB/s total bandwidth)
- Intel® I350 server-grade Gigabit Ethernet controller
- Supports four (354at) or two (352at) independent GigE ports
- Compliant with IEEE 802.3at to deliver 25.5 W each port
- Supports 9.5 kB jumbo frame, teaming and IEEE 1588
- Per-port PoE power on/off control

**Introduction**
PCIe-PoE354at is the world's first PoE frame grabber card combining server-grade GigE controller and 802.3at PoE+ capability. Inheriting Neousys' expertise on PoE technology, PCIe-PoE354at further incorporates the updated 802.3at-2009 standard and offers up to 25.5W of power each port.

PCIe-PoE354at is designed with state-of-the-art Intel® I350 Gigabit Ethernet controller. This server-grade GigE controller incorporates advanced features such as checksum offloading, segmentation offloading and intelligent interrupt generation/moderation to increase overall Ethernet performance and reduce CPU utilization. In addition, its single-bus, multi-port topology minimizes compatibility issues with off-the-shelf motherboards when installing multiple cards.

Machine vision applications can be benefited by PCIe-PoE354at's server-grade network performance. Its 25.5W PoE+ can now power PTZ (pan-tilt-zoom) cameras for surveillance applications. With an excellent cost-per-performance ratio, PCIe-PoE354at is your ideal Power over Ethernet solution.

**Specifications**

<table>
<thead>
<tr>
<th>Bus Interface</th>
<th>PCIe-PoE354at</th>
<th>PCIe-PoE352at</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gigabit Ethernet Port</td>
<td>4x GigE ports by Intel® I350 AM2 controller, supporting 9.5 kB jumbo frame, teaming and IEEE 1588</td>
<td>2x GigE ports by Intel® I350 AM2 controller, supporting 9.5 kB jumbo frame, teaming and IEEE 1588</td>
</tr>
<tr>
<td>PoE Capability</td>
<td>In compliance with IEEE 802.3at-2009 standard, each port delivers up to 25.5W of power</td>
<td></td>
</tr>
<tr>
<td>Cable Requirement</td>
<td>CAT5e or CAT6 cable, 50 meters maximum</td>
<td></td>
</tr>
<tr>
<td>Power Requirement</td>
<td>Maximum 1.2A @ 3.2V from PCIe Express bus</td>
<td>Maximum 0.6A @ 3.2V from PCIe Express bus</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>168 x 111 x 30 mm (3U)</td>
<td>168 x 111 x 30 mm (3U)</td>
</tr>
</tbody>
</table>

**Ordering Information**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Product Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCIe-PoE354at</td>
<td>4-Port Intel® I350-AM2 server-grade Gigabit 802.3at PoE+ Frame Grabber Card</td>
</tr>
<tr>
<td>PCIe-PoE352at</td>
<td>2-Port Intel® I350-AM2 server-grade Gigabit 802.3at PoE+ Frame Grabber Card</td>
</tr>
</tbody>
</table>

PCIe-USB380/USB340

- 8-Port/ 4-Port USB3.0 Host Adapter Card with 4x Independent USB3.0 Controllers

**Key Features**
- x4, Gen2 Express® Gen2 interface (2GB/s total bandwidth)
- 8-port/ 4-port by 4x NEC® Renesas µPD720202 host controllers
- On-board 5V DC regulated power supply, no external power needed
- User-configurable 900mA and 1500mA current limit
- Software-programmable per-port power on/off control
- Supports cable-lock mechanism for reliable cable connection
- Supports Windows XP/ 7/ 8 and Linux
- Compliant with
  - Universal Serial Bus 3.0 specification Rev. 1.0
  - Intel® xHCI specification Rev. 1.0

**Introduction**
Neousys PCIe-USB380/340 is an 8-port/ 4-port USB3.0 host adapter specifically designed for industrial and vision applications. USB3.0 or SuperSpeed USB delivers up to ten times the data rate over USB2.0 and is particularly useful for high-speed data storage and imaging devices.

Most off-the-shelf USB3.0 cards implement multiple ports with a single USB3.0 controller which results in significant performance degradation during multi-port operation. To achieve maximum per-port performance, PCIe-USB380 has four independent NEC® Renesas µPD720202 USB3.0 Host Controllers and xPCI Express® Gen2 interface to offer up to 5 Gbps bandwidth for each port, independently. In addition to transfer data bandwidth advantage, PCIe-USB380/340 features on-board regulated 5V DC power supply with a unique design with configurable 900mA/ 1500mA current limit to supply stable 5V DC power to external USB devices. It also supports software-programmable per-port power on/off control for fault recovery operations.

Combining high bandwidth, industrial-grade power design and reliable cable connection, PCIe-USB380/340 brings convenience to interface USB3.0 devices operating under Windows XP, 7, 8 and Linux.

**Specifications**

<table>
<thead>
<tr>
<th>USB-Ports</th>
<th>PCIe-USB380</th>
<th>PCIe-USB340</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB Connectors</td>
<td>4x panel-accessible USB 3.0 Type-A connectors with 5V screw connectors</td>
<td>4x panel-accessible USB 3.0 Type-A connectors with 5V screw connectors</td>
</tr>
<tr>
<td>Bus Interface</td>
<td>4x NEC® Renesas µPD720202 host controllers</td>
<td>4x NEC® Renesas µPD720202 host controllers</td>
</tr>
<tr>
<td>USB Controller</td>
<td>Compliant with Universal Serial Bus 3.0 specification Rev. 1.0</td>
<td>Compliant with Intel® xHCI specification Rev. 1.0</td>
</tr>
<tr>
<td>USB Per-Port Current Limit</td>
<td>User-configurable 900mA/1500mA per-port current limit</td>
<td></td>
</tr>
<tr>
<td>Power Requirement</td>
<td>Maximum 2.0A @ 3.2V from PCIe Express bus</td>
<td>Maximum 1.2A @ 3.2V from PCIe Express bus for devices</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>15°C – 50°C</td>
<td>Maximum 1.2A @ 3.2V from PCIe Express bus for devices</td>
</tr>
<tr>
<td>Dimension</td>
<td>168 mm (6U) x 111 mm (3U)</td>
<td></td>
</tr>
</tbody>
</table>

**Ordering Information**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Product Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCIe-USB380</td>
<td>8-Port USB3.0 host adapter with 4x independent USB3.0 controllers</td>
</tr>
<tr>
<td>PCIe-USB340</td>
<td>4-Port USB3.0 host adapter with 4x independent USB3.0 controllers</td>
</tr>
</tbody>
</table>

**Optional Accessories**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBL-U3TA-U3MB-300CM</td>
<td>USB3 Type A to Micro-B cable with latched connectors, 300mm length</td>
</tr>
</tbody>
</table>
Nuvo-7100VTC Series

Key Features

- Supports Intel® 8th-Gen Core™ C-7/15/17 LGA1151 socket-type CPU
- 4x or 8x 802.3at Gigabit PoE+ ports via M12 or RJ45 Connectors
- On-board isolated CAN bus for in-vehicle communication
- 4-CH isolated DI and 4-CH isolated DO
- 2x SATA ports with one hot-swappable HDD tray, supporting RAID 0/1
- 2x M.2 B key and 3x full-size mini-PCIe sockets
- 8~35V wide-range DC input with built-in ignition power control
- E-Mark and EN 50155 certificate

Introduction

Nuvo-7100VTC is the latest rugged in-vehicle controller featuring purpose-built set and effortless connectivity, powered by Intel® 8th-Gen Core™ processors with up to 6-core/12-thread architecture and 64GB DDR4 memory that gets a significant performance increase over previous generations for versatile in-vehicle applications.

Nuvo-7100VTC provides flexibility to support a range of peripherals and connections. It offers four or eight 802.3at PoE+ ports to supply 25W power to connected devices such as IP cameras with M12 (x-coded connectors) and connector screw-lock mechanisms on computer I/Os like Gigabit Ethernet, USB3.0 and USB3.1 to guarantee extreme rugged connectivity in shock/vibration environments. Wireless connectivity is essential for connected devices such as IP cameras with M12 (x-coded connectors) and connector screw-lock mechanisms on computer I/Os like Gigabit Ethernet, USB3.0 and USB3.1 to guarantee extreme rugged connectivity in shock/vibration environments. Wireless connectivity is essential for modern day in-vehicle applications and you can simultaneously utilize two M.2 and three mini-PCIe sockets with corresponding wireless modules for 3G/4G, Wi-Fi, GPS, and CAN module for communication. Additionally, there is a 4G cellular module option that is certified to work with renowned US telecommunications company which can save you implementation time and cost.

On top of all that, Nuvo-7100VTC also features isolated CAN bus for in-vehicle communication, isolated DIO for sensor/actuator control, 8~35V wide-range DC input with ignition power control and is in compliance with E-Mark and EN 50155. The Nuvo-7100VTC is the perfect solution with extraordinary reliability for various in-vehicle application needs.

Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Storage Interface</strong></td>
<td></td>
</tr>
<tr>
<td>SATA HDD</td>
<td>1x hot-swappable HDD for 2.5” IDE/2.5” SSD installation</td>
</tr>
<tr>
<td>mSATA</td>
<td>1x full-size mSATA port (for use with mini-PCIe)</td>
</tr>
<tr>
<td>M.2</td>
<td>1x M.2 2280 M key (7pin PCIe Gen3 x4) for PCIe SSD at Intel® Optane™ memory installation</td>
</tr>
<tr>
<td><strong>Expansion Bus</strong></td>
<td></td>
</tr>
<tr>
<td>Mini PCI-E</td>
<td>1x full-size mini PCI Express socket with internal SIM socket (with mPCIe)</td>
</tr>
<tr>
<td>M.2</td>
<td>2x M.2 2280 M key socket, one with two from accessible SIM sockets, supporting dual SIM mode with selected M.2 LTE module</td>
</tr>
<tr>
<td><strong>Power Supply</strong></td>
<td></td>
</tr>
<tr>
<td>DC Input</td>
<td>1x 3-pin plug terminal block for 8-35V DC input (RJ45, GND, V+)</td>
</tr>
<tr>
<td>Remote Ctrl. &amp; Status Output</td>
<td>1x 3-pin plug terminal block for remote control and PWR LED output</td>
</tr>
<tr>
<td><strong>Mechanical</strong></td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>240 x 225 x 45 mm (D x W x H) (D x W x H)</td>
</tr>
<tr>
<td>Weight</td>
<td>3.5 kg</td>
</tr>
<tr>
<td><strong>Environmental</strong></td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40°C to 70°C **</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40°C to 60°C</td>
</tr>
<tr>
<td>Humidity</td>
<td>95%-95%, non-condensing</td>
</tr>
<tr>
<td>Vibration</td>
<td>Operating: Max. 6.5Ms/m, Category 5</td>
</tr>
</tbody>
</table>

Ordering Information

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Product Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuvo-7100VTC</td>
<td>Intel® 8th-Gen Core™ in-vehicle controller with 4x M12 PoE+ Ports, DIO, CAN bus and RAID</td>
</tr>
<tr>
<td>Nuvo-7104VTC</td>
<td>Intel® 8th-Gen Core™ in-vehicle controller with 4x RJ45 PoE+ Ports, DIO, CAN bus and RAID</td>
</tr>
<tr>
<td>Nuvo-7108VTC</td>
<td>Intel® 8th-Gen Core™ in-vehicle controller with 8x RJ45 PoE+ Ports, DIO, CAN bus and RAID</td>
</tr>
</tbody>
</table>

Optional Accessories

<table>
<thead>
<tr>
<th>Option</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBL-M12X8M-4P-500CM</td>
<td>4P (PoE-Ax-x-coded to RJ45, CAT5, length: 500cm)</td>
</tr>
<tr>
<td>CBL-M12X8M-1000CM</td>
<td>1000 cm (PoE-Ax-x-coded to RJ45, CAT5, length: 1000cm)</td>
</tr>
<tr>
<td>PA-120W-0W</td>
<td>120W AC/DC power adapter 20V/5A, 18AWG/120cm, cord and terminals for terminal block, operating temperature: -30 to 70°C</td>
</tr>
</tbody>
</table>

Optional Cellular Module

<table>
<thead>
<tr>
<th>Option</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSIO-LTE-745S</td>
<td>Cat. 6 LTE embedded socket modem</td>
</tr>
</tbody>
</table>
Nuvo-5100VTC Series

Intel® 6th-Gen Core™ i7/i5/i3 In-vehicle Controller with 4x or 8x PoE+ Ports, DIo, CAN bus and RAID

Key Features

- Supports Intel® 6th-Gen Core™ i7/i5/i3 socket-type CPU
- 4x or 8x 802.3at Gigabit PoE+ ports via M12 or RJ45 connectors
- On-board CAN bus for in-vehicle communication
- 4-CH isolated DI and 4-CH isolated DO
- 2x SATA ports with one hot-swappable HDD tray, supporting RAID 0/1
- 4x full-size mini-PCIe sockets with SIM support
- 8-35V wide-range DC input with built-in ignition power control
- EN 50155 certificate & E13 No. 10R-0514321

Introduction

Nuvo-5100VTC is a state-of-the-art in-vehicle controller in compliant with E-Mark and EN 50155 certificate. Featuring Intel® 6th-Gen Core™ CPU, it exhibits superior CPU and GPU performance for various in-vehicle applications. Nuvo-5100VTC offers four or eight 802.3at PoE+ ports to supply 25W power to the connected device. They are implemented using RJ45 or M12 (x-coded connectors), which guarantee extremely rugged connection in shock/vibration environments. Two more Gigabit Ethernet ports by RJ45 are available for data communication. You can also utilize four internal mini-PCIe sockets with corresponding modules for 3G/4G/WiFi/GPS communication.

In addition, Nuvo-5100VTC integrates CAN bus for in-vehicle communication, and isolated DIo for sensor/actuator control. Combining ignition power control and dual-drive RAID storage, Nuvo-5100VTC is the perfect solution for all your in-vehicle application needs.

Specifications

System Core

- Processor: Supports Intel® 6th-Gen Core™ i7/i5/i3 LGA1151 CPU
- Chipset: Intel® Q170 platform controller hub
- Memory: Up to 32GB DDR4 2133-2666 (two SO-CAMM min)

Storage Interface

- mSATA: 1x full-size mSATA port (mzv with mini-PCIe)
- Expansion Bus: 1x full-size mini-PCIe socket with panel-secured SIM socket

Ethernet

- 4x IEEE 802.3at (25.5W) Gigabit PoE+ ports by Intel®

Power Supply

- DC Input: 1x 3-pin pluggable terminal block for 9~28V DC input
- Status Output: 1x 10-pin (2x5) wafer connector for remote on/off control and status LED output

Mechanical

- Dimension: 240 mm (W) x 215 mm (D) x 78 mm (H)
- Weight: 3.3 kg
- Mounting: Neousys® patented clamping bracket (standard) or optional DIN-rail mounting.

Environmental

- Operating Temperature: -40°C ~ 70°C*
- Storage Temperature: -80°C ~ 85°C
- Humidity: 10%~90%, non-condensing
- Vibration: Operating: 5g/Cms, 2g/10-200Hz, 3 Axes (w/ SDO, according to IEC60068-2-64)
- Shock: Operating: 55G, Half-sine 11 ms Duration

Certification

- EN 50155 (Nuvo-5100VTC), E-Mark (Nuvo-5108VTC)

Ordering Information

Model No. | Product Description
--- | ---
Nuvo-5100VTC | Intel® 6th-Gen Core™ i7/i5/i3 in-vehicle controller with 4x M12 PoE+ Ports, DIo, CAN bus and RAID
Nuvo-5104VTC | Intel® 6th-Gen Core™ i7/i5/i3 in-vehicle controller with 4x RJ45 PoE+ Ports, DIo, CAN bus and RAID
Nuvo-5108VTC | Intel® 6th-Gen Core™ i7/i5/i3 in-vehicle controller with 8x RJ45 PoE+ Ports, DIo, CAN bus and RAID

Optional Accessories

- Ch1-M12XHM-RJ45-500CM: M12 (5-pole X-coded) to RJ45, CAT5 length: 500CM
- Ch1-M12XHM-RJ45-1000CM: M12 (5-pole X-coded) to RJ45, CAT5 length: 1000CM
- DINRAIL-O: DIN-rail mounting assembly for Nuvo-5100VTC series
- PA-120W-OW: 120W AC/DC power adapter 20V/6A, 18AWG/120cm, cord and terminals for terminal block, operating temperature: -30 to 70°C
Nuvo-3100VTC is a fanless controller with E-Mark and EN 50155/ EN 50121-3-2 certificate for in-vehicle use. It supports 3rd-Gen i7 quad-core CPU for most in-vehicle computing needs. There are also four IEEE 802.3at PoE+ ports to facilitate Ethernet connectivity and power IP cameras for surveillance applications.

Nuvo-3100VTC takes into account all demands of in-vehicle applications. It has a very compact footprint to fit into restricted space, allows 8-35V wide-range DC input and enhanced surge protection to make Nuvo-3100VTC highly robust when implemented as an in-vehicle system. Nuvo-3100VTC support dual 2.5" hard drives in RAID configuration (RAID 0/1) or alternatively, take advantage of the easy-swap HDD tray for easy HDD replacement (non-RAID configuration). For in-vehicle installation, our patented mounting bracket can absorb shock/vibration and extend overall system reliability.

Combining superior performance, PoE+ and comprehensive design, Nuvo-3100VTC offers more possibilities for in-vehicle applications!

**Key Features**

- Compact dimensions, 212 mm x 165 mm x 62 mm
- Intel® 3rd-Gen i7/i5 PGA-type processor
- 4x IEEE 802.3at (25.5W) Gigabit PoE+ ports
- Dual 2.5" SATA ports with one easy-swap HDD tray
- Patented damping bracket for in-vehicle installation
- 8 ~ 35V wide-range DC input and built-in ignition power control
- 3x mini-PCIe mSATA slots for 3G/ WFI/ GPS module installation
- E13 No. 10R-0413512 and EN 50155/EN 50121-3-2/EN45545 certificate

![Nuvo-3100VTC Series](image)

**Introduction**

Nuvo-3100VTC Series

**In-vehicle Computing**

Intel® 3rd-Gen Core™ i7/i5 Fanless In-vehicle Controller with 4x 802.3at PoE+ Ports and Dual 2.5" Hard Drives with RAID Support

**Specifications**

<table>
<thead>
<tr>
<th>System Core</th>
<th>Nuvo-3100VTC</th>
<th>Nuvo-3110VTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor</td>
<td>Supports Intel® Advanced Core™ - Intel® Core™ i7-3970QE (2.3 GHz, 6.4 GB cache) - Intel® Core™ i5-3610ME (2.7 GHz, 3.4 GB cache) - Intel® Core™ i5-3610ME (2.7 GHz, 3.4 GB cache) - Intel® Core™ i5-3610ME (2.7 GHz, 3.4 GB cache)</td>
<td></td>
</tr>
<tr>
<td>Chipset</td>
<td>Intel® QM77 platform controller hub with XMP &amp; RAID support</td>
<td></td>
</tr>
<tr>
<td>Graphics</td>
<td>Integrated Intel® HD graphics 4000 controller</td>
<td></td>
</tr>
<tr>
<td>Memory</td>
<td>Up to 8GB DDR3 1333/1600 MHz SDRAM</td>
<td></td>
</tr>
</tbody>
</table>

**I/O Interface**

| Ethernet     | 1x Gigabit Ethernet port by Intel® 82579LM, Supporting Wake-on-LAN |
| PoE          | 4x IEEE 802.3at (25.5W) Gigabit PoE+ ports with per-port power on/off control |
| Video Port   | 2x mini-PCIe mSATA slots for 2.5" HDD/ SSD (single SO-DIMM slot) |
| USB          | 4x USB 2.0 ports and 2x USB 3.0 ports |
| Audio        | 1x Mic-in and 1x speaker-out |
| SATA HIDS    | 1x internal SATA port for 3.5" HDD/ SSD & 1x easy-swap HDD tray for 2.5" HDD/ SSD |
| mSATA        | 1x full-size mSATA (SATA x 256GB/446GB) with U.2/2GBM/24W adapter |
| Expansion Bus| 1x full-size mini PCIe express socket with USB/2GBM/24W adapter |
| Mini PCIe     | 1x full-size mini PCIe express socket with USB/2GBM/24W adapter |

**Power Supply & Ignition Control**

| DC Input     | 1x 9-pin pluggable removable block for 9-pin DC input |
| Ignition Control | Ignition power control with over-seeable and off delay |

**Certifications**

- E13 No. 10R-0413512 and EN 50155/EN 50121-3-2/EN45545 certificate
- E-Mark for vehicle applications
- EN 50155/EN 50121-3-2
- CE/ FCC Class A, according to EN 55022, EN 55024 & EN 45545
- IEC60068-2-64)
- IEC60068-2-27)
- IEC60068-2-27)

**Ordering Information**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Product Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuvo-3100VTC</td>
<td>Intel® 3rd-Gen Core™ fanless in-vehicle controller with 4x IEEE 802.3at PoE+ ports and dual-drives RAID</td>
</tr>
<tr>
<td>Nuvo-3110VTC</td>
<td>Intel® 3rd-Gen Core™ fanless in-vehicle controller with 4x GbE ports and dual-drives RAID</td>
</tr>
</tbody>
</table>

**Optional Accessories**

- DINRAIL-31 DIN-rail mounting assembly for Nuvo-3100VTC series
- PA-120W-OW 120W AC/DC power adapter 20V/6A, 18AWG/120cm; cord and terminals for terminal block, operating temperature : -30 to 70°C.

All specifications and photos are subject to change without prior notice
Nuvo-2510VTC Series

Intel® Atom™ Bay Trail In-vehicle Fanless Computer with 2x IEEE 802.3at PoE+ Ports

Key Features
- Intel® Atom™ Bay Trail E3845 quad-core processor
- Dual mPCIe and USIM sockets for 3G, LTE, WLAN, BT or GPS module
- Dual storage with 1x mSATA and 1x SATA
- Intelligent ignition power control
- 1x CAN bus port (CAN 2.0A/ CAN 2.0B compliance)
- 8 to 35V DC wide-range DC input
- Operating temperature from -25° to 70°C
- Patented damping bracket increases stability with HDD
- E13 No. 10R-0513905

Introduction
Nuvo-2510VTC is an in-vehicle fanless computer with Intel® Atom™ E3845 quad-core processor. Equipped with 2 IEEE 802.3at Gigabit Ethernet ports, Nuvo-2510VTC is capable of driving 32W GigE and PoE IP cameras with a single standard CAT-5e. Along with intelligent ignition power control and built-in CAN bus, Nuvo-2510VTC is ideal for lightweight mobile applications such as mobile NVR and mobile APNR.

Designed for in-vehicle applications, Nuvo-2510VTC supports wide-range DC input and can be powered by 12VDC or 24VDC vehicle battery. It features intelligent ignition power control with selectable on and off delay and battery voltage monitoring. Nuvo-2510VTC also supports one built-in CAN bus port with compliance to CAN 2.0A and CAN 2.0B. The CAN bus is the foundation of various vehicle protocols.

Nuvo-2510VTC provides 2 PoE+ Gigabit Ethernet ports and 1 USB3.0 port for industrial-grade cameras on IP cameras. There are also 4 serial ports and 3 USB2.0 ports available. For mobile applications which require data transmission, Nuvo-2510VTC can install two 3G/4G modules with USIMs in its 2 mini PCI Express (mPCIe) sockets. Nuvo-2510VTC is ideal for in-vehicle applications.

Specifications

- **System Core**
  - Processor: Intel® Atom™ Bay Trail E3845 quad-core processor
  - Graphics: Integrated Intel® HD graphics
  - Memory: Up to 8GB DDR3L 1333MHz SDRAM (single SO-DIMM slot)

- **Expansion Bus**
  - Mini PCI-E: 1x full-sized mini PCI Express socket with USIM socket (PCIe + USB)
  - USB3.0: 1x USB3.0 port and 3x USB2.0 ports
  - Power Supply: DC input, 1x 2-pin pluggable terminal block for ignition signal and 8~35V DC input

- **Mechanical**
  - Dimension: 205 mm (W) x 145 mm (D) x 44 mm (H)
  - Weight: 1.9 kg (incl. CPU, memory and HDD)

- **Environmental**
  - Operating temperature: -25°C ~ 70°C with SSD, 100% CPU loading
  - Storage temperature: -40°C ~ 85°C
  - Humidity: 10%~90%, non-condensing
  - Vibration: Operating, 5 Grms, 5-500 Hz, 3 Axes
  - Shock: Operating, 5 Grms, half-sine 11 ms Duration

- **Power Supply**
  - DC Input: 8V~35V DC INPoE+
  - Power Consumption: -25°C ~ 70°C with SSD, 100% CPU loading
  - Storage: -40°C ~ 85°C

- **Input/Output Interface**
  - I/O: 1x DB-9 connector for CAN bus communications
  - USB: 1x DB-9 connector for CAN bus communications
  - Audio: 1x Mic-in and 1x speaker-out
  - Video Port: 1x DVI-I connector with DVI-D output
  - Serial Port: 2x software-programmable RS-232/422/485 (COM1 & COM2)
  - PoE Port: Front Panel I/O Interface
  - Memory: Up to 8GB DDR3L 1333MHz SDRAM (single SO-DIMM slot)
  - Processor: Intel® Atom™ Bay Trail E3845 quad-core processor
  - Graphics: Integrated Intel® HD graphics

- **Memory**
  - Up to 8GB DDR3L 1333MHz SDRAM (single SO-DIMM slot)

- **Vibration**
  - Operating, 5 Grms, 5-500 Hz, 3 Axes

- **Shock**
  - Operating, 5 Grms, half-sine 11 ms Duration

- **Certification**
  - CE: EN 55022 & EN 55024
  - CC: FCC Class A
  - E-Mark for vehicle applications

- **Ordering Information**
  - Model No.: Nuvo-2510VTC
  - Product Description: Intel® Atom™ E3845 in-vehicle fanless computer with 2x IEEE 802.3at PoE+ ports

Optional Accessories

- DINRAIL-25: DIN-rail mounting assembly for Nuvo-2510VTC series
- PA-60W-OW: 60W A/C power adapter with 12V, 5A DC output, cord end terminals for terminal block, operating temperature: -30 to 60°C

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POC-351VTC Series
Intel® Apollo Lake Atom™ E3950 Ultra-compact In-vehicle Controller with GbE, PoE+ and isolated CAN bus

Key Features
- Intel® Apollo Lake Atom™ E3950 quad-core processor
- Rugged, optional -40 °C to 70 °C fanless operation
- Two IEEE 802.3at PoE+ ports and one GbE port
- One isolated CAN bus port for in-vehicle communication
- One M.2 socket and three mPCIe sockets
- Aluminum heat-spreader for M.2/mPCIe modules
- 4-Ch isolated DI and 4-Ch isolated DO
- 8~35V DC input with built-in ignition power control

Introduction
POC-351VTC is an ultra-compact, fanless in-vehicle controller powered by Intel® Apollo Lake Atom™ E3950 quad-core processor. It combines fine performance, extraordinary reliability and affordability for various in-vehicle applications. POC-351VTC offers two PoE+ ports to power devices such as IP cameras, and one additional GbE port for data communication. It also features isolated CAN bus 2.0 port and ignition power control make POC-351VTC fit for various vehicle types.

Wireless and internet access is essential for modern day in-vehicle applications and POC-351VTC has a total of four M.2/mPCIe sockets and six antenna holes to accommodate a variety of 4G, 3G, WiFi and GPS modules. An aluminum heat-spreader is thoughtfully designed to dissipate the heat generated by modules to maintain superior operating stability, for the system and communication modules.

Specifications
System Core
- Intel® Apollo Lake Atom™ E3950 for 2.4 GHz quad-core processor
- Graphics: Integrated Intel® HD graphics 550
- Memory: Up to 8GB DDR3 1600 SODIMM (single SO-DIMM slot)

Ethernet
- 2x Gigabit Ethernet ports by Intel® GbE controller
- IEEE 802.3at PoE+ on port #2 and #3
- 3x Gigabit Ethernet ports by Intel® I210 GbE controller

Audio
- 1x software-programmable RS-232/221/422/485 ports (COM1)
- 2x 3-wire RS-232 ports (COM2/COM3/COM4) or 1x RS-422/485 port (COM4)
- 1x software-programmable RS-232/422/485 ports (COM1)
- 2x 3-wire RS-232 ports (COM2/COM3/COM4) or 1x RS-422/485 port (COM4)

Serial Port
- 1x isolated DIO
- 4-CH isolated DI and 4-CH isolated DO

USB
- 2x USB3.0 ports and 2x USB 2.0 ports

Video Port
- 1x DVI/ VGA

Memory
- 1x full-size mSATA port

Storage Interface
- 1x full-size mSATA port

Power Supply
- DC Input: 8~36 VDC
- Input Connector: 5-pin plugable terminal block for DC input (IGN/GND/V+/-/5V)

Mechanical
- Dimension: 153 mm (W) x 108 mm (D) x 56 mm (H) (POC-351VTC)
- Dimension: 153 mm (W) x 108 mm (D) x 68 mm (H) (POC-351VTC-70)
- Weight: 1.0 kg (POC-351VTC)
- Weight: 1.1 kg (POC-351VTC-70)

Environmental
- Operating Temperature: -20°C ~ 70°C (optional)****
- Storage Temperature: -40°C ~ -60°C

EMC
- CE/ FCC Class A, according to EN 55032 & EN 55024 (with mSATA, according to IEC60068-2-27)
- E-Mark for in-vehicle applications

Shock
- 15G RMS, 11ms Half-sine

Vibration
- 10%~90%, non-condensing

Mounting
- Horizontal wall mount (standard) or vertical wall mount (optional)

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**Key Features**

- Supports Intel® 6th Gen Core™ i7/i5/i3 LGA1151 socket-type processor
- 8 x PoE+ ports and 2x GbE ports
- 2x 3.5" HDD accommodation, support RAID 0/1 with over 24 TB capacity
- Dedicated HDD heat-spreaders for optimized thermal performance
- 4x full-size mini-Pcie sockets with SIM support
- 4-CH isolated DI and 4-CH isolated DO
- 1x CAN 2.0 port
- 8~35V wide-range DC Input with built-in ignition power control
- Patented damping brackets* to withstand 1 Grms Vibration

**Introduction**

Nuvo-5608VR is Neousys’ latest fanless surveillance system designed for real-time video analysis and streaming. It incorporates 6th Gen Core™ i7 CPU, IP camera connectivity and massive storage capacity for emerging intelligent surveillance/security applications.

**Specifications**

**System Core**
- Supports 6th Gen Intel® Core™ i7/i5/i3 LGA1151 CPU
- Intel® Core™ i7-6820EQ (8M Cache, 3.4 GHz, 85W TDP)
- Intel® Core™ i5-6500TE (6M Cache, 2.3 GHz, 35W TDP)
- Intel® Core™ i3-6100TE (4M Cache, 2.3 GHz, 35W TDP)
- Intel® 1600 chipset

**Processor**
- Intel® Core™ i7-6820EQ (8M Cache, 3.4 GHz, 85W TDP)
- Intel® Core™ i5-6500TE (6M Cache, 2.3 GHz, 35W TDP)
- Intel® Core™ i3-6100TE (4M Cache, 2.3 GHz, 35W TDP)
- Intel® Core™ i7-i5-i3 LGA1151 CPU

**Chassis**
- Intel® Q170 platform controller hub

**Graphics**
- Integrated Intel® HD graphics 530

**Memory**
- Up to 32 GB DDR4-2133 SDRAM (two SO-DIMM slots)

**CPU**
- Supports AMT 11.0

**I/O Interface**
- 2x Gigabit Ethernet ports by Intel® X540 (2x 10/100/1000 Mbps)
- 1280W total power budget*
- 4x USB 3.0 (2x USB 3.0, 2x USB 2.0)
- 2x DisplayPort connectors, supporting 4K2K resolution
- 2x serial/parallel connectors
- 2x software-programmable RS-232/422/485 ports
- 2x RS-322 ports (COM1 & COM3)

**Video Port**
- 1x stacked SIM = SIM-0 connector

**Serial Port**
- 1x full-size mini-PCIe socket with panel-attached SIM socket

**Audio**
- 1x Mic-in and 1x speaker-out

**Storage Interface**
- 2x internal SATA ports for 3.5" HDD installation, supporting RAID 0/1
- 1x full-size mSATA port (with mini-Pcie)

**Expansion Bus**
- 1x full-size mini-Pcie socket with panel-attached SIM socket
- 1x full-size mini-Pcie socket with internal SIM socket
- 4x full-size mini-Pcie sockets supports wireless module with internal SIM sockets

**Power Supply**
- 1x 3-pin pluggable terminal block for 8/12/24 DC-input

**Environmental**
- -40°C ~ 85°C
- -25°C ~ 70°C (with mSATA/SSD)
- -25°C ~ 50°C (with 3.5" HDD)

**Ordering Information**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Product Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuvo-5608VR</td>
<td>Intel® 6th Gen Core™ fanless surveillance system with 8x PoE-P ports, DIN, CAN bus and 2x 3.5&quot; HDD RAID</td>
</tr>
</tbody>
</table>

**Optional Accessories**

- PA-1600-012: 280W AC/DC power adapter 240V/120V 1.7A, for end-terminals for terminal blocks, operating temperature: -30 to 70°C
- PA-3008-012: 160W AC/DC power adapter 200V/100V 1150W/6580W, for end-terminals for terminal blocks, operating temperature: -30 to 60°C
EDX-104 Series

5-port IEEE 802.3at PoE+ Gigabit Unmanaged Industrial Ethernet Switch with PoE+ PD and DC Dual Power Input

Key Features
- Five 10/100/1000 Mbps Ethernet ports
- Supports IEEE 802.3at PoE+ PSE on port 2~5
- Up to 25.5 W power output on each port, total 80W power budget
- Dual power input
- PoE+ PD (Powered Device) mode via port 1
- 24/48 VDC input with power connector
- EMS level 3 protection for industrial environments
- Industrial-grade, -25°C to 70°C fanless operation
- IP50 (EDX-104J) housing

EDX-104 series is the world's first PoE+ unmanaged switch combining IEEE 802.3at PSE/PD capability and fanless enclosure for IP protection. It offers five Gigabit Ethernet ports compliant with 802.3 (10BASE-T), 802.3u (100BASE-TX) and 802.3ab (1000BASE-T). Four of its ports support 802.3at PoE+ PSE (Power Sourcing Equipment) capability and can deliver up to 25.5W to PoE PD on each port. The dual power mode feature is what makes EDX-104 unique. It can operate as a PoE+ PD by simply power it using a Ethernet cable from a PSE. Or, when PSE is not available, you can plug in 24/48V DC and EDX-104 becomes a PSE. The option of operating in PSE or PD mode offers setup and installation flexibility.

EDX-104 series features EMS level 3 protection, wide-temperature -25°C to 70°C fanless operation and IP protection, EDX-104 is the ideal simple and rugged Ethernet switch for your industrial applications.

Specifications

PoE Standard
- IEEE 802.3at PSE (port 2~5)
- IEEE 802.3at PD (port 1)

Ethernet Standard
- IEEE 802.3 for 10BASE-T
- IEEE 802.3u for 100BASE-TX
- IEEE 802.3ab for 1000BASE-T
- IEEE 802.3x for flow control

Switch Features
- MAC table size: 8192 entries
- Frame buffer memory: 1 MB
- Jumbo frame support: 15 KB

Power Input (PD Mode)
- Via Ethernet port 1 (RJ45), total power budget for PSE: 25.5W

Power Input (DC Mode)
- 24/48VDC, via 3-pin terminal block, total power budget for PSE: 80W

IP Rating
- IP50

EMC
- CE/FCC Class A, according to EN 55022 & EN 55032
- EN 55026-2-1:2019

EMS
- EN 61000-4-2 (Level 3), EN 61000-4-3 (Level 3), EN 61000-4-4 (Level 3), EN 61000-4-5 (Level 3), EN 61000-4-6 (Level 3), EN 61000-4-8 (Level 3)

Operating Temperature
- -25°C to 70°C

Vibration
- Operating: 5G rms, 5-500 Hz, 2 Axes, according to IEC68-2-64
- Shock: Operating, 50G Grms, half-sine 11 ms duration, according to IEC68-2-27

Dimension
- 40.1mm (W) x 91.5mm (D) x 138.7mm (H)

Weight
- 0.5kg

Mounting
- DIN-rail mounting

Ordering Information

Model No.
- EDX-104J

Product Description
- 5-port IEEE 802.3at PoE+ unmanaged Gigabit Ethernet switch with PD/DC, dual power mode, RJ45 connector and IP50 housing

Optional Accessories

PA-280W-ET2
- 280W AC/DC power adapter 24V/11.67A/154W/200cm, cord end terminals for terminal block, operating temperature: -30°C to 60°C.
Nuvo-8208GC

Key Features
- Supports dual 250W NVIDIA® graphics cards up to 28 TFLOPS in FP32
- Supports Intel® Xeon® E or 8th-Gen Core® i7/i5 LGA1151 CPU
- Up to 128GB ECC/non-ECC DDR4 2133 (4x SODIMM)
- Two x8, one x4, Gen3 PCIe slots for add-on cards
- Two hot-swappable 2.5" SATA HDD/SSD with RAID 0/1 support
- 8-35V wide-range DC input with built-in ignition power control
- Patented thermal design for -25°C to 60°C rugged operation
- Patented damping brackets to withstand 1 gms vibration

Introduction
Nuvo-8208GC is the world’s first dual GPU platform with industrial-grade design and in-vehicle features. Designed specifically to support two high-end 250W NVIDIA® graphics cards, it offers tremendous GPU power up to 28 TFLOPS in FP32 for emerging GPU-accelerated edge computing, such as autonomous driving, vision inspection and surveillance/security.

Nuvo-8208GC is powered by Intel® Xeon® E or 8th-Gen Core® 6-core/12-thread CPUs coupled with workstation-grade Intel® C246 chipset to support up to 128 GB ECC or non-ECC DDR4 memory. The system incorporates two hot-swappable 2.5" trays for easy HDD/SSD replacement and an M.2 2280 NVMe socket for the ultimate disk performance. Its front-accessible GbE and USB 3.1 Gen1/Gen2 ports feature screw-lock mechanisms for securing cable connections. In addition to the dual x16 PCIe slots for GPU installation, Nuvo-8208GC has two other x8 PCIe slots and one x4 PCIe slot for expansion cards to extend function sets like data collection, analytics and communication.

Nuvo-8208GC has a brand new power delivery design to accept 8~35V wide-range DC input and to handle heavy power requirements from dual 250W GPUs. Along with built-in ignition control, it’s feasible to deploy it on a vehicle and directly power it via the car’s power system. Mechanical, Nuvo-8208GC incorporates Neousys’ patented heat dissipation design*, damping brackets* and patent-pending GPU press bar, making it steady and rock-solid in various conditions.

The Nuvo-8208GC is Neousys’ response to the never-ending demand of TFLOPS in industrial GPU platforms. With industrial-grade power, thermal and mechanical design, it pushes versatile AI inference applications from laboratories to field applications, where reliability matters.

Specifications

<table>
<thead>
<tr>
<th>System Core</th>
<th>Processor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supporting Intel® Xeon® E or 8th-Gen Core® LGA1151 socket</td>
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</table>

<table>
<thead>
<tr>
<th>Graphics</th>
<th>Chipset</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent GPU + x16 PCIe port, as integrated Intel® UHD Graphics 630</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Memory</th>
<th>AXI</th>
</tr>
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<tbody>
<tr>
<td>Up to 128 GB ECC/ non-ECC DDR4 2133 SODIMM (four SODIMM slots)</td>
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</table>

<table>
<thead>
<tr>
<th>I/O Interface</th>
<th>TPK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supports TPK 2.0</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>I/O Interface</th>
<th>Ethernet</th>
</tr>
</thead>
<tbody>
<tr>
<td>1x Gigabit Ethernet port by Intel® 8121EN</td>
<td></td>
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<table>
<thead>
<tr>
<th>Native Video Port</th>
<th>Audio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1x VGA connector, supporting 1920 x 1200 resolution</td>
<td></td>
</tr>
<tr>
<td>1x DVI-D connector, supporting 1920 x 1200 resolution</td>
<td></td>
</tr>
<tr>
<td>1x DisplayPort connector, supporting 4096 x 2160 resolution</td>
<td></td>
</tr>
<tr>
<td>1x Speaker-out</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Storage Interface</th>
<th>SATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>2x hot-swappable HDD trays for 2.5&quot; HDD/SSD installation</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>M.2</th>
<th>mSATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1x M.2 2280 key receptacle and PCIe slot for hot swapping and SSD or Intel® Optane™ memory installation</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Expansion Bus Internal I/O Interface</th>
<th>PCIE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2x PCIe x4 slot (Gen3, 4 lanes)</td>
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</table>

<table>
<thead>
<tr>
<th>Power Supply</th>
<th>DC Input</th>
</tr>
</thead>
<tbody>
<tr>
<td>2x 4-pin-pluggable terminal block for B-35V DC input and 1x 3-pin ignition control</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Mechanical</th>
<th>Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>234.98 mm (HDD, WDT, UID, PWR)</td>
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</table>

<table>
<thead>
<tr>
<th>Ordering Information</th>
<th>Model No.</th>
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<tbody>
<tr>
<td>Nuvo-8208GC</td>
<td>Industrial-grade GPU computing platform supporting dual 250W NVIDIA® graphics cards, Intel® Xeon® E or 8th-Gen Core® processor with B-35V DC input and ignition control</td>
</tr>
</tbody>
</table>

*NEC Patent No. M534371 / M491752

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

***Temperature degrades with higher TDP CPU. For detail testing criteria, please contact Neousys Technology.

****For sub-zero operating temperature, a wide temperature HDD drive or Solid State Drive (SSD) is required.
**Nuvo-7164GC Series**

Ruggedized AI Inference Platform Supporting NVIDIA Tesla P4/T4 and Intel® 8th-Gen Core™ Processor

---

**Key Features**

- Supports NVIDIA Tesla P4/T4 GPU
- Dedicated heat dissipation for -25°C to 60°C wide-temperature operation
- Intel® 8th-Gen Core™ hexa-core 35W/65W LGA1151 CPU
- 6x GigE ports, 802.3at PoE+ option available (ports 3~6)
- M.2 2280 M key NVMe (Gen3 x4) socket for fast storage access
- 4x USB 3.1 Gen2 ports and 4x USB 3.1 Gen1 ports
- Accommodates two 2.5" SATA HDD/SSD with RAID 0/1 support
- MezIO™ Interface for easy function expansion

---

**Introduction**

Nuvo-7164GC is a rugged AI inference platform designed for advanced inference acceleration applications such as voice, video, and recommendation services. It supports NVIDIA® Tesla P4 GPU, featuring 5.5 TFLOPS in FP32 and Tesla T4 GPU, featuring 8.1 TFLOPS in FP32 and 130 TOPS in INT8 for real-time inference based on trained neural network model. In addition, it supports Intel® 8th-Gen Coffee Lake Core™ 6-core/12-thread CPU and 64 GB DDR4-2666, offering great balance between CPU, GPU and memory performance.

Thanks to Neousys' patented Cassette and air tunnel design, which guides the intake air to flow through the passive heat sink of NVIDIA® Tesla P4/T4, Nuvo-7164GC is capable of effectively dissipating the heat generated by the GPU. This promising design guarantees system operation of up to 60°C ambient temperature with sustained 100% GPU loading.

Nuvo-7164GC also incorporates cutting-edge I/O technologies to boost overall system flexibility, functionality and performance. It has an M.2 NVMe interface that supports disk read/write speeds over 2000 MB/s and USB 3.1/GbE ports for fast data transfer, such as acquiring HD video data. With the combination of a fast CPU and inference accelerator GPU, Nuvo-7164GC is the ideal inference platform for artificial intelligence applications.

---

**Specifications**

**System Core**

- Processor: Supporting Intel® 8th-Gen Coffee Lake CPU: 3.9GHz/1515 socket, 65W/ 95W TDP
- - Intel® Core™ i7-8700/8700T CPU
- - Intel® Core™ i5-8500/8500T CPU
- Chipset: Intel® Q370 platform controller hub

**Graphics**

- NVMe interface that supports disk read/write speeds over 2000 MB/s and USB 3.1/GbE ports for fast data transfer, such as acquiring HD video
- 8-core/16-thread CPU and 64 GB DDR4-2666, offering great balance between CPU, GPU and memory performance.

---

**Internal Expansion Bus**

| PCI Express | 1x PCIe x16 (Gen3/4), 16-lanes PCIe signals in Cassette for installing NVIDIA Tesla P4/T4 GPU |
| PCI Express | 1x full-size PCIe Express socket with internal SMI socket (with mSATA) |
| Mini PCIe Express | 1x full-size Mini PCIe Express socket with internal SMI socket (with mSATA) |

---

**Power Supply**

- DC Input: 1x 3-pin pluggable terminal block for 8~48VDC DC input
- Remote Ctrl. & LED Output: 1x pluggable terminal block for remote control and PWM Analog output

---

**Mechanical**

- Dimension: 240 mm(W) x 225 mm(D) x 111 mm(H)
- Weight: 6.5 kg (including CPU, GPU, memory and HDD)
- Vibration: All axes <2.5 mm/peak (20–400 Hz)

---

**Environmental**

- Operating Temperature: with 35W CPU (Gen3), 65W CPU (Gen4) and Kepler/Cloake/Tesla GPU 25°C – 80°C, 95% RH non-condensing
- Storage Temperature: -40°C – 85°C non-condensing

---

**Optional Accessories**

- Optional IEEE 802.3at PoE+ for GbE ports 3 ~ 6

---

**MezIO™ Modules**

- MezIO™ -C180: MezIO™ module with 4x RS-232/422/485 ports and 4x RS-422/485 ports
- MezIO™ -C181: MezIO™ module with 4x RS-232/422/485 ports and 4x RS-422/485 ports
- MezIO™ -D20: MezIO™ module with 8x I2C isolated digital input and 8x CH isolated digital output
- MezIO™ -G20: MezIO™ module with 16x I2C isolated digital input and 16x CH isolated digital output

---

**Ordering Information**

**Model No.**

- Nuvo-7164GC: Intel® 8th-Gen Core™ AI inference platform with 6x GbE and MezIO™ interface, supporting NVIDIA® Tesla P4/T4 GPU

---

**Dimensions**

<table>
<thead>
<tr>
<th>Unit: mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width: 225 mm</td>
</tr>
<tr>
<td>Depth: 110 mm</td>
</tr>
<tr>
<td>Height: 240 mm</td>
</tr>
</tbody>
</table>

---

**Neousys’ patented damping bracket assembly for Nuvo-7160GC/ Nuvo-7164GC**

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**GPU Computing**

Nuvo-7164GC is capable of effectively dissipating the heat generated by the GPU. This promising design guarantees system operation of up to 60°C ambient temperature with sustained 100% GPU loading.

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Nuvo-7160GC is a ruggedized GPU-aided edge computer designed for modern machine learning applications such as autonomous driving, facial recognition and machine vision. It supports up to a 120W GPU, delivering 4-6 TFLOPS computing power for inference, as well as Intel® 8th-Gen Core™ 6-core/12-thread CPU, offering up to 50% CPU performance enhancement over previous generations.

Thanks to Neousys’ patented Cassette design and ingenious ventilation mechanism, Nuvo-7160GC can effectively dissipate the heat generated by the GPU. By introducing the guided airflow from intake to exhaust with powerful fans featuring smart fan control, it allows a 120W GPU to operate at 60°C ambient temperature under 100% GPU loading.

Nuvo-7160GC incorporates rich I/O functions such as USB 3.1 Gen2/Gen1, GbE, COM and MezIO™ interface in its restricted footprint. It also supports Intel® Optane™ memory for the ultimate system acceleration. Neousys Nuvo-7160GC is the ideal solution for emerging edge computing by combining exceptional CPU and GPU performances.

**Key Features**
- Supports NVIDIA® GPU graphics card up to 120W TDP
- Patented thermal design to allow -25°C to 60°C wide-temperature operation
- Intel® 8th-Gen Core™ hexa-core 65W/35W LGA1151 CPU
- 6x GigE ports, supporting 9.5 KB jumbo frame
- M.2 2280 M key socket (Gen3 x4) supporting NMVe SSD or Intel Optane™ memory
- 4x USB 3.1 Gen2 ports and 4x USB 3.1 Gen1 ports
- Accommodates two 2.5” SATA HDD/ SSD with RAID 0/1 support
- Compatible with MezIO™ interface for function expansion
- Patented ventilation design® for graphics card

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**Introduction**

**Nuvo-7160GC Series**

Ruggedized GPU-Computing Platform Supporting 120W NVIDIA® GPU and Intel® 8th-Gen Core™ Processor

---

**Specifications**

**System Core**
- Processor: Supporting Intel® 8th Gen Coffee Lake CPU (LGA1151 socket, 15W/35W TDP)
- Intel® Core™ i5-8400T (1151)
- Intel® i3-8100 (1151)
- Chipset: Intel® D270 platform controller hub

**Video Port**
- Graphics: 2x DisplayPort connector, supporting 4096 x 2304 resolution
- 1x DVI-D connector, supporting 1920 x 1200 resolution
- 1x PCIe x16 slot for dual SIM mode with selected M.2 LTE module

**Storage Interface**
- 2x software-programmable RS-232/422/485 ports (COM1/COM2)
- 1x PCIe x1 (mux with mSATA)

**USB**
- 4x USB 3.1 Gen2 (10 Gbps) ports

**PoE+**
- Optional IEEE 802.3at PoE+ for GbE ports 3 ~ 6

**I/O Interface**
- 6x GigE Ethernet ports by I219 and 5x I210
- 6x Gigabit Ethernet ports by I219
- 1x PCIe x16 slot for dual SIM mode with selected M.2 LTE module

**Power Supply**
- DC Input: 8V~35V DC IN
- Weight: 4.5 Kg (including CPU, GPU, memory and HDD)

---

**Environmental**

**Temperature**
- Operating: With 35W CPU and 120W GPU
- Storage: -40°C ~ 85°C

**Humidity**
- Operating: 10% - 80% non-condensing
- Storage: 95% non-condensing

**Vibration**
- Operating: 0.35G at 5-350Hz, Method 106A, Category A
- Shock: Operating: 16G at 5-350Hz, Method 206A, Procedure L, Table 5.6.4.6

---

**Ordering Information**

**Model No.**
Nuvo-7160GCRG series: GPU computing platform with Intel® GBE and MezIO™ interface, supporting selected NVIDIA® 120W GPU

**Optional Accessories**
- PA-280W-D230: 280W AC/DC power adapter 24VUL/ELT, 16AWG/100cm; card and terminals for terminal block, operating temperature: -30°C to 60°C
- MezIO™ Modules
  - MezIO-C180: MezIO™ module with 8x RS-232/422/485 ports and 4x RS-422/485 ports
  - MezIO-V20: MezIO™ module with ignition power control function for in-vehicle application

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Nuvo-5095GC opens a new chapter for industrial computers. As the first embedded controller targeted at emerging applications of CUDA computing, autopilot, deep learning and virtual reality, Nuvo-5095GC integrates all features required for a compact, reliable and powerful GPU computing platform. Supporting 75W NVIDIA® GPU (e.g. GTX 1050 Ti), Nuvo-5095GC possesses 768 CUDA cores to deliver tremendous computing power for arithmetic/graphics operations. Neousys' patented Cassette technology and innovative thermal design help to effectively dissipate the heat generated by GPU, thus make this compact system capable of operating reliably at 60°C with 100% GPU loading.

Nuvo-5095GC is based on Intel® Skylake platform, supports 38W 65W 6th-Gen Core® processors and up to 32GB DDR4 memory. It offers rich I/O functions, such as GbE, USB 3.0 and COM ports, to connect external devices. All these extraordinary features are integrated into a very compact, 240 x 225 x 111 mm footprint. For fast-growing GPU-computing applications, Nuvo-5095GC presents the first industrial-grade, compact and rugged GPU Computing platform incorporating CPU and GPU to offer performance far beyond traditional industrial computers.
**Introduction**

The Nuvo-6108GC series is world's first industrial-grade GPU computer supporting high-end graphics cards. It’s designed to fuel emerging GPU-accelerated applications, such as artificial intelligence, VR, autonomous driving and CUDA computing by accommodating 250W NVIDIA GPU. Leveraging Intel C236 chipset, Nuvo-6108GC series supports Extreme Intel Core™ Xeon® E5 v5 or E5 v6 Gen Core™ i7/i5 GPUs with up to 32 GB ECC/ non-ECC DDR4 memory. It incorporates general computer I/O like Gigabit Ethernet, USB3.0 and serial ports. In addition to the x16 PCIe port for GPU, Nuvo-6108GC series also has two x8 PCIe slots so you can install additional high performance expansion cards with high bandwidths for data collection analytics and communication. Nuvo-6108GC series comes with sophisticated power design to handle heavy power consumption and power transient of a 250W GPU. Furthermore, to have reliable GPU performance for industrial environments, Nuvo-6108GC series utilizes Neousys’ patented design, a tuned cold air intake to effectively dissipate the heat generated by GPU. This unique design guarantees operation at 60°C under 100% GPU loading, making Nuvo-6108GC series extremely reliable for demanding field applications.

The new model Nuvo-6108GC-IGN features built-in ignition power control and two of its three 2.5" drives come with Neousys’ patented easy-swap trays for simple HDD/ SSD replacement.

**Specifications**

- **Processor**
  - Intel® Xeon® E3 v5 or 6th-Gen Core™ CPU
  - Intel® Xeon® Processor E3-1275 v5 (8M Cache, 3.4-4.1 GHz)
  - Intel® Xeon® Processor E3-1240 v5 (6M Cache, 3.5-4.5 GHz)
  - Intel® 6th-Gen Core™ i5-7500T (3.0-3.6 GHz)
  - Intel® 6th-Gen Core™ i7-6700 TE (2.4-3.4 GHz)
- **Chipset**
  - Intel® C236 platform controller hub
- **Graphics**
  - Intel® HD Graphics 610
- **Memory**
  - Up to 32 GB ECC/ non-ECC DDR4
- **I/O Interface**
  - 1x Gigabit Ethernet port by Intel®
  - 1x Ethernet port by Intel®
  - 1x Gigabit Ethernet port by Intel®
  - 1x Ethernet port by Intel®
  - 2x eSATA ports for 2.5" hard drives support RAID 0/ 1/ 5
  - 2x mini-PCIe x8 slots for add-on cards
  - 1x full-size mini PCI Express socket
  - 1x PCIe x16 slot for GPU
  - 1x PCIe x16 slot for Gen4, 4-lanes PCIE signals
  - 1x PCIe x16 slot for Gen4, 2-lanes PCIE signals
  - 1x PCIe x16 slot for Gen4, 2-lanes PCIE signals
- **Expansion Bus/ Internal I/O Interface**
  - PCIE x16 slot for Gen4, 4-lanes PCIE signals
  - PCIE x16 slot for Gen4, 4-lanes PCIE signals
  - M.2 mini-PCIe x1 slot for 3G/4G options with SIM socket
- **Power Supply**
  - DC Input: 24 VDC
  - Input Connector: 3-pin-pluggable terminal block for DC input (Pin: 0V/VCC/IN)
- **Mechanical**
  - Dimension: 178 mm (W) x 360 mm (D) x 174 mm (H)
  - Weight: 4.7 kg (incl. CPU, GPU, memory and HDD)
  - Mounting: Wallmount with damping brackets
- **Environmental**
  - Operating Temperature: -20°C ~ 60°C with 100% CPU/ GPU loading
  - Storage Temperature: -40°C ~ 85°C
  - Humidity: 10%~90% non-condensing
  - Vibration: Operating, 0.5g, 5-500Hz, 3-Axes
  - 2g (GPU, Fan and HDD), according to MIL-STD-202F-2-208A
  - EMI: EN 55022 Class A, EN 55032 and EN 61000-6-3

**Ordering Information**

**Product Description**

Nuvo-6108GC-IGN: Industrial-grade GPU computing platform supporting up to 250W NVIDIA graphics card, Intel® Xeon® E3 v5 and 6th-Gen Core™ Processor with built-in ignition control and 2x easy-swap trays

**Optional Accessories**

- **PA-280W-D12** 280W AC/DC power adapter: 24V/11.67A, 16AWG/192cm cord and terminals for terminal block, operating temperature: -30 to 60 °C.
- **PA-480W-D1N** 480W AC/DC power adapter DINrail mount, 24V/10A, 90-264Vac/127-370Vdc, terminal block, -20 to 70 °C, Meanwell 580-4B-24
**Introduction**

Nuvo-6108GC is world’s first industrial-grade GPU computer supporting high-end graphics cards. It’s designed to fuel emerging GPU-accelerated applications, such as artificial intelligence, VR, autonomous driving and CUDA computing by accommodating 250W NVIDIA® GPU.

Leveraging Intel® C236 chipset, Nuvo-6108GC supports Xeon® E3 v5 or 6th-Gen Core™ i7/ i5 CPU with up to 32 GB ECC non-ECC DDR4 memory. It incorporates general computer I/O like GbE, USB3.0 and serial ports. In addition to the x16 PCIe port for GPU installation, Nuvo-6108GC also has two x8 PCIe slots so you can install additional high performance expansion card with high bandwidths for data collections/ analytics and communication.

Nuvo-6108GC comes with sophisticated power design to handle heavy power consumption and power transient of a 250W GPU. Furthermore, to dissipate the heat generated by GPU. This unique design guarantees operation at 60°C under 100% GPU loading, making Nuvo-6108GC extremely reliable for demanding field applications.

**Key Features**

- Supports Intel® Xeon® E3 v5 or 6th-Gen Core™ i7/ i5 LGA1151 CPU
- Supports NVIDIA® GPU (up to 250W TDP)
- Patented thermal design for -25°C to 60°C rugged operation**
- Two x8, Gen3 PCIe slots for add-on cards
- Dual GbE ports and four USB3.0 ports
- Four 2.5” SATA hard drives with RAID 0/ 1/ 5/ 10 support
- Automatic temperature sensing and fan control
- Patented damping brackets* to withstand 1 Grms vibration

**Specifications**

**System Core**

- **E3 or 6th-Gen Core™ Processor**
- **Chipset**
- **Graphics**
- **Memory**
- **I/O Interface**
- **Ethernet**
- **Native Video Port**
- **Serial Port**
- **USB**
- **Audio**

**Storage Interface**

- **SATA**

**Expansion Box/ Internal I/O Interface**

- **PCI Express**
- **Mini PCIe**
- **Remote Ctrl. & Status Output**

**Power Supply**

- **DC Input**
- **Power Supply**

**Mechanical**

- **Dimension**
- **Weight**
- **Mounting**

**Environmental**

- **Operating Temperature**
- **Storage Temperature**
- **Humidity**
- **EMC**

**Ordering Information**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Product Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuvo-6108GC-TI</td>
<td>Industrial-grade GPU computing platform supporting 180W NVIDIA® GTX-1080 and Intel® Xeon® E3 v5 and 6th-Gen Core™ processor</td>
</tr>
</tbody>
</table>

**Optional Accessories**

- **PA-280W-ET2** 280W AC-DC power adapter, 400V-60Hz, 1840/1150V 1.25A/0.84A cord and terminals for terminal block, operating temperature: -30 to 60 °C.
- **PA-480W-DIN** 480W AC-DC power adapter DIN-rail mount, 24V 20A, 90-264VAC/127-370VDC, terminal block, -20 to 70°C. Meanwell SDR-480-24

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*NEC notified: No. M024571 / MM1732

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

**Temperature degrades with higher TDP CPU. For detail testing criteria, please contact Neousys Technology.**

**BurnInTest 8.0 with 35 TDP CPU. Operating**

**-40°C ~ 85°C**

**2x PCIe x8 slot @ Gen3, 4-lanes PCIE signals**

**1x PCIe x16 slot @ Gen3, 16-lanes PCIE signals for GPU**

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**Dimensions**

**Unit:** mm

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**Appearance**

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Neousys MezIO™ Modules
**MezIO-C180/MezIO-C181**

8-port RS-232/422/485 MezIO™ Module

**Key Features**

- 4x RS-232/422/485 multi-mode ports
- 4x RS-232 ports (C180) or 4x RS-422/485 ports (C181)
- Up to 921.6 Kbps baud rate
- BIOS-configurable mode/termination settings
- Supports Windows 7/8.1/10
- SC83-H 68-pin connector

**Specifications**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Product Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MezIO-C180-50</td>
<td>4x RS-232/422/485 and 4x RS-232 ports MezIO™ module, for Nuvo-7000/Nuvo-5000/POC-500/POC-300 Series</td>
</tr>
<tr>
<td>MezIO-C181-50</td>
<td>4x RS-232/422/485 and 4x RS-422/485 ports MezIO™ module, for Nuvo-7000/Nuvo-5000/POC-500/POC-300 Series</td>
</tr>
<tr>
<td>MezIO-D230-50</td>
<td>16-CH isolated DI and 16-CH isolated DO MezIO™ module, for Nuvo-7000/Nuvo-5000/POC-500/POC-300 Series</td>
</tr>
<tr>
<td>MezIO-D230-12</td>
<td>16-CH isolated DI and 16-CH isolated DO MezIO™ module, for POC-120 series</td>
</tr>
<tr>
<td>MezIO-D220-50</td>
<td>8-CH isolated DI and 8-CH isolated DO MezIO™ module, for Nuvo-7000/Nuvo-5000/POC-500/POC-300 Series</td>
</tr>
<tr>
<td>MezIO-D220-12</td>
<td>8-CH isolated DI and 8-CH isolated DO MezIO™ module, for POC-120 series</td>
</tr>
</tbody>
</table>

**MezIO-V20**

16-mode Ignition Power Control MezIO™ Module

**Key Features**

- Ignition power control with 16 predefined on/off delay modes
- Ultra-low 12 mA ignition-off standby power
- Advanced of ignition control features
- Low-battery protection
- Guaranteed power-on/power-off delay duration
- System hard-off
- BIOS POST check
- Supports 12V DC (small vehicle) and 24V DC (bus/truck) vehicles

**Ordering Information**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Product Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MezIO-V20-EP</td>
<td>(Nuvo-7160GC/ Nuvo-7164GC/ Nuvo-7080GC/P Nuvo-7000/ Nuvo-5000/P Nuvo-5080GC/P Nuvo-5080/F) 16-mode ignition power control MezIO™ module for in-vehicle usage</td>
</tr>
<tr>
<td>MezIO-V20</td>
<td>(POC-120/POC-300/ Nuvo-7180LP/Nuvo-5080LP) 16-mode ignition power control and 1x mini-PCIe socket MezIO™ module for in-vehicle usage</td>
</tr>
</tbody>
</table>

**MezIO-R10**

2.5” SATA HDD/SSD and Mini-PCIe Accommodation MezIO™ Module

**Key Features**

- Accommodates one 2.5” SATA HDD/ SSD
- One full-size mini-PCIe port with SIM socket

**Ordering Information**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Product Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MezIO-R10</td>
<td>(for POC-120/POC-300 series only) 2.5” SATA HDD/SSD and mini-PCIe accommodation MezIO™ module</td>
</tr>
<tr>
<td>MezIO-R11</td>
<td>(for POC-120/POC-300 series only) MezIO™ module with 2.5” SATA HDD/SSD</td>
</tr>
<tr>
<td>MezIO-R12</td>
<td>(for POC-120/POC-300 series only) MezIO™ module with SATA port for 2.5” HDD/SSD, 4-chan isolated DI and 4-chan isolated DO</td>
</tr>
</tbody>
</table>
**MezIO-U4** 4-Port USB3.0 MezIO™ Module

**Key Features**
- 4 x USB3.0 ports by independent Renesas μPD720202 Host Controllers
- Up to 5 Gbps each port (MezIO-U4-50)
- Support up to 900 mA per port

**Specifications**

<table>
<thead>
<tr>
<th></th>
<th>MezIO-U4-30</th>
<th>MezIO-U4-50</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB Ports</td>
<td>4 x USB3.0, compatible with USB 2.0/1.1/1.0</td>
<td>4 x USB3.0, compatible with USB 2.0/1.1/1.0</td>
</tr>
<tr>
<td>USB Controller</td>
<td>2 x Renesas μPD720202 Host Controllers</td>
<td>4 x Renesas μPD720202 Host Controllers</td>
</tr>
<tr>
<td>USB Connectors</td>
<td>4 x USB3.0 Type-A connectors</td>
<td>4 x USB3.0 Type-A connectors</td>
</tr>
<tr>
<td>Interface Signals</td>
<td>5 Gbps shared by two ports</td>
<td>5 Gbps for each port</td>
</tr>
<tr>
<td>Current Limit</td>
<td>900mA</td>
<td>900mA</td>
</tr>
</tbody>
</table>

**Ordering Information**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Product Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MezIO-U4-30</td>
<td>4-port USB3.0 MezIO™ module for POC-500 series and POC-300 series</td>
</tr>
<tr>
<td>MezIO-U4-50</td>
<td>4-port USB3.0 MezIO™ module for Nuvo-7000 series and Nuvo-5500 series</td>
</tr>
</tbody>
</table>

**MezIO - G4P/MezIO - G4** 4-Port GbE with 802.3at PoE+ MezIO™ Module

**Key Features**
- 4x gigabit Ethernet ports
- Compliant with 802.3at PoE+ (MezIO-G4P)
- Supporting 9.5 KB jumbo frame

**Specifications**

<table>
<thead>
<tr>
<th></th>
<th>MezIO - G4P</th>
<th>MezIO - G4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gigabit Ethernet Port</td>
<td>4 x GbE ports by 4x Intel® I210 controllers, supporting 9.5 KB jumbo frame</td>
<td>4 x GbE ports by 4x Intel® I210 controllers, supporting 9.5 KB jumbo frame</td>
</tr>
<tr>
<td>PoE Capability</td>
<td>Compliant with IEEE 802.3at-2009 (PoE+), each port delivers up to 25.5 W of power</td>
<td>-</td>
</tr>
<tr>
<td>Cable Requirement</td>
<td>CAT-5e or CAT-6 cable, 100 meters maximum</td>
<td>CAT-5e or CAT-6 cable, 100 meters maximum</td>
</tr>
</tbody>
</table>

**Ordering Information**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Product Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MezIO - G4P</td>
<td>4-Port GbE with 802.3at PoE+ MezIO™ module for Nuvo-7000 series and Nuvo-5500 series</td>
</tr>
<tr>
<td>MezIO - G4</td>
<td>4-Port GbE MezIO™ module for Nuvo-7000 series and Nuvo-5500 series</td>
</tr>
</tbody>
</table>
## List of Optional Cable

<table>
<thead>
<tr>
<th>Cable</th>
<th>Model Name</th>
<th>Description</th>
<th>Applicable Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cbl-IDC216F-OW-300CM</td>
<td>DIO flat cable, with 2.0mm pitch 2x8 female connector/Open End , for digital input/output, length: 300CM</td>
<td></td>
<td>POC-200 series</td>
</tr>
<tr>
<td>Cbl-IDC216F-OW-500CM</td>
<td>DIO flat cable, with 2.0mm pitch 2x8 female connector/Open End , for digital input/output, length: 500CM</td>
<td></td>
<td>POC-200 series</td>
</tr>
<tr>
<td>Cbl-W210F-W210F-10CM</td>
<td>Remote control cable, 2x5 Pin female-wire to 2x5 Pin female-wire length: 100CM</td>
<td></td>
<td>Nuvo-2000 series, Nuvo-5000GC series, Nuvo-5100VTC series, Nuvo-G3080T series</td>
</tr>
<tr>
<td>Cbl-IDC220F-2U2TA-15CM</td>
<td>USB cable, 2x USB(female) to PIN header( 20 pin, female), for internal USB port connectivity, length: 15CM</td>
<td></td>
<td>Nuvo-6000 series, Nuvo-2500E/P series, Nuvo-5000E/P series, Nuvo-7000E/P series</td>
</tr>
<tr>
<td>Cbl-DVI-DVI/VGA-Y-20CM</td>
<td>DVI-I to DVI-D/VGA splitter Y cable, length: 20CM</td>
<td></td>
<td>POC-200 series, POC-300 series</td>
</tr>
<tr>
<td>Cbl-Pwr4-W2.54F-20CM</td>
<td>Power cable, 4 PIN power connector to wafer 2.5 4P Female, provide 12V to add-on card, length: 20CM</td>
<td></td>
<td>Nuvo-2000 series, Nuvo-5000 series, Nuvo-7000 series</td>
</tr>
<tr>
<td>Cbl-IDC226F-DB25F-13.6CM</td>
<td>DIO cable braket, 26 Pin header (female) to DB25 (female), length: 13.6CM</td>
<td></td>
<td>Nuvo-2000 series, Nuvo-5000 series, Nuvo-7000 series</td>
</tr>
<tr>
<td>Cbl-IDC220F-2U2TA-20CM</td>
<td>USB cable, 2x1- Pin header to 2x USB2.0 with bracket.</td>
<td></td>
<td>Nuvo-6000 series</td>
</tr>
<tr>
<td>Cbl-DB9F-3DB9M-10CM</td>
<td>1x DB9 (female) to 3x DB9 (male), length: 10CM</td>
<td></td>
<td>Nuvo-6000 series, Nuvo-300 series, Nuvo-500 series</td>
</tr>
<tr>
<td>Cbl-DVID-VGA-22CM</td>
<td>DVI-D to VGA cable, for Nuvo-6000 series, length: 22CM</td>
<td></td>
<td>Nuvo-6000 series</td>
</tr>
<tr>
<td>Cbl-M12X8M-RJ45-500CM</td>
<td>M12 (8-pole-X-coded) to RJ45, CAT6, length : 500CM</td>
<td></td>
<td>Nuvo-7100VTC, Nuvo-5100VTC</td>
</tr>
</tbody>
</table>