

Nuvis-7306RT Series

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

Preliminary



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. I526834/ M534371 / M456527

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Introduction

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.

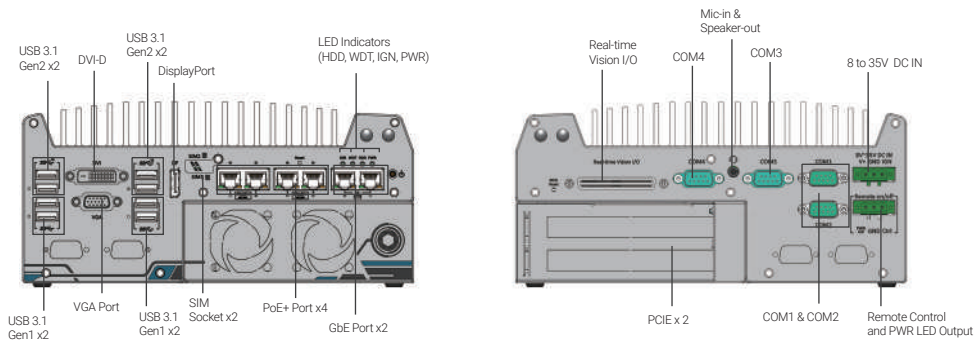
Specifications

System Core		Storage Interface	
Processor	Supporting Intel® 9th/ 8th-Gen Coffee Lake CPU (LGA1151 socket, 65W/ 35W TDP) - Intel® Core™ i7-9700E/ i7-9700TE/ i7-8700/ i7-8700T - Intel® Core™ i5-9500E/ i5-9500TE/ i5-8500/ i5-8500T	SATA HDD/ SSD	2x internal SATA port for 2.5" HDD/ SSD installation, supporting RAID 0/ 1
Chipset	Intel® Q370 platform controller hub	M.2	1x M.2 2280 M key socket (PCIe Gen3 x4) for NVMe SSD or Intel® Optane™ memory installation
Graphics	Integrated Intel® UHD graphics 630	mSATA	1x full-size mSATA port (mux with mini-PCIe)
Memory	Up to 64 GB DDR4 2666/ 2400 SDRAM (two SODIMM slots)	Expansion Bus	
AMT	Supports AMT 12.0	PCI Express	2x PCIe x16 slot @ Gen3, 8-lane PCIe signals in Cassette, supporting - 120W NVIDIA® GPU card - COTS CameraLink and CoaXPress camera interface card
TPM	Supports TPM 2.0	Mini PCI-E	1x full-size mini PCI Express socket with internal SIM socket (mux with mSATA)
Vision-Specific I/O Interface		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
LED Lighting Controller	4-CH LED lighting controller output, supporting - Constant current mode (up to 2A per channel, 100 kHz dimming control) - Constant voltage mode (24 VDC, 100 kHz dimming control)	Power Supply	
Camera Trigger	4-CH camera trigger output (Isolated 12 VDC output)	DC Input	1x 3-pin pluggable terminal block for 8 to 35V DC input
Encoder Input	1-CH quadrature encoder input (A/B/Z)	Remote Ctrl. & Status Output	1x 3-pin pluggable terminal block for remote control and PWR LED output
Isolated Digital Output	4-CH isolated high-speed digital output (<2 us transient time, for strobe/PWM) 4-CH isolated high-current digital output (up to 500 mA rated current for actuator)	Mechanical	
Isolated Digital Input	8-CH isolated high-speed digital input (<2 us transient time)	Dimension	240 mm (W) x 225 mm (D) x 111 mm (H)
Real-time I/O Control	Patented MCU-based real-time I/O control with DTIO V2 or NuMCU firmware	Weight	3.7 kg
I/O Interface		Mounting	Wall-mount
Ethernet	6x Gigabit Ethernet ports by I219 and I210	Environmental	
PoE+	4x IEEE 802.3at (25.5W) Gigabit PoE+ ports by Intel® I210 with RJ45 connector	Operating Temperature	with 35W CPU and NVIDIA® 120W GPU -25°C ~ 60°C ** with 65W CPU and NVIDIA® 120W GPU -25°C ~ 60°C * / ** (configured as 35W TDP mode) -25°C ~ 50°C * / ** (configured as 65W TDP mode)
USB 3.1	4x USB 3.1 Gen2 (10 Gbps) ports 4x USB 3.1 Gen1 (5 Gbps) ports	Storage Temperature	-40°C ~ 85°C **
USB 2.0	1x USB 2.0 port (internal use)	Humidity	10%~90% , non-condensing
Video Port	1x VGA , supporting 1920 x 1200 resolution 1x DVI-D, supporting 1920 x 1200 resolution 1x DisplayPort, supporting 4096 x 2304 resolution	Vibration	Operating, MIL-STD-810G, Method 514.6, Category 4
Serial Port	2x software-programmable RS-232/422/485 ports (COM1/ COM2) 2x RS-232 ports (COM3/ COM4)	Shock	Operating, MIL-STD-810G, Method 516.6, Procedure I, Table 516.6-II
Audio	1x 3.5 mm jack for mic-in and speaker-out	EMC	CE/FCC Class A, according to EN 55032 & EN 55024

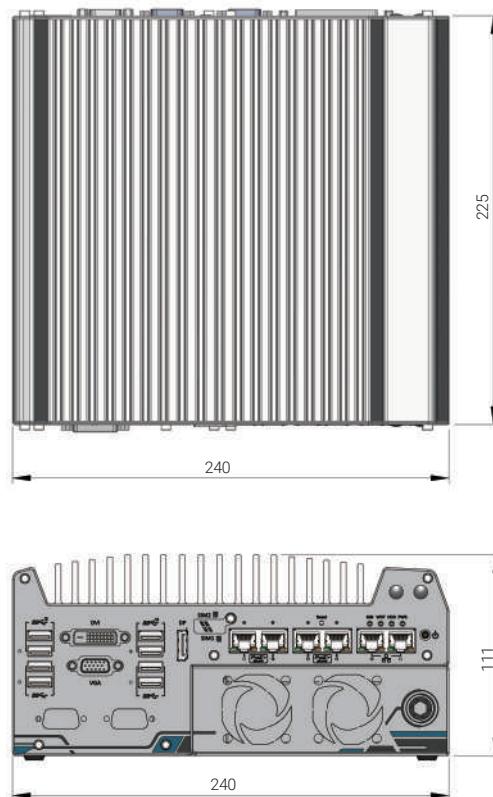
* For i7-9700E and i7-8700 running at 65W mode, the highest operating temperature shall be limited to 50°C and thermal throttling may occur when sustained full-loading applied. Users can configure CPU power in BIOS to obtain higher operating temperature.

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

Appearance



Dimensions



Unit : mm

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°C to 70°C