

Rugged Fanless In-vehicle Computers

Enhance Your On-road Applications



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Ready to Enhance On-road Reliability?

In the bustling world of transportation, where every journey is a testament to resilience, Neousys' VTC series stands as a beacon of rugged reliability. Designed to brave the harshest environments—be it the relentless vibrations of a freight truck, the constant motion of a city bus, or the demanding conditions of a train—the VTC series combines innovation with endurance. Its patented heat dissipation technology and shock-resistant design ensure that it thrives where others falter. Certified to meet the rigorous standards of E-Mark certification and EN 50155 EMC compliance, it not only promises durability but also excels in connectivity with its extensive array of I/O ports. Whether navigating urban streets or the open road, the VTC series is the steadfast companion that keeps every vehicle's heart beating smoothly and efficiently.

Driving Transformation Through Innovation

- Fleet Management
- Public Transportation
- Public Service & Utilities
- Roadside Operations



Wide Temperature Thermal Design

A patented passive cooling design ensures fanless operation from -40°C to 70°C, even at full CPU load



Rugged Reliability On The Road

Certified with E-Mark certification and EN 50155 EMC compliance, the system ensures safety and reliability in harsh mobile environments, offering shock and vibration resistance.



Efficient And Powerful Performance

Featuring high-performance CPU, ensuring robust processing power for demanding applications and real-time decision-making



Ready For In-vehicle Application

With PoE+ ports, screw-locks, wide DC input, ignition control, SocketCAN, and wireless modules, the VTC series ensures reliable in-vehicle operation.

Built for Mobility and Performance

The VTC series is built for high-performance in-vehicle computing, offering robust durability and reliability for demanding environments such as public transportation, fleet management, and roadside operations. With E-Mark certification and EN 50155 EMC compliance, it meets the rigorous standards required for critical mobile applications. The system is equipped with PoE+ ports with RJ45 or M12 for seamless power and data delivery, alongside ignition power control, CAN bus dependable connectivity. Additionally, its hot-swappable HDD tray and PCIe Cassette provide easy expansion, ensuring flexibility for evolving needs in dynamic environments.



VTC Nuvo Series

Seamless Performance with Hot-Swappable Storage



Nuvo-9200VTC

- Intel® 14th/ 13th/ 12th-Gen Core™ processor
- 4x M12/ 4x RJ45/ 8x RJ45 PoE+ ports
- 8V-48V DC input
- Single-slot PCIe Cassette



Nuvo-9100VTC

- Intel® 14th/ 13th/ 12th-Gen Core™ processor
- 4x M12/ 4x RJ45/ 8x RJ45 PoE+ ports
- 8V-48V DC input



Nuvo-7200VTC

- Intel® 9th/ 8th-Gen Core™ processor
- 4x M12/ 4x RJ45/ 8x RJ45 PoE+ ports
- 8V-35V DC input
- Single-slot PCIe Cassette



Nuvo-7100VTC

- Intel® 9th/ 8th-Gen Core™ processor
- 4x M12/ 4x RJ45/ 8x RJ45 PoE+ ports
- 8V-35V DC input



Nuvo-2610VTC

- Intel Atom® x6425E processor
- 4x M12 PoE+ ports
- 8V-35V DC input
- 2500Ws SuperCAP Power Backup



Nuvo-2615RL

- Intel Atom® x6425E processor
- 4x M12 PoE+ ports
- 43V-160V DC input with 1500Vdc insulation
- 2500Ws SuperCAP Power Backup

VTC POC Series

Compact Design with Maximum Efficiency



POC-751VTC

- Intel® Core™ i3-N305
- 4x RJ45 PoE+ ports
- 8V-35V DC input
- Supports OpenVINO™



POC-551VTC

- AMD Ryzen™ V1605B
- 4x RJ45 PoE+ ports
- 8V-35V DC input



POC-451VTC

- Intel Atom® x6425E
- 2x RJ45 PoE+ ports
- 8V-35V DC input

High Performance

Entry

Expandable

Powerful

Ultra-compact

Revolutionizing Delivery Autonomous Vehicles & In-vehicle Computing Solutions

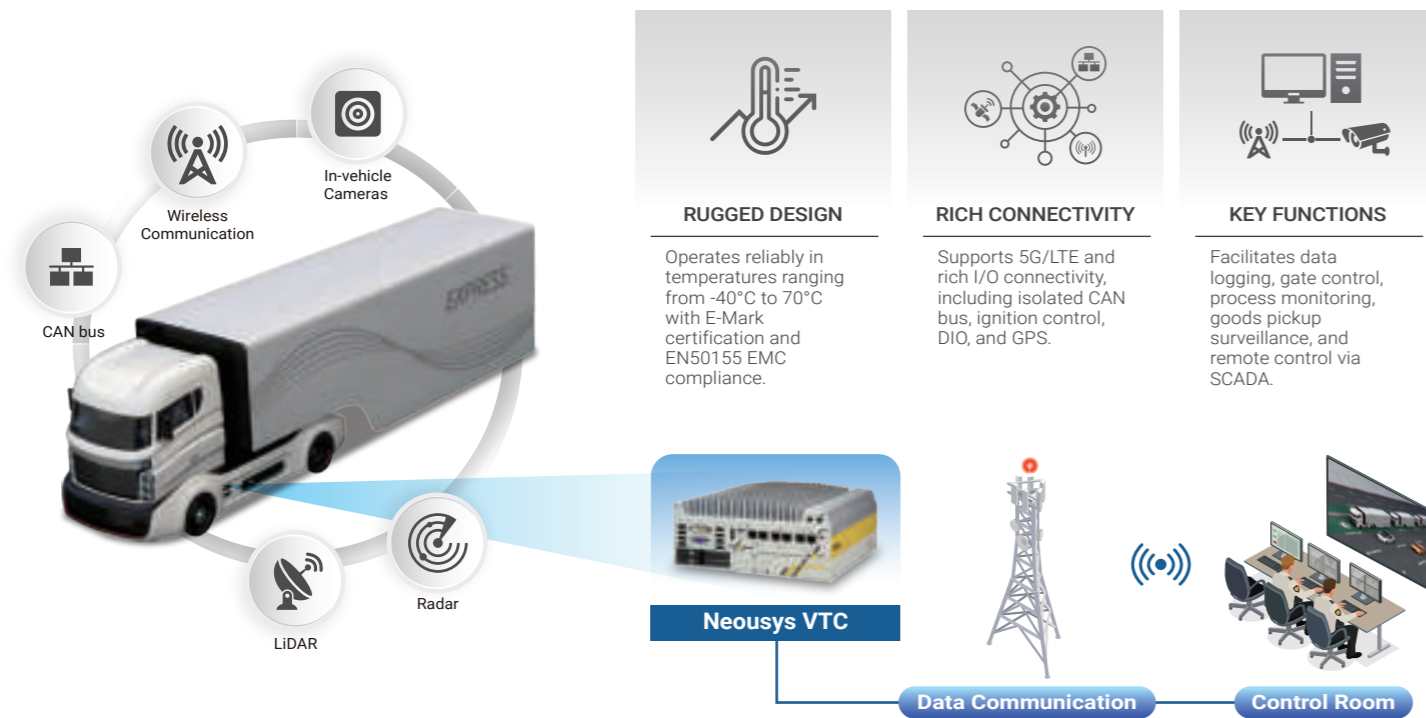
Overview

E-commerce has surged 2-5 times faster than pre-pandemic rates, causing severe seaport backlogs and driver shortages. Autonomous delivery is emerging as a transformative solution, revolutionizing retail and next-generation transportation. Imagine electric vehicles using advanced driverless technology and cargo robotics to achieve efficient, multi-stop deliveries without traditional controls or drivers. These vehicles offer remarkable energy efficiency and reduced operational costs, powered by high-performance in-vehicle computers.

For this vision to succeed, the in-vehicle computer must:

- Ensure ultra-low latency: Reliable and safe data transmission.
- Support autonomous driving: Robust in-vehicle and fast V2V/V2X communications.
- Enable remote operation: 5G speed for seamless vehicle control.
- Provide high computing power: Balances performance and thermal management for real-time decisions.
- Ensure ruggedness: Withstands shock and vibration for 24/7 reliability.

The Computer Platform



Railroad Crossing Safety Advanced Warning Systems & Rugged Computing

Overview

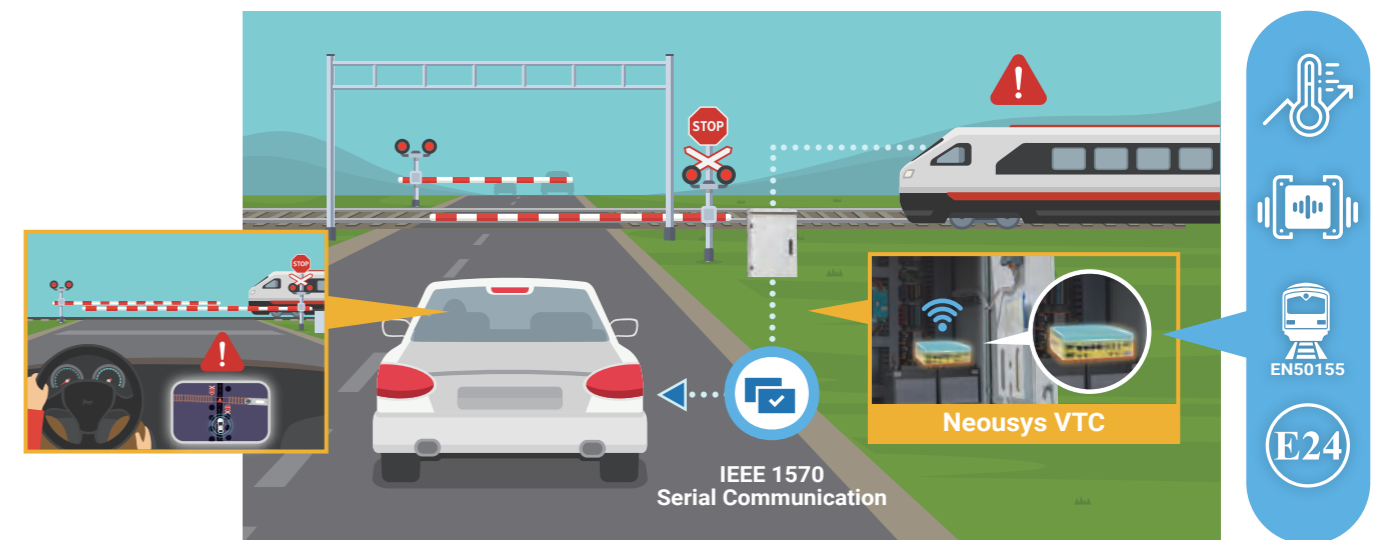
To combat the frequent and catastrophic railroad crossing accidents caused by the immense force of trains, a groundbreaking vehicle-to-infrastructure warning system has been developed. Picture a vehicle-based subsystem (VBS) seamlessly communicating with roadside subsystems (RBS) in traffic signal cabinets. Using IEEE 1570 standards, this system ensures effective communication between rail and highway systems at crossings. Vehicles decelerate and stop well before the crossing, preventing accidents.

For this system to work flawlessly, the roadside computer unit must:

- Handle temperature extremes: Operate in temperatures from 50°C+ to just below zero.
- Endure weather challenges: Function in open fields and within a cabinet with other electronics.
- Include Essential components: Intel CPU, CAN bus, HDMI/DVI output, USB, and PoE capability.
- Support power and communication needs: IEEE 1570 serial communication and power input from the roadside cabinet.

The Computer Platform

- Rugged Design: Patented heat dissipation and shock/vibration resistance for harsh environments.
- Extensive Connectivity: Features Power over Ethernet, USB, video output, expansion slots, CAN bus, and COM ports.
- Versatile Functionality: Wide-temperature operation, ignition control, E-Mark certified, and EN 50155 EMC compliance.
- Multi-purpose Gateway: Suitable for diverse in-vehicle and mass transportation applications.



Product Selection



Nuvo-9200VTC

- Intel® 14th/ 13th/ 12th-Gen Core™ processor
- 4x M12/ 4x RJ45/ 8x RJ45 PoE+ ports
- 8V-48V DC input
- Single-slot PCIe Cassette



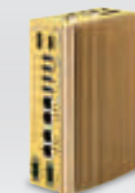
Nuvo-7200VTC

- Intel® 9th/ 8th-Gen Core™ processor
- 4x M12/ 4x RJ45/ 8x RJ45 PoE+ ports
- 8V-35V DC input
- Single-slot PCIe Cassette



Nuvo-2615RL

- Intel Atom® x6425E processor
- 4x M12 PoE+ ports
- 43V-160V DC input with 1500Vdc insulation
- 2500Ws SuperCAP Power Backup



POC-751VTC

- Intel® Core™ i3-N305
- 4x RJ45 PoE+ ports
- 8V-35V DC input
- Supports OpenVINO™

Non-GPU Autonomous Shuttle Rugged Computing & V2X Integration

Overview

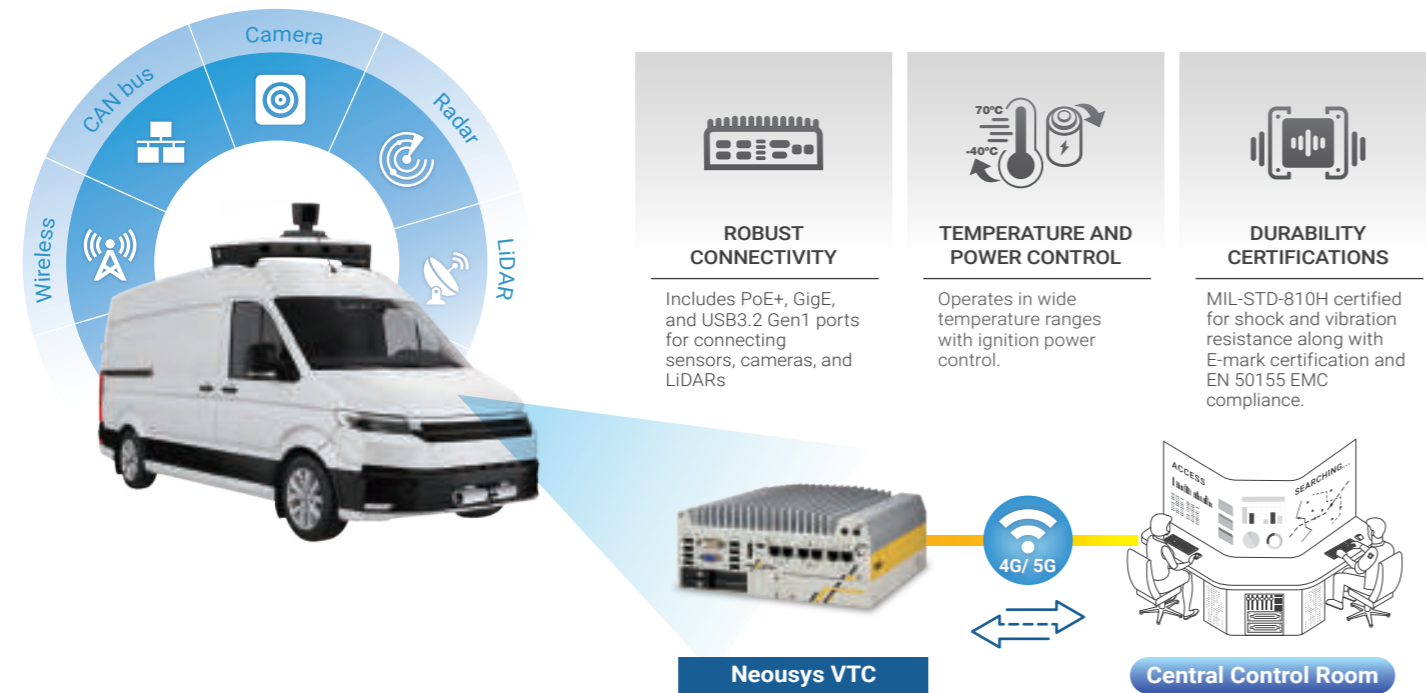
In a bustling city sector, an innovative autonomous shuttle bus glides through the streets, designed to navigate without the high costs of artificial intelligence. This smart vehicle, outfitted with sensors, cameras, and LiDARs, relies on robust CPU-based software algorithms to process data efficiently. By utilizing V2X communication through WiFi or 4G/5G networks, it seamlessly receives traffic updates and incident alerts, allowing it to dynamically adjust its route and avoid traffic jams.

To achieve this, the onboard computer requires:

- Significant processing power to handle timely imagery data.
- Extensive connectivity to link with sensors, cameras, and LiDARs.
- V2X functionality for real-time data input.
- A rugged design to withstand shock, vibration, vehicle power fluctuations, and diverse weather conditions.



The Computer Platform



Streamlined Electric Bus Management Reliable Monitoring & Integration Solutions

Overview

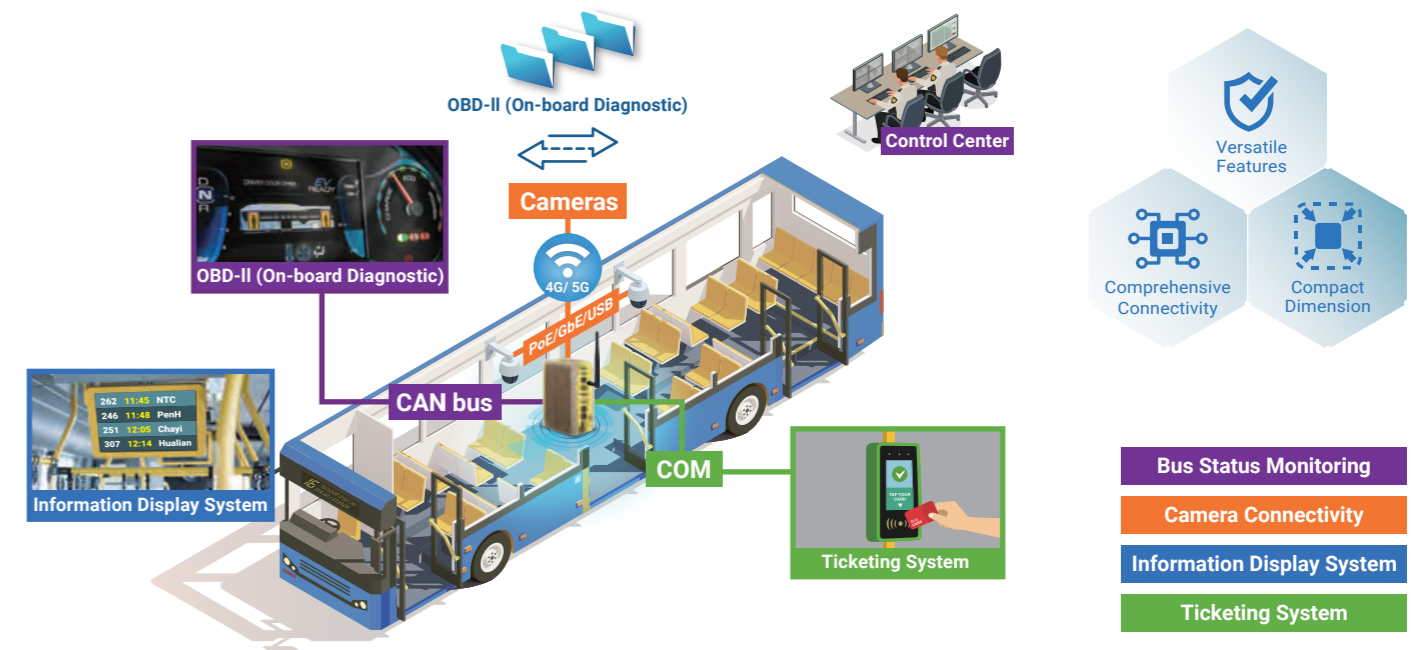
Electric buses are setting new standards in quiet, near emission-free public transport. Imagine buses that can operate for up to 24 hours, using advanced technology to efficiently manage battery life and recharging schedules. An onboard computer monitors system performance, provides transportation information, and ensures connectivity, while a control center oversees operations. With their low-noise and zero-emission features, these electric buses are perfect for daily city center use.

For this vision to succeed, the onboard computer must:

- Withstand environmental challenges: High temperatures, shock, vibration, and confined spaces.
- Meet communication requirements: Wireless 4G/5G, V2X functionality, and WiFi for onboard users.
- Provide functional capabilities: Display output, ticketing system, OBD-II, and PoE/GbE/USB camera connectivity.
- Address space and power concerns: Minimize space occupation, and avoid multi-system deployment with extra cabling.

The Computer Platform

- Rugged Design: Built to endure harsh environments with patented heat dissipation and shock/vibration resistance.
- Comprehensive Connectivity: Includes Power over Ethernet, USB ports, video output, expansion slots, CAN bus, and COM ports.
- Versatile Features: Offers wide-temperature operation, ignition control, and certifications (E-Mark certified and EN 50155 EMC compliance).
- Flexible Deployment: Adaptable for various in-vehicle and mass transportation systems.



Product Selection



Nuvo-9100VTC

- Intel® 14th/ 13th/ 12th-Gen Core™ processor
- 4x M12/ 4x RJ45/ 8x RJ45 PoE+ ports
- 8V-48V DC input



POC-751VTC

- Intel® Core™ i3-N305
- 4x RJ45 PoE+ ports
- 8V-35V DC input
- Supports OpenVINO™



POC-551VTC

- AMD Ryzen™ V1605B
- 4x RJ45 PoE+ ports
- 8V-35V DC input



POC-451VTC

- Intel Atom® x6425E
- 2x RJ45 PoE+ ports
- 8V-35V DC input

Specification Table



Model Name	Nuvo-9100VTC	Nuvo-9200VTC	Nuvo-7100VTC	Nuvo-7200VTC/ 7250VTC	
Chassis	Dimensions (W x D x H)	240 x 225 x 84 mm	240 x 225 x 103 mm	240 x 225 x 84 mm	
	Weight	3.7 kg	3.9 kg	3.7 kg (Nuvo-7200VTC) 4.1 kg (Nuvo-7250VTC)	
	Chassis Construction	Aluminum alloy with heavy duty metal	Aluminum alloy with heavy duty metal	Aluminum alloy with heavy duty metal	
System	Processor	Intel® 14th-Gen Core™ CPU Intel® 13th-Gen Core™ CPU Intel® 12th-Gen Core™ CPU Intel® Pentium® CPU Intel® Celeron® CPU	Intel® 14th-Gen Core™ CPU Intel® 13th-Gen Core™ CPU Intel® 12th-Gen Core™ CPU Intel® Pentium® CPU Intel® Celeron® CPU	Intel® Core™ i7-9700TE/ i7-8700T Intel® Core™ i5-9500TE/ i5-8500T Intel® Core™ i3-9100TE/ i3-8100T	
	Chipset	Intel® Q670E	Intel® Q670E	Intel® Q370	
	Graphics	Intel® UHD Graphics 770	Intel® UHD Graphics 770	Intel® HD Graphics 630	
	Memory	Up to 64 GB DDR5 4800	Up to 64 GB DDR5 4800	Up to 64 GB DDR4-2666	
I/O Interface	PoE	IEEE 802.3at (25.5W) for 4x/ 8x GbE ports via M12 X-coded or RJ45	IEEE 802.3at (25.5W) for 4x/ 8x GbE ports via M12 X-coded or RJ45	IEEE 802.3at (25.5W) for 4x/ 8x GbE ports	
	Ethernet	1x 2.5GbE by Intel® I225-IT 1x GbE by Intel® I219-LM 4x/ 8x by Intel® I225 or I210	1x 2.5GbE by Intel® I225-IT 1x GbE by Intel® I219-LM 4x/ 8x by Intel® I225 or I210	2x GbE by Intel® I219 and I210 (RJ-45) 4x/ 8x GbE by Intel® I210 (M12 X-coded or RJ-45)	
	Video Port	1x VGA 1x DVI-D 1x DisplayPort	1x VGA 1x DVI-D 1x DisplayPort	1x VGA 1x DVI-D 1x DisplayPort	
	Serial Port	2x RS-232/422/485 2x RS-232	2x RS-232/422/485 2x RS-232	2x RS-232/422/485 2x RS-232	
	USB 2.0	2	2	1 (internal)	
	USB 3.2/ USB 3.1	7 (incl. 1x 20Gbps type-C)	7 (incl. 1x 20Gbps type-C)	8	
	Audio	1x mic-in and speaker-out	1x mic-in and speaker-out	1x mic-in and speaker-out	
	CAN Bus	1x isolated CAN 2.0 port	1x isolated CAN 2.0 port	1x isolated CAN 2.0 port	
	Digital I/O	4 DI + 4 DO Polling, Change of State (COS)	4 DI + 4 DO Polling, Change of State (COS)	4 DI + 4 DO Polling, Change of State (COS)	
	Storage Interface	SATA HDD	1x 2.5" HDD/ SSD 1x hot-swap tray for 2.5" HDD/ SSD	2x hot-swap tray for 2.5" HDD/ SSD	2x hot-swap tray for 2.5" HDD/ SSD
		mSATA	-	-	1 (mux. with mini-PCIe)
		M.2 (M-key)	1 (Gen4 x4)	1 (Gen4 x4)	1
Mini PCI-E		3	3	3	
Expansion Bus	M.2 (B-key/ E-Key)	2x M.2 B-key	2x M.2 B-key	2x M.2 B-key	
	SIM	5	5	6	
	MezIO®	-	-	-	
	PCI/PCI Express	-	1x PCIe x16 slot@Gen3, 16-lanes PCIe signal in Cassette	1x PCIe x16 slot@Gen3, 16-lanes (Nuvo-7200VTC) 1x PCIe with PB-2500J pre-installed (Nuvo-7250VTC)	
Power Supply	DC Input	8V to 48V DC	8V to 48V DC	8V to 35V DC with SuperCAP UPS (Nuvo-7250VTC)	
	Ignition Control	Built-in	Built-in	Built-in	
Environmental	Operating Temperature	with 35W CPU -40°C ~ 70°C (with 1 memory module installed) -40°C ~ 60°C (with 2 memory modules installed) with 65W CPU -40°C ~ 50°C (configured as 65W TDP with 2-slots memory)	with 35W CPU -40°C ~ 70°C (with 1 memory module installed) -40°C ~ 60°C (with 2 memory modules installed) with 65W CPU -40°C ~ 50°C (configured as 65W TDP with 2-slots memory)	-40°C ~ 70°C	
	Certification	E-Mark, EN50121, EN45545, CE/ FCC	E-Mark, EN50121, EN45545, CE/ FCC	E-Mark, EN50121, CE/ FCC	



Model Name	Nuvo-2610VTC	Nuvo-2615RL	POC-751VTC	POC-551VTC	POC-451VTC		
Chassis	Dimensions (W x D x H)	205 x 155 x 58 mm (Nuvo-2610VTC) 205 x 155 x 86 mm (Nuvo-2611VTC) 205 x 155 x 86 mm (Nuvo-2612VTC)	205 x 155 x 86 mm	176 x 116 x 64 mm	176 x 116 x 64 mm	153 x 108 x 72 mm	
	Weight	1.9 kg (Nuvo-2610VTC) 2.5 kg (Nuvo-2611VTC) 2.3 kg (Nuvo-2612VTC)	2.7 kg	1.7 kg	1.3 kg	1.4 kg	
	Chassis Construction	Aluminum alloy with heavy duty metal	Aluminum alloy with heavy duty metal	Aluminum alloy with heavy duty metal	Aluminum alloy with heavy duty metal	Aluminum alloy with heavy duty metal	
System	Processor	Intel® Atom® x6425E	Intel® Atom® x6425E	Intel® Core™ i3-N305	AMD Ryzen™ V1605B	Intel® Atom® x6425E	
	Chipset	-	-	-	-	-	
	Graphics	Intel® UHD Graphics	Intel® UHD Graphics	Intel® UHD Graphics	Vega GPU with 6 compute units	Intel® UHD Graphics	
	Memory	Up to 32GB DDR4-3200	Up to 32GB DDR4-3200	Up to 16GB DDR5-4800	Up to 16 GB DDR4-2400	Up to 32GB DDR4-3200	
I/O Interface	PoE	IEEE 802.3at (25.5W) for 4x GbE ports via M12	IEEE 802.3at (25.5W) for 4x GbE ports via M12	IEEE 802.3at (25.5W) for 4x GbE ports	IEEE 802.3at (25.5W) for 4x GbE ports	IEEE 802.3at (25.5W) for 2x GbE ports	
	Ethernet	4x GbE by Intel® I210	4x GbE by Intel® I210	4x GbE by Intel® I350	4x GbE by Intel® I350	3x 2.5GBASE-T by Intel® I225	
	Video Port	1x DVI-I	1x DVI-I	1x DP++ 1x HDMI	1x VGA 1x DisplayPort	2x DisplayPort	
	Serial Port	1x isolated RS-485 3x 3-wire RS-232 or 1x RS-422/485	1x isolated RS-485 3x 3-wire RS-232 or 1x RS-422/485	1x RS-232/422/485 3x 3-wire RS-232 or 1x RS-422/485	1x RS-232/422/485 3x 3-wire RS-232	1x RS-232/422/485 3x 3-wire RS-232	
	USB 2.0	2	2	-	-	2	
	USB 3.2/ USB 3.1	1	1	4	4	2	
	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	1x mic-in and speaker-out	
	CAN Bus	-	-	2x isolated CAN 2.0 port, supporting SocketCAN in Linux	1x CAN 2.0 port	-	
	Digital I/O	4 DI + 4 DO	4 DI + 4 DO	4 DI + 4 DO	4 DI + 4 DO Polling, Change of State (COS)	4 DI + 4 DO Polling, Change of State (COS)	
	Storage Interface	SATA HDD	1x front-accessible HDD tray for 2.5" HDD/ SSD	1x front-accessible HDD tray for 2.5" HDD/ SSD	-	-	-
		mSATA	-	-	-	1x mSATA	-
		M.2 (M-key)	1	1	1	1	2
Mini PCI-E		2	2	2	3	1	
Expansion Bus	M.2 (B-key/ E-Key)	1x M.2 B-key	1x M.2 B-key	-	1x M.2 B-key	1x M.2 B-key 2x M.2 E-key	
	SIM	2	2	2	4	2	
	MezIO®	-	-	-	-	-	
	PCI/PCI Express	1x PCIe x4 slot @ Gen3, 2-lanes PCIe signals in Cassette (Nuvo-2612VTC only)	1x PCIe with PB-2500J pre-installed	-	-	-	
Power Supply	DC Input	8V to 35V DC	43V to 160V DC	8V to 35V DC	8V to 35V DC	8V to 35V DC	
	Ignition Control	Built-in	Built-in	Built-in	Built-in	Built-in	
Environmental	Operating Temperature	-40°C ~ 70°C	-40°C ~ 70°C	-40°C ~ 70°C	-40°C ~ 70°C	-40°C ~ 70°C	
	Certification	E-Mark, EN50121, CE/ FCC	EN50155, EN45545, CE/ FCC	E-Mark, EN50121, CE/ FCC	E-Mark, EN50121, EN45545, CE/ FCC	E-Mark, CE/ FCC	