Case Study: Metro Taipei Adopted Axiomtek's Intelligent Surveillance Solution for Passengers Safety

(tBOX324-894-FL & P6105)

Public Transportation Safety

The safety of passengers and drivers aboard public transports has been the ongoing focus of mass transit operations worldwide. Within Taiwan, the Metro Taipei and the Department of Rapid Transit Systems (DORTS) began to pay attention to surveillance systems due to multiple random attacks occurred in the metro system. They have invested in the newest onboard surveillance system that incorporates transportation-certified computer hardware, security software, cameras, and other components to create an effective onboard surveillance system for the Taipei MRT (Massive Rapid Transit).

Challenges

The demand of public transport safety management is various with complexity; normally, it is not just a single unit or system could achieve the entire job. Therefore, the integration of system platform along with railway electromechanical design has become a major task. A professional system integrator with excellent system integration capabilities and rich experiences as well as a hardware supplier offering high quality products are indispensable.

Main Requirements

- EN 50155 certified for railway applications
- Supports multiple high-definition cameras
- High storage capacity and great connectivity
- Compatibility with Windows® Embedded Standard 7 and selected monitoring software are required
- High reliability and wide-operating temperature range in rugged environment
- Longevity of product life

Axiomtek's tBOX324-894-FL & P6105 Enhance Surveillance System

Axiomtek proposed its tBOX324-894-FL, a fanless network video recorder (NVR) system powered by the 7th generation Intel® Core™ i7 processor to meet the customer's expectations. The NVR platform is certified with EN 50155, EN 50121, E-Mark, ISO 7637, DNV 2.4, and compliant with EN 45545-2, IEC 60945 for use in a variety of transportation applications. It is equipped with two DDR4-1866/2133 SO-DIMM slots supporting up to 32GB of system memory. To suit the need for extensive storage, it is equipped with two swappable 2.5" SATA3 HDDs and one CFast™ slot. The rugged transportation embedded system is also designed to operate in a wide operating temperature range from -40°C to 70°C and in high vibration environments.

Axiomtek also proposed its P6105, an EN 50155 certified 10.4-inch railway touchscreen monitor for train operation control displays. The driver can monitor onboard conditions and make optimized decisions immediately based on the collection and analysis of all relevant data. The rugged monitor offers a resistive touchscreen with 500 nits of brightness. It is equipped with a RS-232 touch control interface and multiple video inputs for DVI-D, HDMI. The EN 50155-certified railway touch monitor supports a wide temperature range from -25°C to +55°C.

Key System Features & Components

- CE, LVD, FCC, EN 50155, EN 45545-2, E-Mark, DNV 2.4 and IEC 60945 certified
- M12 connector
- 3G/4G, GPS, Wi-Fi and Bluetooth via PCI Express Mini Card slot
- Wide operating temperatures from -40℃ to 70℃
- Multi-camera interfaces

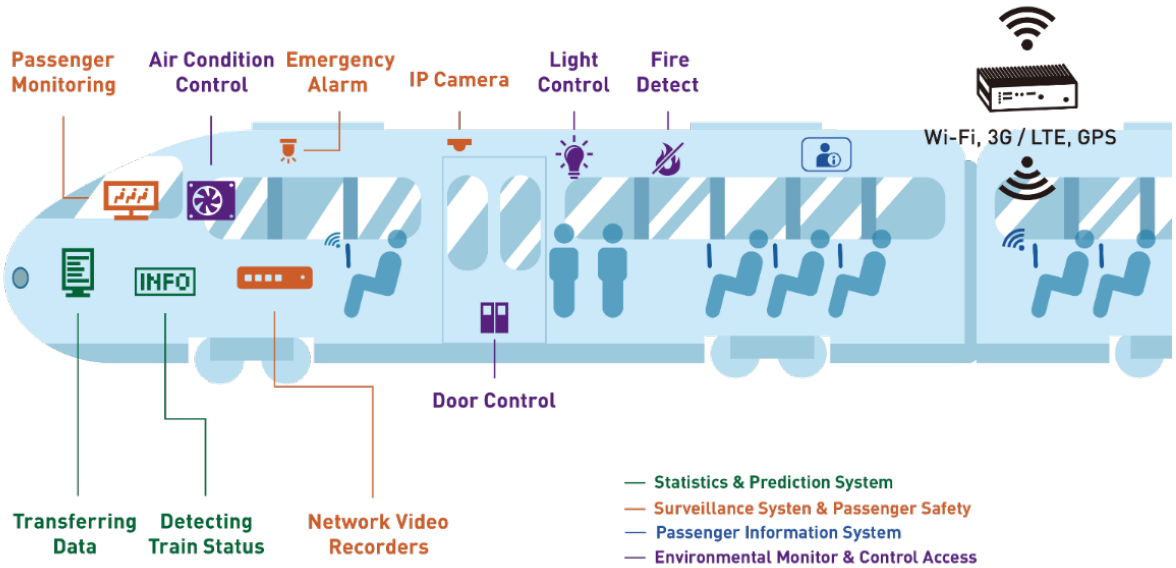
EN 50155, EN 45545 certified

Supports VGA, DVI-D and HDMI interfaces

500 nits of high brightness

Application: How tBOX324-894-FL & P6105 Integrate Surveillance System

A total of 180 units of tBOX324-894-FL and 60 units of P6105 have been ordered in this project. Axiomtek's tBOX324-894-FL has integrated with a video surveillance system to connect in/out-car cameras via an Ethernet switch with M12 connectors to monitor not only the metro system to prevent passengers from an emergency but also the tracks to ensure driver safety. Moreover, the smoke detectors are connected to the NVR computer through DIO for fire or smoke alerts. By connecting the P6105 railway monitor via the RS-232 touch control interface, the driver can view nine cameras in a split-screen monitor for real-time monitoring. Windows® Embedded Standard 7 and monitoring software are also available.



System Configurations: tBOX324-894-FL & P6105

tBOX324-894-FL - Fanless Embedded System with 7th/6th Gen Intel® Core™ i7/i5/i3 & Celeron® Processor

- CE, LVD, FCC, EN 50155, EN 45545-2, E-Mark, DNV 2.4, and IEC 60945 certified
- 7th/6th gen Intel® Core™ i7/i5/i3 & Celeron® processors
- Fanless design and wide operating temperatures from -40˚C to +70˚C
- 2 DDR4-1866/2133 SO-DIMM for up to 32GB of memory
- Typical 12/24/110 VDC power supply
- Intelligent solution of vehicle power management (ACC ignition)
- 2 swappable 2.5” SATA drives
- 3 PCI Express Mini Card slots and 1 SIM card slot

P6105 - Fanless Embedded System with 7th/6th Gen Intel® Core™ i7/i5/i3 & Celeron® Processor

- EN 50155, EN 45545 certified railway monitor (touchscreen is optional)
- Wide viewing angle and high brightness of 500 nits
- Supports VGA, DVI-D and HDMI
- Light sensor for auto-dimming
- 24 VDC or 110 VDC power input
- -25˚C to +55˚C wide temperature range
- Supports 5 OSD keys on the front bezel

*For detailed specifications, please visit www.axiomtek.com or go to Products > Systems & Platforms > Transportation System > Transportation Embedded System for tBOX324-894-FL or go to Products > Industrial Panel PCs > Transportation Computing > Transportation Monitor for P6105

Why Axiomtek

Axiomtek's high-quality transportation-certified products, design assistance services and strong partnership with leading surveillance software, cameras, hardened network switches, and more - have proven successful in helping many surveillance projects. Axiomtek provided FAE/EE with practical tests in early-stage deployment for resolving compatibility issues. The experienced sales and engineering team at Axiomtek provided the system integrator with technical assistance and constant integration testing to ensure the stability of the product quality.

Axiomtek has assisted our mass transit customers and system integrators with their onboard surveillance projects with great success. Coupled with an experienced design services team and a comprehensive suite of value-added services offered, Axiomtek can deliver effective end-to-end solutions and exceptional support to ease project development and management challenges.

About Axiomtek Co., Ltd.

Axiomtek has experienced extraordinary growth in the past 30 years because of our people, our years of learning which resulted in our tremendous industry experience, and our desire to deliver well-rounded, easy-to-integrate solutions to our customers. These factors have influenced us to invest in a growing team of engineers including software, hardware, firmware, and application engineers. For the next few decades, our success will be determined by our ability to lead with unique technologies for AIoT and serve our key markets with innovatively-designed solution packages of hardware and software – coupled with unmatched engineering and value-added services that will help lessen the challenges faced by our systems integrator, OEM and ODM customers and prospects alike. We will continue to enlist more technology partners and increase collaborations with our growing ecosystem who are leaders in their fields. With such alliances, we will create synergy and better deliver solutions, value, and the expertise our customers need.

Axiomtek is a Member of the Intel IoT® Solutions Alliance. A global ecosystem of more than 800 industry leaders, the Alliance offers its members unique access to Intel technology, expertise, and go-to-market support—accelerating deployment of best-in-class solutions.