Tirectory Rolling Stock

# ADLINK

## Leading Railway AI & Elevating Passenger Experiences



From optimising operations to enhancing passenger experiences, AI is transforming rail transportation.

ADLINK, a leader in AI-enabled computing platforms, empowers rail operators with rugged, reliable solutions designed to meet the sector's tough demands. Partnering with world-class eco-system partners, ADLINK delivers CompactPCI systems built for harsh environments and mission-critical performance. Its robust platforms support key rail applications including autonomous train operations (ATO), T2G communication, and passenger information display systems (PIDS).

One major industry challenge is maintaining consistent system performance in extreme conditions – ADLINK addresses this with industrial-grade designs that ensure stability, reliability and long lifecycle support in even the most demanding rail environments.

#### CompactPCI Serial – High-Speed Data Transmission with Low Latency

Railway systems rely on CompactPCI and CompactPCI Serial for train control and signaling because of its real-time processing, low-latency communication and rugged, modular design that holds up in harsh environments. ADLINK, in partnership with world-





class chassis and backplane providers, delivers preintegrated system-level solutions that ensure signal integrity and long-term reliability. Together, we offer the most comprehensive CompactPCI Serial lineup on the market – making it easy for customers to configure the right system for their needs while streamlining deployment and maintenance.

### Powering Edge AI in Rail: AVA Series

The ADLINK AVA Series offers a robust lineup of EN50155-compliant solutions that bring AI and IoT capabilities to the railway industry. Designed for highcompute density and I/O flexibility, the AVA Series supports a wide range of smart rail applications – helping operators meet growing demands for safety, efficiency and automation.

Built for the most demanding rail environments, the AVA-7200 stands out with full compliance to EN50155, EN45545 and EN50121 standards. It features NVIDIA Ampere-based GPGPU options (A2000/A4500/AD2000/ AD5000) further delivering powerful AI inferencing and real-time analytics at the edge. Ideal for rail system integrators, the AVA-7200 enables AI-driven functions including:

- Railroad obstacle detection to expedite emergency response
- Surveillance The AVA-7200 includes 4 SATA trays, enabling network video recorder (NVR) functionality for high-capacity video storage and playback

Designed with serviceability in mind, the AVA-7200 includes a partially lid-open chassis for easy maintenance and add-on module upgrades. It also supports power ignition control to protect the system from sudden current surges or dips that could damage the system.

The AVA-1000 is a compact, EN50155-compliant onboard gateway designed to meet the connectivity and processing needs of modern rolling stock. Available in both ARM and x86 architectures, it offers flexibility for different integration requirements while maintaining a small footprint. With built-in 5G, Wi-Fi and GNSS support, the AVA-1000 ensures reliable, highspeed communication across onboard systems.

It's ideal for maintaining consistent, real-time data



updates between passenger information displays in each cabin and the central rail server – ensuring passengers receive accurate, synchronised information throughout their journey.

#### Passenger Information Display System for Real-time Communication

Passenger Information Display Systems (PIDS) improve the travel experience by delivering real-time updates on arrivals, delays, and emergency alerts—helping passengers stay informed and reducing platform congestion.

ADLINK, in collaboration with AUO, offers a full range of PIDS solutions designed for railway environments. Standard display options include 21.5" and 28.6" stretched panels, with TARTAN technology supporting custom sizes and brightness levels from 500 to 2500 units. Our displays are engineered for low power consumption—cutting energy use by up to 30% compared to traditional models on the market—and are EN50155-certified for railway use. Each panel undergoes 500-hour reliability testing and operates in extreme temperatures (-25 °C to 55 °C), ensuring consistent performance in harsh conditions.

