**Key Features**

- Intel® 6th-Gen Core™ i7/ i5/ i3 35W/65W LGA1151 CPU
- Patented Cassette for PCI/ PCIe add-on card
- MezIO™ interface for easy function expansion
- Rugged, -25°C to 70°C fanless operation
- Up to 6x GigE ports, supporting 9.5 KB jumbo frame
- Up to 32 GB, DDR4-2133 SO-DIMM
- Accommodates two 2.5” SATA HDD/ SSD with RAID 0/1 support
- VGA/ DVI/ DP triple independent display, supporting 4K2K resolution

**Introduction**

Nuvo-5000 is Neousys’ rugged fanless embedded controller with performance and versatility. It supports socket-type 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 display outputs and if that’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. The MezIO™ module can deliver application-oriented functions for diversified vertical markets.

Neousys 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**

- **Processor**
  - Intel® Core™ i7-6700 (8M Cache, 3.4 GHz, 65W TDP)*
  - Intel® Core™ i5-6500 (6M Cache, 3.2 GHz, 65W TDP)*
  - Intel® Core™ i3-6100 (3M Cache, 3.7 GHz, 51W TDP)*
  - Intel® Pentium® G4400 (3M Cache, 3.3 GHz, 54W TDP)*
  - Intel® Celeron® G3900 (2M Cache, 2.8 GHz, 51W TDP)*
  - Intel® Core™ i7-6700TE (8M Cache, 3.4 GHz, 35W TDP)*
  - Intel® Core™ i5-6500TE (6M Cache, 2.3/ 3.3 GHz, 35W TDP)*
  - Intel® Core™ i3-6100TE (4M Cache, 2.7 GHz, 35W TDP)*
  - Intel® Pentium® G4400TE (3M Cache, 2.4 GHz, 35W TDP)*
  - Intel® Celeron® G3900TE (2M Cache, 2.3 GHz, 35W TDP)*

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

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

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

- **AMT**
  - Supports AMT 11.0

- **TPM**
  - Supports TPM 2.0

**I/O Interface**

- **Ethernet**
  - 2x Gigabit Ethernet ports by Intel® 1x I219 and I210 (Nuvo-5002E/ P)
  - 6x Gigabit Ethernet ports by Intel® 1x I219 (Nuvo-5002E/ P) (configured as 35W CPU mode)

- **PoE+**
  - Optional IEEE 802.3at PoE+ PSE for GbE Ports 3 ~ 6, 80W total power budget

- **USB**
  - 4x USB3.0 ports via native uHCI controller
  - 4x USB2.0 ports

- **Video Port**
  - 1x stacked VGA + DVI-D connector
  - 2x DisplayPort connectors, supporting 4K2K resolution (triple-independent display support)

- **Serial Port**
  - 2x software-programmable RS-232/ 422/ 485 port (COM1 & COM3)*
  - 1x RS-232 port (COM2)

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

**Storage Interface**

- **SATA HDD**
  - 2x internal SATA port for 2.5” HDD/ SSD installation, supporting RAID 0/1

- **mSATA**
  - 1x full-size mSATA port (mux with mini-PCIe)

- **PCI/PCI Express**
  - 1x PCI slot in Cassette (Nuvo-5002P/5006E)
  - 1x PCIe x16 slot (Q170), 8-lanes PCIe signals in Cassette (Nuvo-5002E/ 5006E)

- **Mini PCIe**
  - 1x internal Mini PCIe socket with front-accessible SIM socket
  - 1x internal Mini PCIe socket with internal SIM socket (mux with mSATA)

- **Expandable I/O**
  - 1x MezIO™ expansion port for Neousys’ MezIO™ modules

**Power Supply**

- **DC Input**
  - 1x 3-pin pluggable terminal block for 8–35VDC DC input

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

**Mechanical**

- **Dimension**
  - 240mm (W) x 225mm (D) x 90mm (H)

- **Weight**
  - 3.6kg

- **Mounting**
  - Wall-mount (standard) or DIN-rail (optional)

**Environmental**

- **Temperature**
  - Operating: -25°C ~ 70°C **
  - Storage: -40°C ~ 85°C

- **Humidity**
  - 10%–90%, non-condensing

- **Vibration**
  - Operating: 0.5G, 3-30Hz, 2.5G, Octave band
  - Shock: Operating, 90G, Half-sine 11ms Duration

- **EMC**
  - CE/ FCC class A according to EN 55022, EN 55024, EN 55032 and EN 60950

* For sub-zero operating temperature, a wide temperature HDD drive or Solid State Disk (SSD) is required.
Nuvo-5000E/P Series

**Appearance**

![Nuvo-5000E/P Series](image)

**Dimensions**

![Dimensions](image)

**Ordering Information**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Product Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuvo-5002E</td>
<td>Intel® 6th-Gen Core™ fanless controller with 2x GbE, PCI Express Cassette and MezIO™ interface</td>
</tr>
<tr>
<td>Nuvo-5002P</td>
<td>Intel® 6th-Gen Core™ fanless controller with 2x GbE, PCI 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>
<tr>
<td>Nuvo-5006P</td>
<td>Intel® 6th-Gen Core™ fanless controller with 6x GbE, PCI Cassette and MezIO™ interface</td>
</tr>
</tbody>
</table>

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

**Optional Accessories**

<table>
<thead>
<tr>
<th>DINRAIL-O</th>
<th>DIN-rail mounting assembly for Nuvo-5000 series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fankit-25</td>
<td>Fan assembly for 1-slot Cassette, 25x25x10mm</td>
</tr>
<tr>
<td>PA-120W-OW</td>
<td>120W AC/DC power adapter 20V/6A; 18AWG/120cm; cord end terminals for terminal block, operating temperature: -30 to 70 °C</td>
</tr>
<tr>
<td>Dmpbr-Nuvo5000_7000</td>
<td>Neousys' patented damping bracket assembly for Nuvo-7000E/DE/P</td>
</tr>
<tr>
<td>ETHY-100-2008S</td>
<td>Ethernet I/O expansion module with 8 isolated digital inputs and outputs</td>
</tr>
<tr>
<td>ETHY-100-2604S</td>
<td>Ethernet I/O expansion module with 8 isolated digital inputs and 4 relays outputs (coming soon)</td>
</tr>
</tbody>
</table>

**Cassette Modules**

| CSM-PoE354 | Cassette module with PCIe-PoE354at and pre-installed passive heat-spreader |
| CSM-USB380 | Cassette module with PCIe-USB380 and pre-installed passive heat-spreader |
| CSM-NV750 | Cassette module with NVIDIA® GTX 750 Ti graphics card, pre-installed heat-spreader and fan |
| CSM-R800 | Cassette module accommodating four 2.5” HDD/ SSD (support RAID 0/1/10) |

**MezIO™ Modules**

| MezIO™ -C180 | MezIO™ module with 4x RS-232/ 422/ 485 ports and 4x RJ-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™ -U4 | MezIO™ module with 4x USB3.0 ports |
| MezIO™ -G4 | MezIO™ module with 4x GigE ports |
| MezIO™ -G4P | MezIO™ module with 4x IEEE 802.3at PoE+ ports |

Only Nuvo-5000E-PoE and Nuvo-5006P-PoE support MezIO-G4P