Nuvo-3100VTC Series

Intel® 3rd-Gen Core™ i7/i5 Fanless in-Vehicle Controller with 4x 802.3at PoE+ Ports and Dual-Drives RAID

Features

- 212 mm x 165 mm x 62 mm very compact size
- Intel® 3rd-Gen i7/i5 PGA-type processor
- 4x IEEE 802.3at (25.5W) Gigabit PoE+ ports
- Dual 2.5" SATA ports with one hot-swappble HDD tray
- Patented damping bracket* for in-vehicle installation
- 8 ~ 35V wide-range DC input and built-in ignition power control
- 3x mini-PCIe/mSATA slots for 3G/WIFI/GPS capability
- E-Mark and EN 50155/EN 50121-3-2 certificate

Introduction

Nuvo-3100VTC is a fanless controller with E-Mark and EN 50155/EN 50121-3-2 certificate for in-vehicle usage. It supports 3rd-Gen i7 quad-core CPU to provide extraordinary performance for emerging high-end requirements. It also integrates four IEEE 802.3at PoE+ ports to facilitate Ethernet connectivity and power IP cameras for surveillance applications.

Nuvo-3100VTC takes into account all demands of in-vehicle applications. It has very compact footprint to fit into restricted space. Its 8~35V wide-range DC input and enhanced surge protection make Nuvo-3100VTC highly robust when car power applied. Nuvo-3100VTC further incorporates built-in RAID supporting data striping (RAID 0) and data mirroring (RAID 1) for two 2.5" HDDs. You can also take advantage of the hot-swappable HDD tray for easy HDD replacement. For in-vehicle installation, our patented mounting bracket can absorb shock/vibration and extend overall system reliability.

Combining superior performance, PoE+ and comprehensive design, Nuvo-3100VTC presents more possibilities for innovative in-vehicle applications!
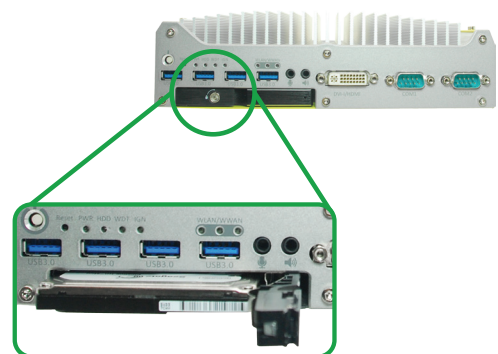
Product Highlights

4x 802.3at PoE+ Ports

Power Over Ethernet, or PoE, is a technology that passes electrical power along with data over a single CAT5/6 cable. Compliant with IEEE 802.3at PoE+ standard, Nuvo-3100VTC can supply 25.5W to each of its four ports. For in-vehicle surveillance applications, PoE+ significantly reduces the complexity of camera installation as only one CAT5/6 cable is enough to connect and power the camera.
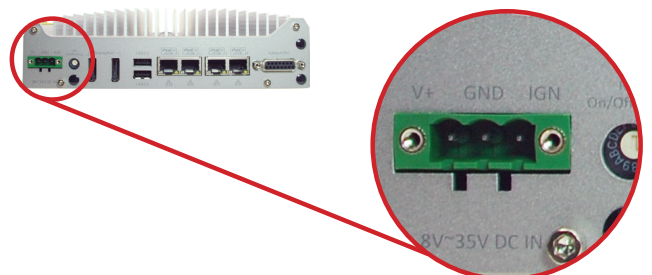
RAID with Hot-Swappable HDD Tray

Nuvo-3100VTC has built-in hardware RAID to enhance reliability and efficiency of disk access. It maintains two 2.5" SATA drives and supports RAID 0 (higher throughput) and RAID 1 (data redundancy). In addition, Nuvo-3100VTC hosts a hot-swappable HDD tray to accommodate one of SATA drives for storing portable information.

Comprehensive Power Design for In-Vehicle Applications

Aiming at in-vehicle usage, Nuvo-3100VTC has comprehensive power circuitry design. It accepts 8~35VDC input range with enhanced surge protection to work reliably with battery power on the car (12V) or bus/truck (24V). Ignition power control is implemented to respond ACC signal according to configurable power on/off delay.

* R.O.C Patent No.M491752

Applications

Specifications

System Core

Processor	Supports the following CPU · Intel® Core™ i7-3610QE (2.3/3.3 GHz, 6 MB cache) · Intel® Core™ i5-3610ME (2.7/3.3 GHz, 3 MB cache) · Intel® Celeron™ 1020E (2.2 GHz, 2 MB cache)
Chipset	Intel® QM77 Platform Controller Hub with AMT & RAID support
Graphics	Integrated Intel® HD Graphics 4000 Controller
Memory	1x 204-pin SO-DIMM sockets, up to 8GB DDR3 1333/1600 MHz SDRAM

I/O Interface

Ethernet	1x Gigabit Ethernet port by Intel® 82579LM, supporting Wake-on-LAN 3x Gigabit Ethernet ports by Intel® i210
PoE	Compliant to IEEE 802.3at (25.5W) with per-port power on/off control 75W total power budget for 4x PoE+ ports
Video Port	1x DVI-I connector for VGA/DVI output, supporting 2048x1536 (VGA) or 1920x1080 (DVI) resolution 2x DisplayPort, supporting 2560x1600 resolution
USB	4x USB 3.0 ports and 2x USB 2.0 ports
Serial Port	2x software-programmable RS-232/422/485 (COM1 & COM2)
Isolated DIO	4x isolated DI with COS interrupt and 4x isolated DO
Audio	1x mic-in and 1x speaker-out

Storage Interface

SATA HDD	1x Internal SATA port for 2.5" HDD/SSD 1x Hot-swappable HDD tray for 2.5" HDD/SSD
mSATA	1x full-size mSATA (SATA/USB/W_DISABLE#) with USIM socket

Expansion Bus

Mini PCI-E	1x full-size mini PCI Express socket with USIM socket 1x half-size mini PCI Express socket

Power Supply & Ignition Control

DC Input	8~35V DC input via 3-pin pluggable terminal block
Ignition Control	Ignition power control with user-selectable on/off delay

Mechanical

Dimension	212 mm (W) x 165 mm (D) x 62 mm (H)
Weight	2.8 kg (including one 2.5" HDD and DDR3 SO-DIMM)
Mounting	Damping bracket (Standard) or DIN-Rail mounting (optional)

Environmental

		i7-3610QE, 100% CPU loading	i5-3610ME, 100% CPU loading	Celeron 1020E, 100% CPU loading
Operating Temperature	Maximal Performance	-25°C ~ 50°C**/***	-25°C ~ 60°C**/***	-25°C ~ 70°C**/***
	Reduced Performance	-25°C ~ 60°C**/***	-25°C ~ 70°C**/***	-25°C ~ 70°C**/***
	Extended Temperature	-25°C ~ 70°C**/***	-25°C ~ 70°C**/***	-25°C ~ 70°C**/***
Storage Temperature	-40°C ~85°C			
Humidity	10%~90% , non-condensing			
Vibration	Operating, 1 Grms, 5-500 Hz, 3 Axes (w/ HDD, according to IEC60068-2-64) Operating, 5 Grms, 5-500 Hz, 3 Axes (w/ SSD, according to IEC60068-2-64)			
Shock	Operating, 50 Grms, Half-sine 11 ms Duration (w/ SSD, according to IEC60068-2-27)			
Certification	E-Mark for vehicle applications EN 50155/EN 50121-3-2 CE/FCC Class A, according to EN 55022 & EN 55024			

** The 100% CPU loading is applied using Passmark® BurnInTest™ v7.0. For detail testing criteria,
please contact Neousys Technology*
*** For sub-zero operating temperature, a wide temperature HDD drive or Solid State Disk (SSD) is required.

Order Information

Nuvo-3100VTC-I7QC
Intel® Core™ i7-3610QE fanless in-vehicle controller with 4x 802.3at PoE+ ports and dual-drives RAID

Nuvo-3100VTC-I5DC
Intel® Core™ i5-3610ME fanless in-vehicle controller with 4x 802.3at PoE+ ports and dual-drives RAID

Nuvo-3100VTC-C1020
Intel® Celeron™ 1020E fanless in-vehicle controller with 4x 802.3at PoE+ ports and dual-drives RAID

Option of DIN-Rail mounting kit

120W AC/DC power adapter

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