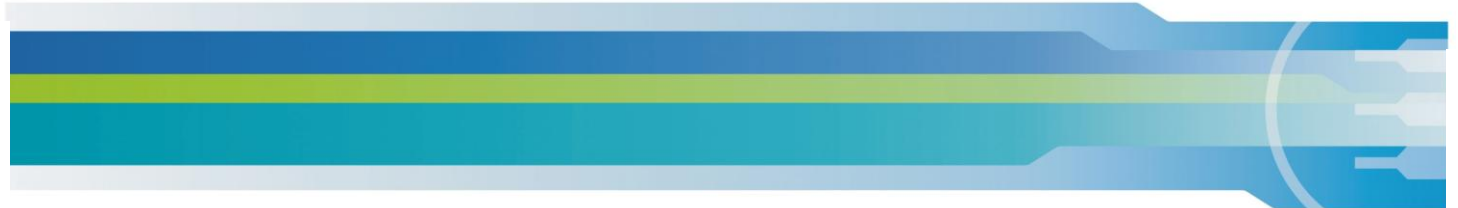


Eurotech Offers Wayside Message Server Solutions Built on Certified Hardware for Positive Train Control Systems

APPLICATION NOTE



Introduction

The Rail Safety Improvement Act of 2008 has mandated the widespread installation of interoperable Positive Train Control (PTC) systems by 2015. There are significant technological hurdles for the railways to address to enable PTC compliance before the deadline, including designing, testing and installing PTC on thousands of miles of track. In addition, all PTC systems must be Meteorcomm certified, which has the potential to be an extremely cumbersome process for an intelligent system created to read rail sensors and communicate via wayside messaging servers.

Eurotech has two offerings for PTC listed below, either an industry-certified embedded computer board or a standalone rugged box solution based on a certified hardware platform to

allow PTC system integrators to quickly deploy and release their PTC applications on time and on budget.

- **Eurotech Certified ISIS PC/104 Embedded Computer – Embedded Computer Only Solution**
- **Eurotech Certified DuraCOR 1200 Embedded Platform – Rugged Enclosure Solution**

Each solution offers PTC integrators hardware built for the rugged rail environment leveraging Eurotech experience in the Industrial Network Gateway and ruggedized computer product design for more than 20 years, providing products with WMS functionality directly to customers in the SCADA and Telemetry industries.

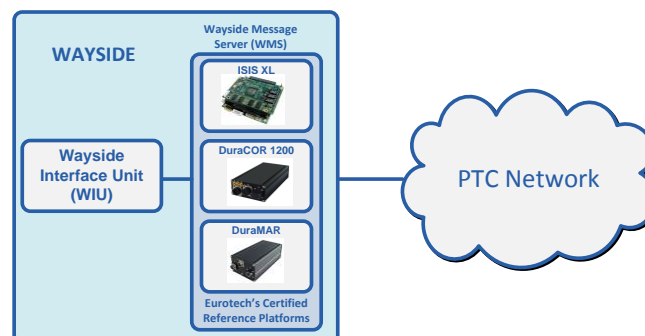


FIGURE 1. HARDWARE REFERENCE DESIGN FROM EUROTECH, ISIS XL AND ISIS XL-BASED SYSTEMS, INTERFACE TO PTC NETWORK

Eurotech ISIS – Certified Embedded Board

All PTC wayside messaging servers must use one of two reference embedded boards and Red Hat Linux. Eurotech's ISIS PC/104+ single board computer was selected as one of the two reference boards for proper PTC operation.



FIGURE 2. EUROTECH REFERENCE BOARD, ISIS PC/104 EMBEDDED COMPUTER WITH INTEL ATOM PROCESSOR

The Eurotech ISIS provides all the benefits of Intel Atom architecture including optimal balance of power and performance. Consisting of a Eurotech Catalyst XL processor module and carrier board, the ISIS offers high-performance x86-compatibility in a fanless design that requires only a fraction of the power previously needed for comparable Intel architecture systems. The ISIS PC/104+ board selected integrates the Intel Atom Z530 processor into a rugged, embedded computer designed to operate under harsh conditions with an industrial temperature rating from -40 to +85 degrees Celsius.

In addition to achieving much lower total power dissipation figures than any previous x86 technology, the Intel Atom technology delivers new Multithreading and Hyper-Threading Technology. The potential to leverage this technology on the wayside message server could significantly lower the total cost of ownership by providing certifiable "application segregation" on a single CPU.

Eurotech DuraCOR 1200 – Certified Embedded Platform

Eurotech's DuraCOR 1200 is the ISIS processor incorporated into a rail approved rugged enclosure, ready to take to field

immediately to start testing PTC prototype applications. The primary function of a DuraCOR is to provide a platform to run a PTC service. The DuraCOR 1200 is made to comply with the international standards to withstand shocks, vibrations and high humidity, maintaining high reliability and precision. It can withstand extended temperature ranges without using active cooling fans.



FIGURE 3. DURACOR 1200, BASED ON EUROTECH REFERENCE BOARD, ISIS PC/104 EMBEDDED COMPUTER

More Software to offer than just the OS

Eurotech is enrolled in the Red Hat Hardware Validation Program. Eurotech has further simplified the certification process for PTC integrators by customizing the Everyware Software Framework to allow two operating systems to run in parallel. As a result, system integrators can run the certified Red Hat Linux, while developing custom applications with Enterprise Wind River Linux for fast integration and fast deployment on the same reliable PTC-certified hardware and operating system.

Regardless of the level of integration you need to meet PTC deadlines, with a full SWMS or certified embedded computing platform, Eurotech is the obvious choice for your WMS solution!