

Machine Vision



# Nuvis-7306RT Series

Intel® 9th/ 8th-Gen Core™ i vision controller with vision-specific I/O, real-time controller and GPU-computing



CE FC

## Key Features

- Intel® 9th/ 8th-Gen Core™ i7/i5 LGA1151 socket-type CPU
- Integrated vision-specific I/O
  - 4-CH CC/CV 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 with screw-lock
  - 8-CH USB 3.1 ports with screw-lock
- Two x16 PCIe slots for NVIDIA 120W GPU and/or image capture card

\*R.O.C Patent No. 1526834/ M534371 / M456527

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Nuvis-7306RT series is an all-in-one powerful vision controller incorporating every function needed for machine vision applications. Powered by Intel® 9th/ 8th-Gen Core™ i7/i5, Nuvis-7306RT brings tremendous computing power for image processing.

Nuvis-7306RT integrates constant-current lighting controller, isolated 12V camera trigger output, encoder input for position information and DIO to connect sensors/ actuators. Thanks to Neosys' patented MCU-based architecture and DTIO/ NuMCU firmware, Nuvis-7306RT is able to overcome latencies between sensor input and trigger output. It offers microsecond-scale real-time I/O control that guarantees in-time or in-position image capture.

For deep learning vision applications, Nuvis-7306RT can accommodate an NVIDIA® 120W TDP GPU to leverage state-of-the-art object detection/ classification neural network models. Built-in vision-oriented I/O along with remarkable performance makes Nuvis-7306RT the most exceptional vision controller that fits right into the modern vision industry.

## Specifications

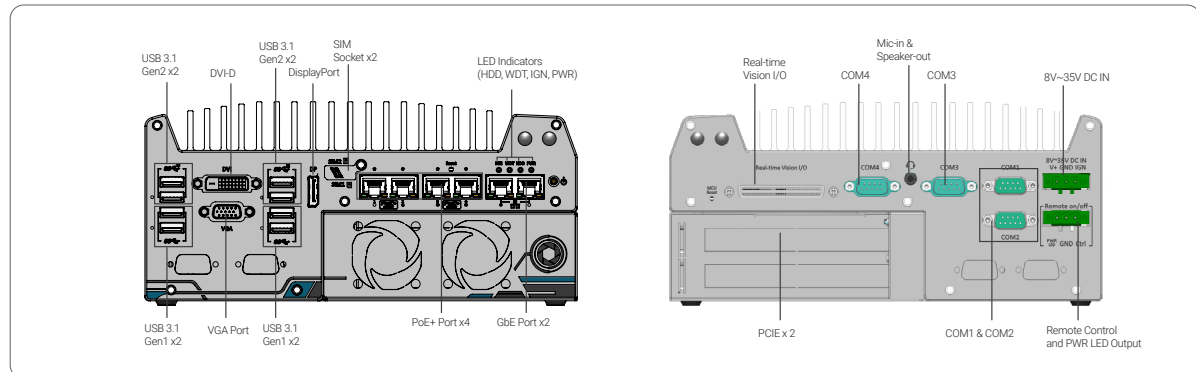
| System Core                   |                                                                                                                                                                                                 |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Processor                     | Supporting Intel® 9th/ 8th-Gen Coffee Lake CPU (LGA1151 socket, 65W/ 35W TDP)<br>- Intel® Core™ i7-9700E/ i7-9700TE/ i7-8700/ i7-8700T<br>- Intel® Core™ i5-9500E/ i5-9500TE/ i5-8500/ i5-8500T |
| Chipset                       | Intel® Q370 platform controller hub                                                                                                                                                             |
| Graphics                      | Integrated Intel® UHD graphics 630                                                                                                                                                              |
| Memory                        | Up to 64 GB DDR4 2666/ 2400 SDRAM (two SODIMM slots)                                                                                                                                            |
| AMT                           | Supports AMT 12.0                                                                                                                                                                               |
| TPM                           | Supports TPM 2.0                                                                                                                                                                                |
| Vision-Specific I/O Interface |                                                                                                                                                                                                 |
| LED Lighting Controller       | 4-CH LED lighting controller output, supporting<br>- Constant current mode<br>(up to 2A per channel, 100 kHz dimming control)<br>- Constant voltage mode (24 VDC, 100 kHz dimming control)      |
| Camera Trigger                | 4-CH camera trigger output (Isolated 12 VDC output)                                                                                                                                             |
| Encoder Input                 | 1-CH quadrature encoder input (A/B/Z)                                                                                                                                                           |
| Isolated Digital Output       | 4-CH isolated high-speed digital output (<2 us transient time, for strobe/PWM)<br>4-CH isolated high-current digital output (up to 500 mA rated current for actuator)                           |
| Isolated Digital Input        | 8-CH isolated high-speed digital input (<2 us transient time)                                                                                                                                   |
| Real-time I/O Control         | Patented MCU-based real-time I/O control with DTIO V2 or NuMCU firmware                                                                                                                         |
| I/O Interface                 |                                                                                                                                                                                                 |
| Ethernet                      | 6x Gigabit Ethernet ports by I219 and I210                                                                                                                                                      |
| PoE+                          | 4x IEEE 802.3at (25.5W) Gigabit PoE+ ports by Intel® I210 with RJ45 connector                                                                                                                   |
| USB 3.1                       | 4x USB 3.1 Gen2 (10 Gbps) ports<br>4x USB 3.1 Gen1 (5 Gbps) ports                                                                                                                               |
| USB 2.0                       | 1x USB 2.0 port (internal use)                                                                                                                                                                  |
| Video Port                    | 1x VGA , supporting 1920 x 1200 resolution<br>1x DVI-D, supporting 1920 x 1200 resolution<br>1x DisplayPort, supporting 4096 x 2304 resolution                                                  |
| Serial Port                   | 2x software-programmable RS-232/422/485 ports (COM1/ COM2)<br>2x RS-232 ports (COM3/ COM4)                                                                                                      |
| Audio                         | 1x 3.5 mm jack for mic-in and speaker-out                                                                                                                                                       |
| Storage Interface             |                                                                                                                                                                                                 |
| SATA HDD/ SSD                 | 2x 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) for NVMe SSD or Intel® Optane™ memory installation                                                                                                      |
| mSATA                         | 1x full-size mSATA port (mux with mini-PCIe)                                                                                                                                                    |
| Expansion Bus                 |                                                                                                                                                                                                 |
| PCI Express                   | 2x PCIe x16 slot @ Gen3, 8-lane PCIe signals in Cassette, supporting<br>- 120W NVIDIA® GPU card<br>- COTS CameraLink and CoaXPress camera interface card                                        |
| Mini PCI-E                    | 1x full-size mini PCI Express socket with internal SIM socket (mux with mSATA)                                                                                                                  |
| M.2                           | 1x M.2 2242 B key socket with dual front-accessible SIM sockets, supporting dual SIM mode with selected M.2 LTE module                                                                          |
| Power Supply                  |                                                                                                                                                                                                 |
| DC Input                      | 1x 3-pin pluggable terminal block for 8–35V DC input                                                                                                                                            |
| Remote Ctrl. & Status Output  | 1x 3-pin pluggable terminal block for remote control and PWR LED output                                                                                                                         |
| Mechanical                    |                                                                                                                                                                                                 |
| Dimension                     | 240 mm (W) x 225 mm (D) x 111 mm (H)                                                                                                                                                            |
| Weight                        | 3.7 kg                                                                                                                                                                                          |
| Mounting                      | Wall-mount                                                                                                                                                                                      |
| Environmental                 |                                                                                                                                                                                                 |
| Operating Temperature         | with 35W CPU and NVIDIA® 120W GPU<br>-25°C ~ 60°C **<br>with 65W CPU and NVIDIA® 120W GPU<br>-25°C ~ 60°C */ ** (configured as 35W TDP mode)<br>-25°C ~ 50°C */ ** (configured as 65W TDP mode) |
| Storage Temperature           | -40°C ~ 85°C**                                                                                                                                                                                  |
| Humidity                      | 10%~90% , non-condensing                                                                                                                                                                        |
| Vibration                     | Operating, MIL-STD-810G, Method 514.6, Category 4                                                                                                                                               |
| Shock                         | Operating, MIL-STD-810G, Method 516.6, Procedure I, Table 516.6-II                                                                                                                              |
| EMC                           | CE/FCC Class A, according to EN 55032 & EN 55024                                                                                                                                                |

\* For i7-9700E and i7-8700 running at 65W mode, the highest operating temperature shall be limited to 50°C and thermal throttling may occur when sustained full-loading applied. Users can configure CPU power in BIOS to obtain higher operating temperature.  
\*\* For sub-zero operating temperature, a wide temperature HDD or Solid State Disk (SSD) is required.

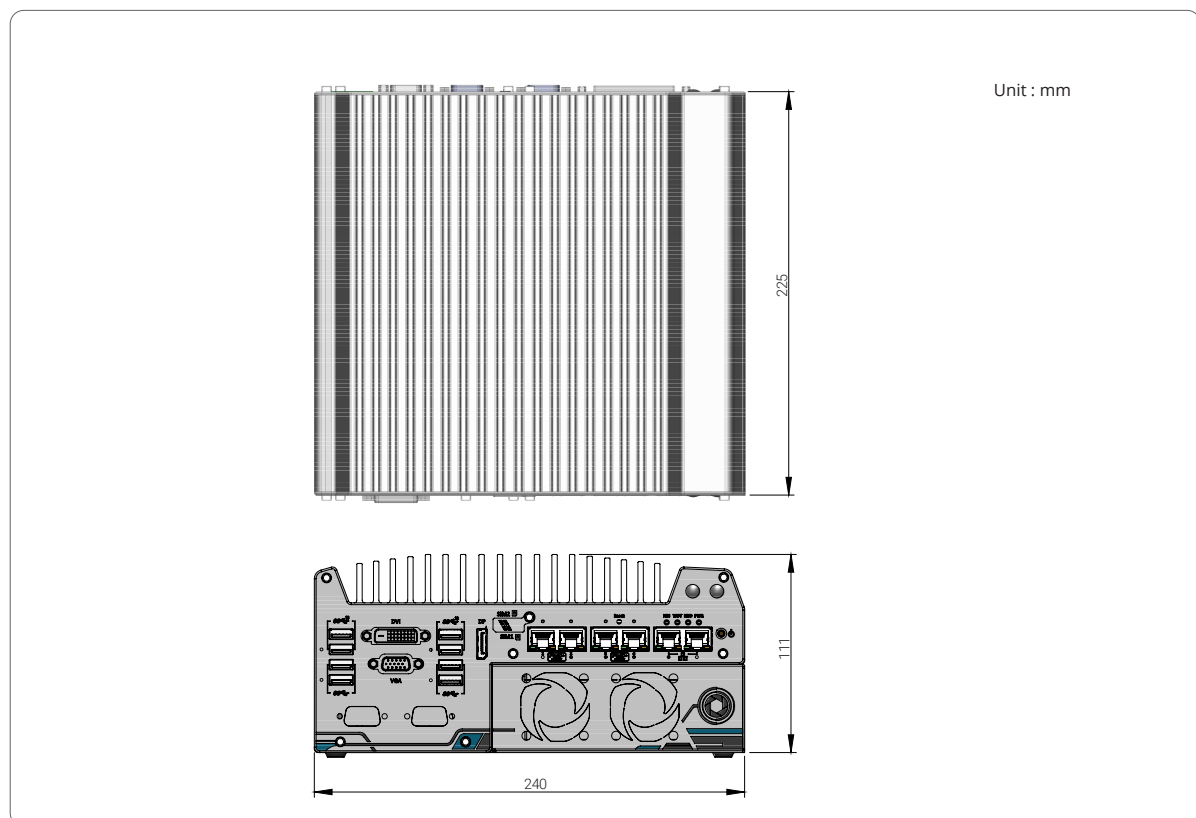
Nuvis-7306RT Series



## Appearance



## Dimensions



## Ordering Information

| Model No.          | Product Description                                                                                                                        |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Nuvis-7306RT-DTIO  | Intel® 9th/ 8th-Gen Core™ i machine vision controller with vision-specific I/O, real-time controller by patented DTIO V2 and GPU-computing |
| Nuvis-7306RT-NuMCU | Intel® 9th/ 8th-Gen Core™ i machine vision controller with vision-specific I/O, real-time controller by patented NuMCU and GPU-computing   |

## Optional Accessories

|             |                                                                                                                                 |
|-------------|---------------------------------------------------------------------------------------------------------------------------------|
| PA-280W-ET2 | 280W AC/DC power adapter 24V/11.67A; 16AWG/100cm; cord end terminals for terminal block, operating temperature : -30°C 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                           |

## Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

### US

[sales@assured-systems.com](mailto:sales@assured-systems.com)

Sales: +1 347 719 4508

Support: +1 347 719 4508

1309 Coffeen Ave  
Ste 1200  
Sheridan  
WY 82801  
USA

### EMEA

[sales@assured-systems.com](mailto:sales@assured-systems.com)

Sales: +44 (0)1785 879 050

Support: +44 (0)1785 879 050

Unit A5 Douglas Park  
Stone Business Park  
Stone  
ST15 0YJ  
United Kingdom

VAT Number: 120 9546 28

Business Registration Number: 07699660