Nuvo-2610VTC Series

Intel® Elkhart Lake Atom® x6425E In-Vehicle Computer with 4x M12 PoE+ ports and 15mm 2.5" HDD/SSD support

Preliminary

Key Features

· **Intel® Elkhart Lake Atom® x6425E quad-core 2.0GHz/ 3.0GHz 12W processor**
· **Rugged -40°C to 70°C fanless operation, compliant with EN 50155 Class OT4**
· **4x PoE+ GbE ports via M12 x-coded connectors**
· **1x front-accessible 2.5" 15mm HDD tray and 1x M.2 2280 SATA SSD**
· **1x M.2 3042/3052 B Key for 4G/5G mobile broadband**
· **2x full-size mini-PCIe sockets for WIFI/CAN/GNSS modules**
· **8-35V wide-range DC input with built-in ignition power control**

Introduction

The Nuvo-2610VTC series is a rugged Intel® Atom®-based in-vehicle computer that incorporates four M12 Gigabit PoE+ connectors and one front-accessible 2.5" HDD tray, supporting up to 15mm height HDD/SSD. It is designed to fulfill multi-purpose applications such as on-road, off-highway, or railway applications from mobile gateways, data loggers, to network video recorders (NVR).

Powered by Intel® Elkhart Lake Atom® x6425E quad-core CPU, the Nuvo-2610VTC series delivers 1.8x the CPU performance when compared with the previous generation. To provide robust Ethernet connectivity, the Nuvo-2610VTC series offers four Gigabit PoE+ ports via M12 x-coded connectors and two USB 3.1 ports with the screw-lock mechanism. In addition to the internal M.2 2280 SATA SSD for system storage, Nuvo-2610VTC also has one front-accessible 2.5" HDD tray accommodating a 2.5" SATA HDD/SSD with up to 15mm height and 5TB capacity. For internal expansion, it provides two mini-PCIe sockets for WiFi, GNSS, and CAN modules plus one M.2 3042/3052 B Key socket for 4G/5G mobile broadband module.

To meet versatile in-vehicle deployment conditions, the Nuvo-2610VTC series comes in three variants. In addition to Nuvo-2610VTC, the Nuvo-2611VTC is equipped with an embedded SuperCAP UPS to withstand power interruptions or voltage fluctuations on the train and can sustain the system for a proper shutdown when the power is cut-off. The Nuvo-2612VTC has a Cassette module for an additional Gen3 x2 PCIe slot that can accommodate an AI accelerator module with a tailor-made thermal solution. With the AI accelerator, it becomes a fanless GPU computer for intelligent video analytics or a data logger with perception capability.
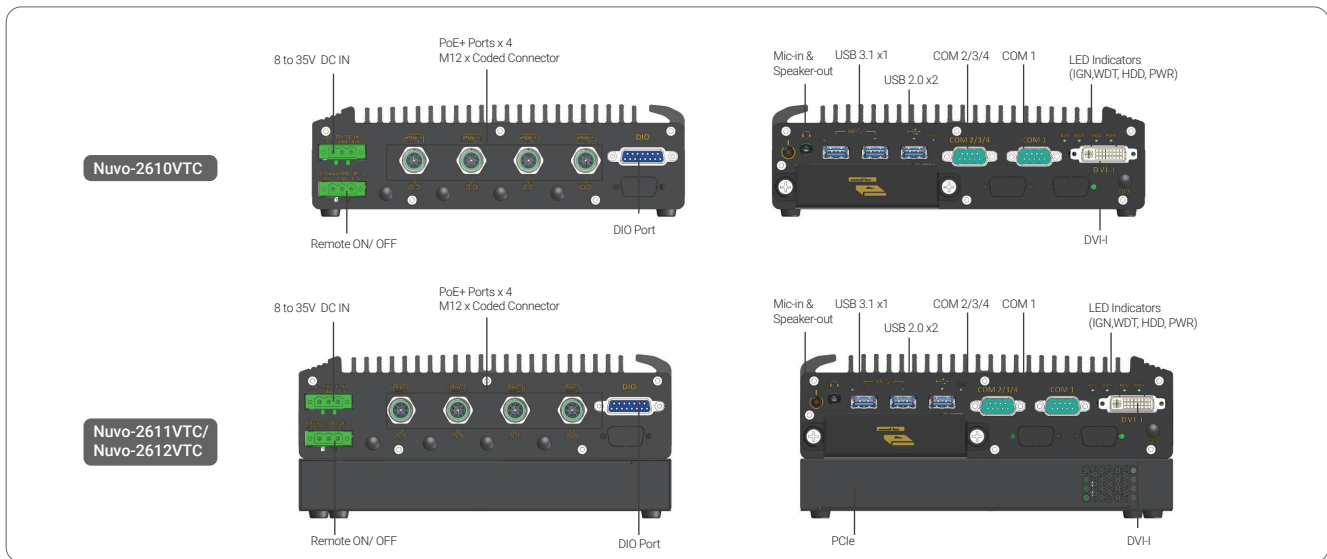
By integrating an Intel Atom® quad-core x6425E, -40°C to 70°C fanless operations, wide-range DC input with ignition control, and 4G LTE / 5G NR mobile broadband connectivity, the Nuvo-2610VTC series is an ideal rugged, multi-purpose, in-vehicle computer for aftermarket on-road in-vehicle applications. With rugged M12 PoE+ connectivity and built-in SuperCAP UPS, the Nuvo-2610VTC series can withstand harsh and unstable electrical environments for off-highway applications such as trucks, cargo vehicles, and rolling stock.
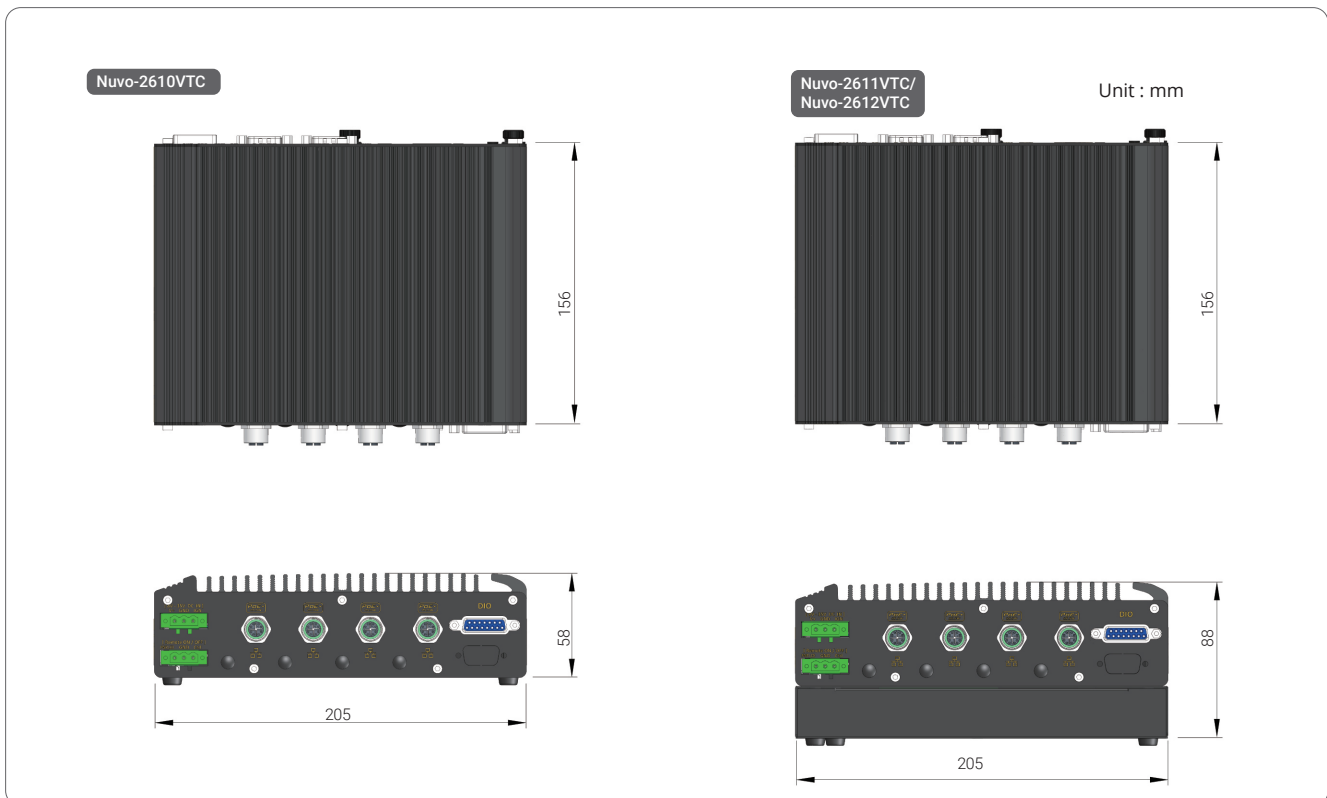
Specifications

System Core

Processor	Intel® Elkhart Lake Atom® x6425E quad-core 2.0GHz/3.0GHz 12W processor
Graphics	Integrated Intel® UHD Graphics
Memory	Up to 32 GB DDR4-3200 SDRAM by one SODIMM socket

Panel I/O Interface

PoE	4x IEEE 802.3at (25.5W) Gigabit PoE+ ports by Intel I210 via M12 x-coded connectors
Video Port	VGA and DVI dual display outputs via DVI-I connector
USB 3.1	1x USB 3.1 gen1 ports with screw-lock
USB 2.0	2x USB 2.0 port with screw-lock
Serial Port	1x isolated RS-485 port with 15 kV ESD protection (COM1) 3x 3-wire RS-232 ports (COM2/3/4) or 1x RS-422/485 (COM2)
Audio	1x 3.5 mm jack for mic-in and speaker-out
Isolated DIO	4-CH isolated DI and 4-CH isolated DO

Expansion Bus

PCI Express	1x PCIe x4 slot @Gen3, 2-lane PCIe signal in Cassette (Nuvo-2612VTC only)
Mini-PCIe	1x full-size mini PCI Express socket with PCIe and USB 2.0 signal 1x full-size mini PCI Express socket with USB 2.0 signal
M.2 B key	1x M.2 3042/3052 B key (USB 3.1 + USB 2.0) for 4G/5G module with dual internal micro SIM socket

Storage Interface

M.2 SATA	1x M.2 2280 M key (SATA interface only) socket for SATA SSD installation
SATA HDD	1x front-accessible HDD tray for 2.5" HDD/ SSD installation (up to 15mm height)

Power Supply

DC Input	1x 3-pin pluggable terminal block for 8V to 35V DC input with built-in ignition power control (IGN/GND/V+)
Remote Ctrl. & LED Output	1x 3-pin pluggable terminal block for remote control and PWR LED output

Power Backup

Capacity	2500 watt-second (Nuvo-2611VTC only)

Mechanical

Dimension	205 mm (W) x 156 mm (D) x 58 mm (H) (Nuvo-2610VTC) 205 mm (W) x 156 mm (D) x 86 mm (H) (Nuvo-2611VTC, Nuvo-2612VTC)
Weight	1.9 kg (Nuvo-2610VTC) 2.5 kg (Nuvo-2611VTC) / 2.3 kg (Nuvo-2612VTC)
Mounting	Wall-mount (optional)

Environmental

Operating Temperature	-40°C ~ 70°C*. EN50155 Class OT4
Storage Temperature	-40°C ~85°C
Humidity	10%~90% , non-condensing
Vibration	Operating, MIL-STD-810G, Method 514.7, Category 4 (pending) IEC61373:2010, Category 1, Class B Body Mounted (part of EN 50155) (pending)
Shock	Operating, MIL-STD-810G, Method 516.7, Procedure I (pending) IEC61373:2010, Category 1, Class B Body Mounted (part of EN 50155) (pending)
EMC	EN 50155:2017, Clause 13.4.8 (pending) CE/FCC Class A, according to EN 55032 & EN 55035 (pending)

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

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Appearance

Dimensions

Unit : mm

Ordering Information

Model No.	Product Description
Nuvo-2610VTC	Intel® Elkhart Lake Atom® x6425E in-vehicle fanless computer with M12 PoE+ and 15mm 2.5" HDD/SSD support
Nuvo-2611VTC	Intel® Elkhart Lake Atom® x6425E in-vehicle fanless computer with M12 PoE+, 15mm 2.5" HDD and built-in SuperCAP UPS
Nuvo-2612VTC	Intel® Elkhart Lake Atom® x6425E in-vehicle fanless computer with M12 PoE+, 15mm 2.5" HDD and single-slot PCIe Cassette

Optional Accessories

PA-120W-OW	120W AC/DC power adapter 20V/6A; 18AWG/120cm; cord end terminals for terminal block, operating temperature: -30 to 70°C.
PA-160W-OW	160W AC-DC power adapter 20V/8A; 18AWG/120cm; cord end terminals for terminal block, operating temperature: -30 to 70°C.
Wmkit-Nuvo-2600	Wall mounting kit for Nuvo-2600 and Nuvo-2610VTC series, including wall mounting brackets and screws
AccsyBx-FAN-Nuvo-2600E	Single fan kit for the PCIe cassette of Nuvo-2600 and Nuvo-2610VTC series, including one 25x25mm fan and screws