NEOUSYS TECHNOLOGY

Nuvo-2615RL Series

EN50155 & EN45545 Intel® Elkhart Lake Atom® x6425E Railway Computer Supporting 110 VDC Input and 4x M12 PoE+

Key Features

· **Compliant with EN 50155 mandatory tests and EN 45545-2**
· **Rugged -40°C to 70°C fanless operations, compliant with EN 50155 Class OT4**
· **43V to 160V wide-range DC input with 1500Vdc insulation**
· **Intel® Elkhart Lake Atom® x6425E quad-core 2.0GHz/ 3.0GHz 12W processor**
· **4x PoE+ GbE ports via M12 x-coded connectors**
· **Built-in SuperCAP UPS for power interruptions > 30 seconds (Nuvo-2615RL only)**
· **1x front-accessible 2.5" 15mm HDD tray and 1x M.2 2280 SATA SSD**
· **2x full-size mini-PCIe sockets and 1x M.2 3042/3052 B Key**

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Introduction

The Nuvo-2615RL series is an EN50155 and EN45545-compliant, fanless Intel® Atom®-based railway computer for video-based rolling stock applications such as NVR (network video recorder) and video analytics.

Nuvo-2615RL has a dedicated thermal design to meet EN50155 OT4 class (-40°C to 70°C) fanless operation with max CPU performance and up to 50W PoE+ delivery. To overcome the challenging railway conditions, from voltage fluctuations to power outage interruptions, Nuvo-2615RL is equipped with an isolated wide 43V to 160V DC input design and a built-in SuperCAP UPS to sustain more than 30 seconds of operation time without power supply. If power outage time exceed the sustainable duration, the internal microcontroller (MCU) will trigger a software shutdown before running out of SuperCAP energy to protect the hardware, data, and minimize maintenance costs.
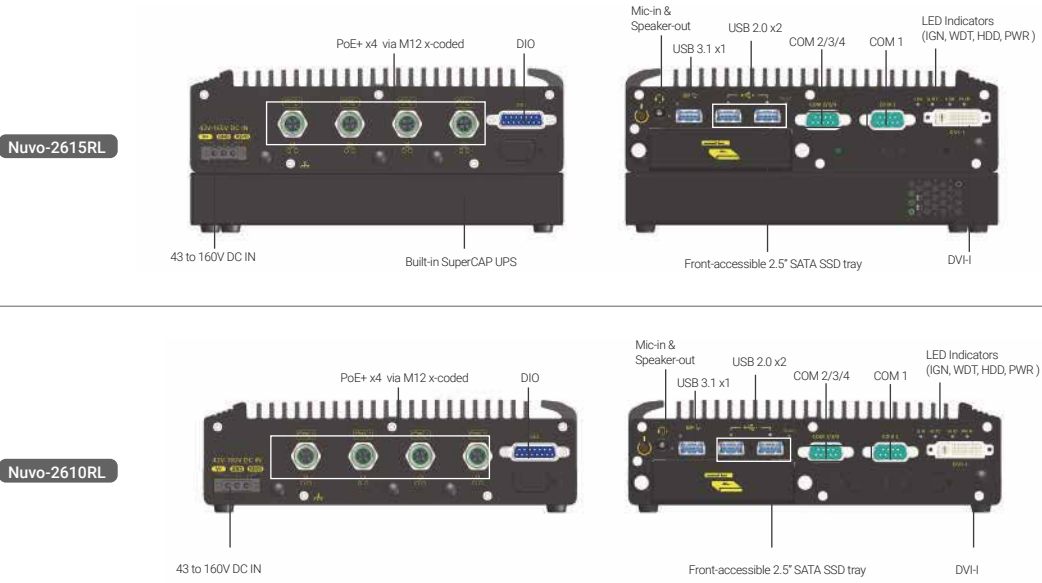
Powered by Intel® Elkhart Lake Atom® x6425E quad-core CPU, the Nuvo-2615RL series delivers 1.8x the CPU performance compared with Intel's previous Atom generation, Apollo Lake. The Nuvo-2615RL series features 4x PoE+ GbE ports with up to 50W total power budget for IP camera connectivity. In addition to the internal M.2 2280 SATA SSD for system storage, Nuvo-2615RL has one front-accessible 2.5" HDD tray accommodating a 2.5" SATA HDD/SSD up to 15mm in height and 5TB in capacity. For internal expansion, it provides two mini-PCIe sockets for WiFi, GNSS, and CAN modules. There is also an M.2 3042/3052 B Key socket for 4G/5G mobile broadband modules.

Integrating an Intel Atom® quad-core x6425E, -40°C to 70°C fanless operations, M12 PoE+ connectivity, up to 5TB data storage capacity, 2500 watt-second SuperCAP UPS, 43V to 160V wide-range DC input, and EN50155 and EN45545 compliance, the Nuvo-2615RL series is the ideal rugged transportation computer for vision-based rolling stock applications.
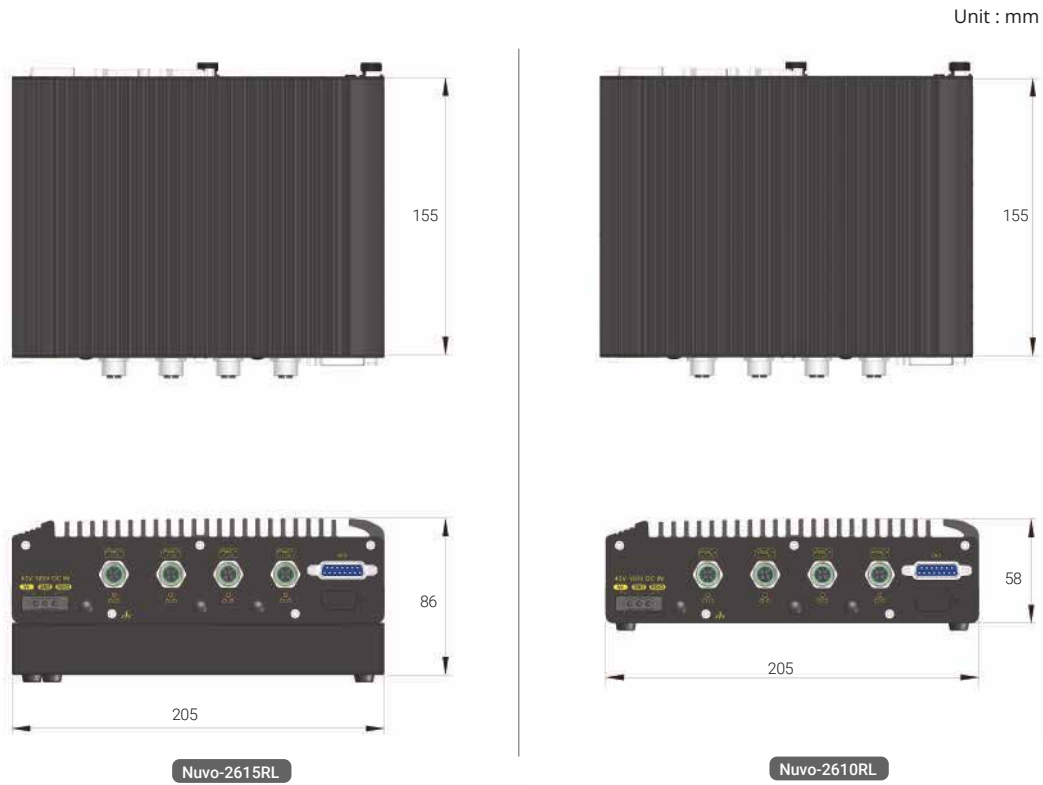
Specifications

System Core	
Processor	Intel® 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
TPM	Supports fTPM 2.0

Panel I/O Interface	
Ethernet Port	4x Gigabit Ethernet ports via M12 x-coded connectors by Intel® I210
PoE Capability	In compliant with IEEE 802.3at PoE+ PSE, maximum 25.5W output on single PoE+ port. Total PoE+ power budget: 50W
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	
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 isolated 43V to 160V DC input

Power Backup	
Capacity	2500 watt-second (Nuvo-2615RL Only)

Mechanical	
Dimension	205 mm (W) x 155 mm (D) x 58 mm (H) (Nuvo-2610RL) 205 mm (W) x 156 mm (D) x 86 mm (H) (Nuvo-2615RL)
Weight	2.1kg (Nuvo-2610RL) 2.7kg (Nuvo-2615RL)
Mounting	Damping bracket (default) Wall-mount (optional)

Environmental	
Operating Temperature	-40°C to 70°C*, compliant with EN50155 Class OT4
Storage Temperature	-40°C to 85°C
Humidity	10% to 90%, non-condensing
Vibration	IEC61373:2010, Category 1, Class B Body Mounted (part of EN 50155)
Shock	IEC61373:2010, Category 1, Class B Body Mounted (part of EN 50155)
EMC	EN 50155:2017, Clause 13.4.8 CE/FCC Class A, according to EN 55032 & EN 55035
EN50155	All mandatory sections of EN 50155:2017 Nuvo-2610RL: EN50155 Class S1, EN50155 C1 Nuvo-2615RL: EN50155 Class S3, EN50155 C2
EN45545	EN 45545-2 (Fire protection on railway vehicles)

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

Last updated: 26 - Jun 2024

Appearance

Nuvo-2615RL

PoE+ x4 via M12 x-coded   DIO

Mic-in & Speaker-out   USB 3.1 x1   USB 2.0 x2   COM 2/3/4   COM 1   LED Indicators (IGN, WDT, HDD, PWR)

43 to 160V DC IN   Built-in SuperCAP UPS   Front-accessible 2.5" SATA SSD tray   DVI-I

Nuvo-2610RL

PoE+ x4 via M12 x-coded   DIO

Mic-in & Speaker-out   USB 3.1 x1   USB 2.0 x2   COM 2/3/4   COM 1   LED Indicators (IGN, WDT, HDD, PWR)

43 to 160V DC IN   Front-accessible 2.5" SATA SSD tray   DVI-I

Dimensions

Unit : mm

155   155

86   58

205   205

Nuvo-2615RL   **Nuvo-2610RL**

Ordering Information

Model No.	Product Description
Nuvo-2610RL-H	EN50155 & EN45545 Intel® Elkhart Lake Atom® x6425E Railway Fanless Computer with 4x M12 PoE+ and 43V to 160V ultra-wide-range DC input
Nuvo-2615RL-H	EN50155 & EN45545 Intel® Elkhart Lake Atom® x6425E Railway Fanless Computer with 4x M12 PoE+ , 43V to 160V ultra-wide-range DC input, and built-in SuperCAP UPS