In-vehicle Computing

NEOUSYS TECHNOLOGY

Nuvo-2615RL Series

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

Preliminary

CE FC

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.
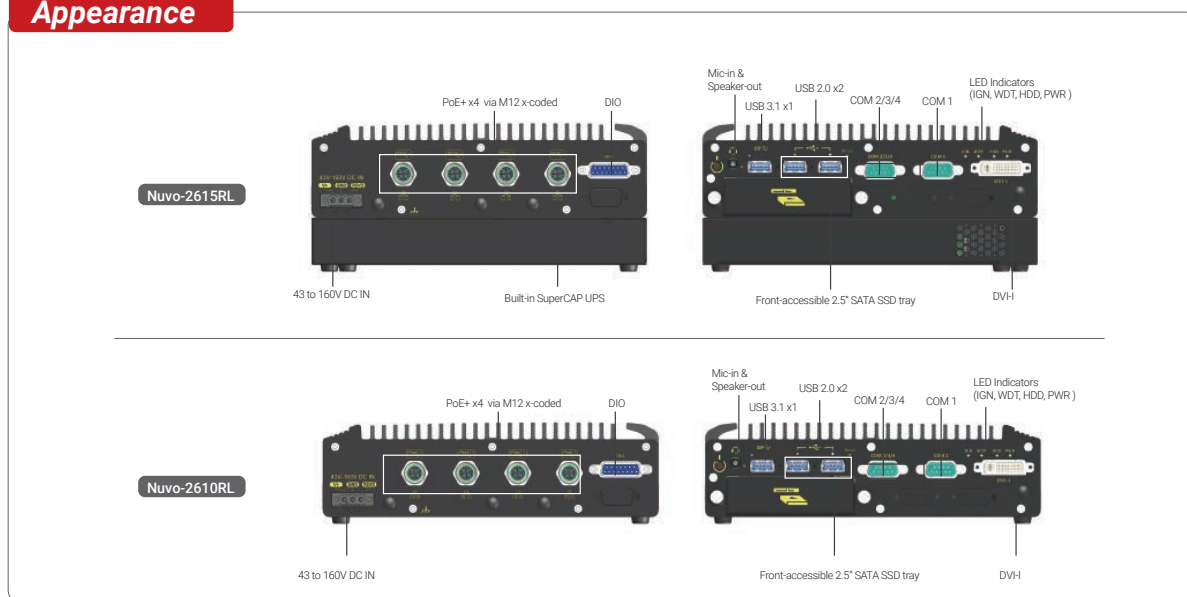
Specifications

System Core	
Processor	Intel® 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	
Power over Ethernet	4x IEEE 802.3at Gigabit PoE+ ports by Intel® I210 via M12 x-coded connectors
Total PoE+ power budget: 50W (Nuvo-2615RL-H)
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
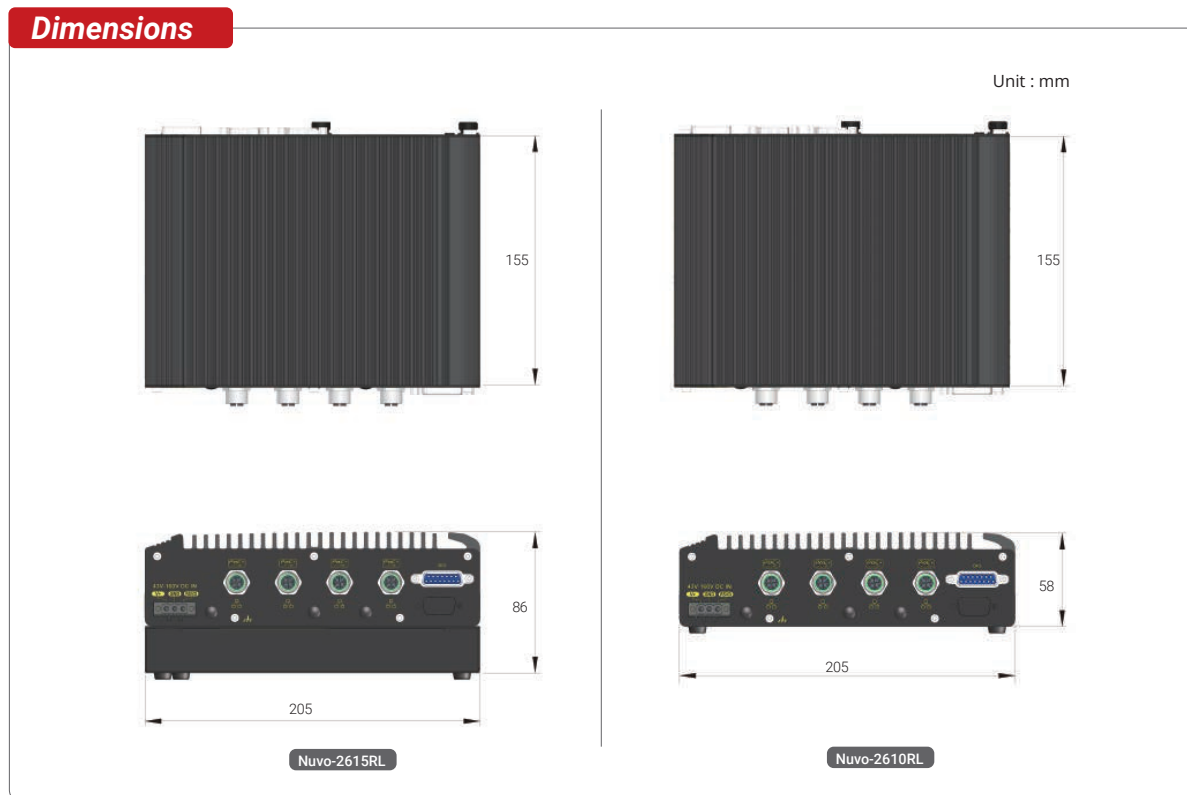| EN45545 | EN 45545-2 (Fire protection on railway vehicles) |

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

Last updated: 5 - Jun 2023

Nuvo-2615RL Series

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Appearance

Nuvo-2615RL

PoE+ x4 via M12 x-coded | DIO
43 to 160V DC IN | Built-in SuperCAP UPS

Mic-in & Speaker-out | USB 3.1 x1 | USB 2.0 x2 | COM 2/3/4 | COM 1 | LED Indicators (IGN, WDT, HDD, PWR)
Front-accessible 2.5" SATA SSD tray | DVI-I

Nuvo-2610RL

PoE+ x4 via M12 x-coded | DIO
43 to 160V DC IN

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

Preliminary

Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

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