Nuvo-9154GC Series

Ruggedized GPU Computer Supporting 4x GMSL2 Cameras, 150W NVIDIA® RTX GPU and Intel® 14th/13th/12th-Gen Core™ Processor

Key Features

- **Supports Intel® 14th/13th/12th-Gen Core™ 24C/ 32T 35W/ 65W CPU**
- **Supports NVIDIA® RTX™ series GPU card up to 150W TDP**
- **Supports 4x GMSL2 cameras**
- **Driver-ready for selected GMSL2 cameras (Linux only)**
- **1x GPS PPS input and 1x GPS PPS output for frame synchronization calibration**
- **2x CAN 2.0, 5x 2.5GbE and 1x GbE with PoE+ (ports 3 to 6)**
- **1x USB 3.2 Gen2x2 Type-C and 6x USB 3.2 Type-A ports**
- **-25°C to 60°C wide temperature rugged operation**
- **8V to 48V wide-range DC input with built-in ignition power control**

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

Introduction

Nuvo-9154GC is engineered for AMRs in warehousing, logistics, and agriculture. Featuring on-board GMSL2 connectors with an Intel® 14th/13th/12th Gen platform and a 150W NVIDIA® Blackwell GPU, it is the ultimate hardware foundation for real-time multi-sensor fusion and complex spatial path planning.

Intel 14th/13th/12th Gen processors deliver exceptional computation for SLAM stability and LiDAR-based path planning in logistics automation. Combined with a 150W NVIDIA® GPU (up to 19.2 TFLOPS, Blackwell, FP32), Nuvo-9154GC enables high-precision object recognition and contour analysis.

Nuvo-9154GC provides driver-ready support for selected 2MP to 8MP automotive GMSL2 cameras, and it also has a dedicated porting mode to integrate unlisted GMSL2 cameras with varying resolutions via I2C configurations.

Despite its compact footprint, the Nuvo-9154GC offers 6x USB 3.2, 6x 2.5GbE/GbE with PoE+, and CAN 2.0. Internal mini-PCIe and M.2 B-key sockets ensure support for seamless Wi-Fi, 4G LTE, and 5G connectivity. Designed for harsh conditions, it utilizes FAKRA connectors and a dedicated GPU bracket to significantly enhance shock and vibration resistance. Combined with its wide-range DC input and wide-temperature design, Nuvo-9154GC guarantees long-term stability in demanding AMR environments.

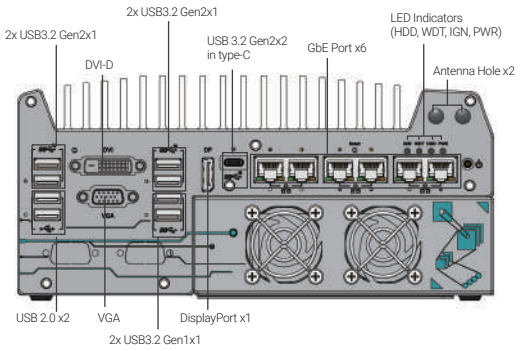
Specifications

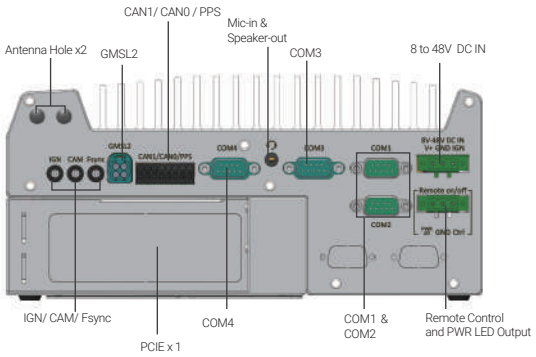
System Core		
Processor	Supporting Intel® 14th-Gen Core™ CPU (LGA1700 socket, 65W/ 35W TDP)[1][2] - Intel® Core™ i9-14900/ i9-14900T - Intel® Core™ i7-14700/ i7-14700T - Intel® Core™ i5-14500/ i5-14400/ i5-14500T - Intel® Core™ i3-14100/ i3-14100T	
	Supporting Intel® 13th-Gen Core™ CPU[1][2] (LGA1700 socket, 65W/ 35W TDP) - Intel® Core™ i9-13900E/ i9-13900TE - Intel® Core™ i7-13700E/ i7-13700TE - Intel® Core™ i5-13500E/ i5-13400/ i5-13500TE - Intel® Core™ i3-13100E/ i3-13100TE	Supporting Intel® 12th-Gen Core™ CPU (LGA1700 socket, 65W/ 35W TDP) - Intel® Core™ i9-12900E/ i9-12900TE - Intel® Core™ i7-12700E/ i7-12700TE - Intel® Core™ i5-12500E/ i5-12500TE - Intel® Core™ i3-12100E/ i3-12100TE
Chipset	Intel® Q670E Platform Controller Hub	
Graphics	Integrated Intel® UHD Graphics 770 (32EU) / 730 (24EU)	
Memory	Up to 128 GB DDR5 4800 SDRAM (two SODIMM slots)	
AMT	Supports Intel vPro/ AMT 16.0	
TPM	Supports dTPM 2.0	
I/O Interface		
GMSL2	4x GMSL2 automotive cameras via 1x 4-port Mini-FAKRA Z connector, supporting selected GMSL2 camera configurations, including but not limited to: Configuration A: 2x 8MP + 1x 3MP @ 30 FPS Configuration B: 4x 5MP @ 30 FPS | Configuration C: 4x 3MP @ 30 FPS Configuration D: 4x 2MP @ 60 FPS | Configuration E: 4x 2MP @ 30 FPS	
GPS PPS	1x isolated GPS PPS input 1x GPS PPS output 1x PPS LED (for debug)	
CAN	2x CAN 2.0 with configurable CAN bus termination	
Ethernet	5x 2.5G Ethernet by I226-IT/ I225-IT and 1x Gigabit Ethernet by I219-LM with screw-lock	
PoE+	IEEE 802.3at PoE+ PSE for Port 3 to Port 6. 100W total power budget	
USB	1x USB 3.2 Gen2x2 (20 Gbps) port in type-C connector with screw-lock 4x USB 3.2 Gen2x1 (10 Gbps) ports in type-A connectors 2x USB 3.2 Gen1x1 (5 Gbps) ports in type-A connectors 2x USB 2.0 ports	
Video Port (Integrated Graphics)	1x VGA connector, supporting 1920 x 1200 resolution 1x DVI-D connector, supporting 1920 x 1200 resolution 1x DisplayPort connector, supporting 4096 x 2304 resolution	
Serial Port	2x software-programmable RS-232/ 422/ 485 ports (COM1/COM2) 2x RS-232 ports (COM3/COM4)	
Audio	1x 3.5 mm jack for mic-in and speaker-out	

Storage Interface	
SATA HDD	2x internal SATA port for 2.5" HDD/ SSD installation, supporting RAID 0/ 1
M.2	1x M.2 2280 M key socket (PCIe Gen4 x4) for NVMe SSD
Expansion Bus	
PCI Express	1x PCIe x16 slot@Gen3, 16-lanes PCIe signals in Cassette for installing an NVIDIA® graphics card up to 150W TDP (Max. graphics card dimension is 188 mm(L) x 131 mm(W), dual slot allocation)
Mini PCI Express	1x full-size mini PCI Express socket
M.2	1x M.2 3042/3052 B key socket with SIM slot for M.2 4G/ 5G module
Power Supply	
DC Input	1x 3-pin pluggable terminal block for 8 to 48V DC input [1]
Remote Ctrl. & LED Output	1x 3-pin pluggable terminal block for remote control and PWR LED output
Ignition Control	15 pre-defined on/ off delay modes from panel rotary switch
Mechanical	
Dimension	240 mm (W) x 225 mm (D) x 110.5 mm (H)
Weight	3.97 kg
Mounting	Wall-mount (standard) or damping bracket (optional)
Environmental	
Operating Temperature	**With 35W CPU and 150W GPU** -25°C to 60°C[2][3] **With 65W CPU and 150W GPU** -25°C to 60°C[2][3] (configured as 35W TDP) -25°C to 50°C[2][3] (configured as 65W TDP)
Storage Temperature	-40°C to 85°C
Humidity	10% to 90% , non-condensing
Vibration	MIL-STD-810H, Method 514.8, Category 4
Shock	MIL-STD-810H, Method 516.8, Procedure I
EMC	CE/FCC Class A, according to EN 55032 & EN 55035

[1]The system is designed to tolerate 8V to 48V voltage fluctuation. The minimal voltage is required with different system configuration. For system with 35W CPU and 150W GPU, 12V or above DC voltage is recommended.
For a system with a 65W CPU and 150W GPU, with or without additional PoE+ PD and/or high-watt PCIe cards, a DC voltage of 24V or above is recommended.
Alternatively, users may select an appropriate DC input voltage by considering both the 16A current limitation of the DC input connector and the total system power load.
[2]For sub-zero operating temperature, a wide temperature HDD or Solid State Disk (SSD) is required.
[3]For CPU operating 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 allow higher operating temperature.

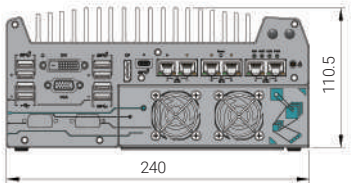
Appearance





Dimensions

Unit : mm



Ordering Information

Model No.	Product Description
Nuvo-9154GC	Ruggedized GPU computer supporting 4x GMSL2 cameras, 150W NVIDIA® RTX GPU and Intel® 14th/ 13th/ 12th-Gen Core™ processor

Optional Accessories

Dmpbr-Nuvo9160	Neousys' patented damping brackets assembly for Nuvo-9160GC
AccsyBx-Cardholder-9160GC-xx	Nuvo-9160GC GPU bracket kits for NVIDIA® RTX™ 2000 Ada, RTX 2000E Ada , RTX™ 4000 SFF Ada and other selected GPU. Please contact Neousys for more information.
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-600W-ENC	600W AC/DC power adapter 24V/25A; cord end terminals for terminal block, operating temperature : -20°C to 70°C.