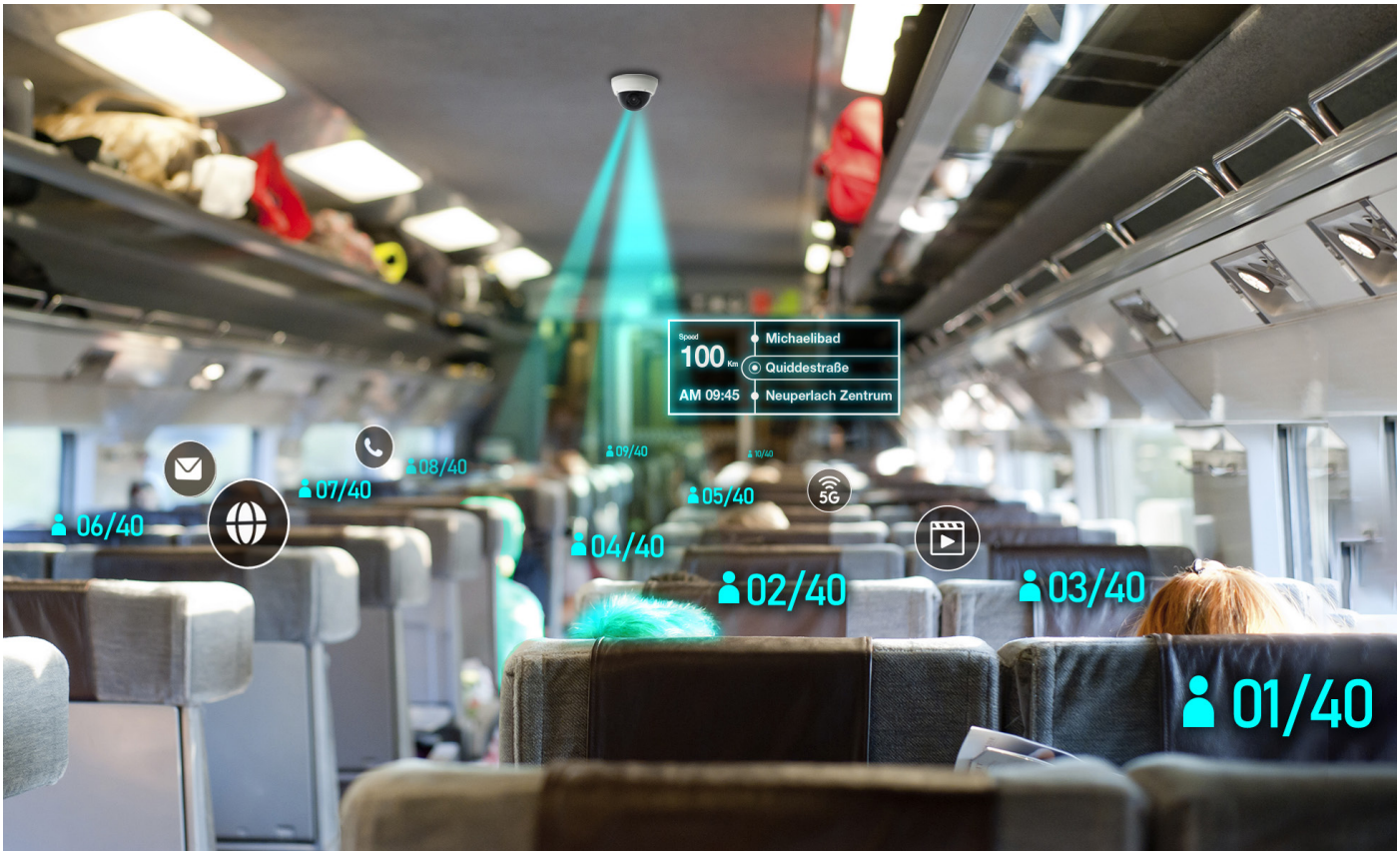
Directory

Data & Monitoring

Transforming Smart Railways with NEXCOM's nROK 7270 and nROK 7271 Intelligent Solutions



A vintage steam train bursts out of a fan-shaped depot, chugging towards a future where a 5G/Wi-Fi network-enabled smart railway takes centre stage, encapsulating an aura of momentum and futurism.

Rail travel, with the aid of mobile surveillance, has never been more secure and suitable for long journeys. We're entering a new era of smart railways, powered by edge AI. One of the driving forces behind this shift is NEXCOM, a leader in the application of smart railway technologies. Infused with a passion for progress and a mission to create a better, more connected future, NEXCOM has been instrumental in driving key technologies forward.

Modular Board Designs Enable Rapid Customisation

The standout features of smart railways are their modular board designs. These designs can fulfil all types of applications with existing module boards and can even develop new ones within just three months. The concept of modularisation, a cornerstone of

NEXCOM's nROK 7270 and 7271 systems equipped with the cutting-edge 12/13th generation Intel® Core™ i9 desktop processors, enables rapid response to unique client needs. A series of prepared module boards can be assembled to client specifications, offering swift delivery of customised solutions – crucial for smart railways.

Abundant I/O Designs Fulfil Infotainment, Safety and Edge AI Computing Applications

Consider a bustling city station. As a train glides on to a platform, passengers aboard are deep into their digital devices – streaming videos, reading news or catching up on work, from the uninterrupted onboard 5G/Wi-Fi network, powered by the nROK systems; the nROK systems can host expandable to four 5G/LTE modules, and expandable to three wireless modules. This increased bandwidth and capacity for concurrent users is crucial for managing large passenger loads, enhancing service quality and passenger satisfaction.

For infotainment applications, nROK 7270 and 7271 expansions can be requested to support two 10GbE M12 X-coded ports for backbones network. This is particularly useful for applications requiring large bandwidths, such as video-on-demand services where many passengers may be streaming simultaneously. Picture a group of friends aboard a cross-country train, watching their favourite TV series concurrently, due to the high-speed and low latency network facilitated by these systems. This rich infotainment experience is transforming the way passengers perceive rail travel.

Safety is a paramount concern in railway operations. Consequently, the nROK 7270 and 7271 systems, by default, come equipped with four 2.5GbE X-coded PoE+ ports while offering expanded capabilities. For instance, they can be expanded to include up to eight additional 1GbE M12 X/D-coded PoE+ ports for IP cameras, accommodating video surveillance, rear-view monitoring and coupling monitors.

Both nROK 7270 and nROK 7271 are equipped with expansion slots supporting Google Coral or HAILO AI accelerators, delivering AI functionalities from 4 to 26 TOPS. These accelerators facilitate real-time edge AI computing for various applications, including pantograph inspection, track obstacle intrusion inspection, rail track condition monitoring, and sign detection and classification.

nROK 7271 Features Power Isolation and Front/ Rear Board Replacement Options, Doubling Its Durability and Adaptability

The nROK 7271 further distinguishes itself with a unique ability to provide power isolation for 24–110VDC and optional up to 3s protection against temporary voltage dips, a feature critical for scenarios where input voltage variability may threaten equipment. The system's power isolation design fortifies it against potential damage from fluctuations, thus enhancing its robustness. Users are granted the flexibility to utilise this power isolation feature at the rear and to install modules at the front, accentuating the unique modular flexibility of the nROK 7271. This feature contributes significantly to the durability and lifespan of the equipment amidst voltage instability.

For users with more application requirements, such as 5G/Wi-Fi, PoE, 10GbE, daughter board expansion is also available. While module boards on the nROK 7270 can be replaced at the rear, the slightly taller nROK 7271 provides the additional advantage of front and rear board replacement options, thereby effectively doubling its adaptability.

Embody the Perfect Fusion of a 5G/Wi-Fi Network, Mobile Surveillance and Edge AI Technologies – Realise Future of Rail Travel with the nROK 7270 and 7271

With their modular designs, powerful computing capabilities and extensive edge AI functionalities, the nROK 7270 and nROK 7271 encapsulate NEXCOM's innovative approach. These robust systems withstand harsh environments and offer strong after-sales service, confirming NEXCOM's leading position in the industry. These systems remain premier choices for smart railways, embodying the perfect fusion of a 5G/Wi-Fi network, mobile surveillance and edge AI technologies. With NEXCOM's nROK 7270 and 7271, we are not just envisioning the future of rail travel; we are riding on it.

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Smart Railway Computer Solutions

Telematics for Transportation Security and Efficiency, Plus Passenger Satisfaction

This evolution drives the need for embedded computers to have high performance, longevity, and reliability, fitting perfectly with railway environments. NEXCOM is dedicated and offers train PC featuring AI-powered, 5G NR, Wi-Fi 6E wireless connectivity, anti-shock design, metal dust proof ability, stable & wide range power supply, industrial-grade reliability, and extended product life cycle.

nROK Series

- Railway Computers – EN50155
- 8/9/12/13th Gen Intel Core™/Xeon®, Intel Atom® CPU
- Fanless and rugged design
- 5G/LTE, Wi-Fi, BT, CAN, GPS + DR, PoE, and multi-SIM integration
- Optional isolated 24~110VDC power input
- AI applications with add-on GPU cards
- EN50155 & EN45545-2 certifications


nROK 7251


nROK 7252


nROK 7270


nROK 7271


nROK 1031-C2

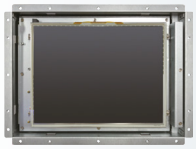

nROK 1030


nROK 6222


nROK 6221

vROK Series

- 10.4-inch all in one railway open frame panel computer – EN50155


vROK 3030

aROK Series

- Advanced AI Computers with GPU – EN50155
- 8th/9th Gen Intel® Core™/Xeon® CPU
- Designed for AI applications: driver assistance, track obstacle/intrusion detection, track maintenance, video analytics
- Selected NVIDIA GPU, Google TPU, and Hailo AI modules add-ons
- 5G/LTE, Wi-Fi, BT, CAN, GPS + DR, PoE, and multi-SIM integration
- EN50155 & EN45545-2 certifications

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aROK 5510


aROK 8110

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