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Sintrones' On-Board Computers Help PESA Enhance the Quality of Its Trains

Sintrones developed a customised multifunction on-board computing system with Ledatel local support to meet the needs of Polish train manufacturer PESA.

When looking to upgrade its on-board computers, Polish train manufacturer PESA Bydgoszcz SA turned to in-vehicle computing

pioneer Sintrones and channel partner Ledatel local support.

With years of engineering and product design experience behind it, the Taiwanese company is renowned for its ability to create bespoke on-board computing systems that meet customers' technical requirements.

Multifunction System Requirements

PESA was looking to upgrade its

on-board computers in order to enhance the quality and customer experience of its rolling stock, and had a number of system requirements that any potential solution needed to meet.

Requisite capabilities included isolated digital I/O design to protect against environmental noise and transient signals and ensure system reliability, and on-board network video recorder (NVR) functionality that could provide real-time recording, analysis and tracking.



PESA therefore required a system with a rugged design, wide operating temperature range, wireless capabilities, power over Ethernet (PoE) and RAID to protect against data loss.

The Polish train manufacturer also wanted the computer to be able to connect with a WiFi router in order to provide a reliable on-board internet service to passengers, in addition to functioning as the on-board display control system.

Tailor-Made Solution

Sintrones began this project three years ago with its channel partner Ledatel, and has continued to work closely with PESA to develop a customised solution that meets the manufacturer's needs.

Sintrones' VBOX solution, a railway-certified on-board computer, integrates multiple features into one unit, saving cost, space and physical wiring overheads, and compatibility issues and maintenance efforts across different devices.

Work started on this project with the standard model VBOX-3600, which was customised to provide isolated digital I/O and named the VBOX-3600-ISO.

From here Sintrones' experts

designed a custom-made, next-generation unit that would meet PESA's exact requirements.

"When we begin a new project, we first analyse the customers' requirements and pick a standard model that is the closest to their required specifications. From here our engineers will work on specialised the solution until it meets 100 percent of their requirements," says **Alan Yao, Managing Director of Sintron Technology Corp.** *"In this case, the outcome was the VBOX-3620-M12X."*

Sintrones' VBOX-3620-M12X offered PESA:

- A variety of isolated digital inputs and outputs, used to control devices such as cabin lighting, air-conditioning, door sensors and smoke detectors
- Three GB Ethernet ports with M12X connectors – a requirement for the rail sector, a power-over-Ethernet switch connected to the ethernet port, plus several IP camera connections so the system can

function as an NVR

- Three physical storage options – A SATA DiskOnModule (DOM) sits securely within the VBOX for the main operating system and software, while two 2.5" bays are available for solid state disk or hard disk drives to store video data (these support RAID 0, 1 and 5 to prevent data loss)
- Connection to WiFi routers in order to provide on-board WiFi connectivity for passengers
- Functionality as a passenger information system, with the VBOX connecting to the training signage display

Mass production of the VBOX-3620-M12X is now underway, and PESA has ordered over 1,000 computers for its new trains with full delivery expected this year.

To find out more about Sintrones and how its customised solutions could meet your rail needs, please visit <https://www.sintroncorp.com/> or email sales@sintroncorp.com.

INTELLIGENT TRANSPORTATION SYSTEMS

VBOX-3620-M12X

- PoE NVR with IP Camera
- Passenger Information System
- Train Door Control System






TRAIN DOOR CONTROL SYSTEM



PoE NVR WITH IP CAMERA



PASSENGER INFORMATION



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