

A More Reliable Commute

Monitoring and Wi-Fi Systems for Railroad Application



A European rail operator was looking to integrate a new monitoring and Wi-Fi system onboard, with the goal of enhancing customer experience and safety, as well as increasing connectivity.

Introduction

Rail operators are facing ever-increasing challenges when it comes to onboard monitoring and customer satisfaction. Along with the ubiquity of Power over Ethernet (PoE) and the Internet of Things (IoT), operators are indicating a strong interest in increasing connectivity to remain competitive. An infotainment system will keep the passengers satisfied and up to speed with any schedule changes, while the monitoring system will enable the operator to quickly assess and solve unforeseen situations as they arise. However, though expressing a strong interest in implementing new systems, operators indicate that finding the right solution for their application is still one of the main obstacles to innovation.

Our Roadmap to Success

RAID Solution

Dual 3MG2-P SSD fitted to 2.5" E2SS-32R1/32R2 RAID module

- Low WAI
- Capacities up to 2TB
- RAID 0, RAID 1

Flexible Communication

EMUC-B201 CANBus card

- 2.5KV Isolation with Surge & HiPOT protection
- API, sample code and Utility for Windows and Linux, SocketCAN for Linux
- Wide temp. (-40°C~85°C)

EMP2-X4S1 isolated RS-485

- Supports up to four isolated RS-485 connections
- Supports port-to-computer isolation, 2.5kV HiPOT protection
- Wide temp. (-40°C~85°C)

Rugged DRAM

ECC SoDIMM

- DDR4 2400
- 16 GB memory
- Wide temp. (-40°C~85°C)

Optimized Software

- Customized Linux OS
- Easily builds recovery function at main server

Challenges

- Limited space: has to compete with other onboard systems in an already constricted space
- Large capacity requirements: monitoring systems need to store large amounts of data over long periods of time
- High number of communication nodes: increased concern for loss of data integrity
- Environmental challenges: wide temperature variations and electromagnetic interference from the surroundings

Solutions

- RAID with dual SSD: a compact solution that offers high storage capacities and increased fault tolerance
- Wide temperature: all modules are tested and certified for wide temperature operation
- Isolated Communication Modules: tested and certified to withstand surge and HiPOT occurrences
- Customized software and data recovery system: ensures data integrity and a smooth operation

Result

With the implementation of this monitoring and Wi-Fi system, the operator can ensure customer satisfaction as well as a stable and reliable connectivity. The operator is fully equipped to handle unforeseen situations and can ensure the highest degree of onboard safety.

Our Promise

We at Innodisk believe that through cooperation we can overcome any challenge. By maintaining a strong line of communication all the way from inquiry to implementation, we ensure a tailor-made solution that fits your application. We remain committed to innovation with our continual focus on hardware, firmware and software integration.