NEXCOM Unleashes the Power of Edge AI Computing for Safer, Smarter Railways

nROK 7270 Empowers Smart Transportation Applications in Harsh Environments: Obstacle Intrusion Inspection and Track Condition Monitoring

FREMONT, CA, USA, October 3, 2023 /EINPresswire.com/ -- NEXCOM, a leading global supplier of intelligent in-vehicle appliances, announced today the launch of the nROK 7270 and nROK 7271, a potent and reliable Edge AI Platform for smart transportation that is designed to meet the growing demand for vision-based obstacle detection by high-speed camera and edge AI inference.

"The nROK 7270 and nROK 7271 embody NEXCOM's commitment to innovation by providing powerful computing capabilities, modular expansion design, full-scale connectivity, and extensive Edge AI functionalities," said Peter Yang, President of NEXCOM. "They are a game changer, delivering robust systems that are built to withstand harsh environments and adhere to strict railway standards. By embracing smart railway initiatives and new technologies, we are not only envisioning the future of rail travel – we are riding towards it."

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The nROK 7270 and nROK 7271 feature the latest Intel® 12th/13th Gen Core™ CPU with performance hybrid architecture and Intel® Thread Director, designed to power video streaming, wireless/5G communication, AI model inference, and integrated NVR/PIS applications for rolling stock and railways markets. The nROK 7270 also provides power isolation for 24~110VDC and up to 3-sec protection

against temporary voltage dips, a critical feature to combat input voltage variability that can shut down essential equipment. The system's power isolation design fortifies it against failure from fluctuation.

The nROK 7270 and nROK 7271 also feature a modular expansion design, providing an extensive array of interfaces available to power different smart transportation scenarios. This includes passenger WiFi, in-car infotainment, and surveillance systems with IP cameras using 1GbE and 2.5GbE with PoE+ LAN ports. The network to support these features for rolling stock is built on 10GbE LAN ports, while outbound communication bridges leverage mobile networks and 5G technology. Network routing and SD-WAN capabilities both optimize communication interfaces through trunking and link condition monitoring and signal control to sensors through serial communication, enabling complex networking applications. The technology increases port quantity to maximize bandwidth and throughput while delivering diverse interface types.

Innovative new technology and artificial intelligence (AI)-powered applications are improving railway safety. Empowered by mini-PCIe and M.2 Key E, the nROK 7270 and nROK 7271 efficiently deploy pre-trained image AI models with Google Coral and the Hailo-8 M.2 AI Acceleration Module. These AI accelerators facilitate Edge AI inference for a wide range of applications, including people counting, occupancy detection, pantograph inspection, track obstacle intrusion inspection, rail track condition monitoring, and sign detection and classification. DDR5 RAM improves both speed and capacity, while doubling the memory bank – making the powerful AI applications even more efficient. These technology advancements are elevating the future of smart railway systems and improving rail safety.

Features
- Powered by 12/13th Gen Intel® Core™ CPU
- Fanless, compact, and rugged design
- Designed with DDR5, excellent memory bandwidth, lower latency
- 2 x 2.5" SSD for data integrity (compatible with 15mm disk)
- 5G/Wi-Fi, PoE, 10GbE, daughter board expansion support
- Two video outputs, one VGA and one HDMI
- 4 x Independent 10/100/1000/2500 Mbps PoE 802.3 af/at, total 60W (nROK 7270-AC4/nROK 7270-AC4-C8S)
- Additional 8-port LAN M12 X-coded, 10/100/1000 Mbps Ethernet Switch GbE, PoE 802.3af/at, max. 60W (nROK 7270-AC4-C8S)
- Military standard for anti-vibration/shock
- EN 50155, class OT3 conformity

To learn more, please visit the NEXCOM website.

About NEXCOM
Founded in 1992, NEXCOM integrates its capabilities and operates eight global businesses, which are Industrial Mesh, Intelligent Platform @ Smart City, Intelligent Video Security, Mobile

Computing Solutions, Medical and Healthcare Informatics, Network and Communication Solutions, Smart Manufacturing, and Open Robotics and Machinery. This strategic deployment enables NEXCOM to offer time-to-market, time-to-solution products and services without compromising cost.

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