Train Supervision Information System (TSIS)
Intelligent Transportation System
Taiwan / Taipei

Project Introduction:

TSIS is a system to provide driver the real-time information of the train, and record the necessary parameters while operating. With the help of supervision system, a single train driver can have an overview to the status of a train and handle the simple failure eliminating with higher efficiency. The TSIS in Taipei MRT is empowered by Advantech eAutomation products.

System Requirements:

The customer required a reliable control system and a user-friendly interface, which led to the following requirements:

- Fanless, compact size and reliable platform as a SCADA node
- Battery backup RAM for rapid data exchange in the SCADA node
- Dozens of high speed RS-232/422/485 communication ports for monitoring facilities on a train.
- Intelligent controller with high density of Digital I/O ports and high update rate
- Accurate Analogue Input device
- Industrial monitor with Touch Screen
- System ready within 1 min
- Multiple storage solution (CF card)

Project Implementation:

UNO-2170-C11E

PCM-3618

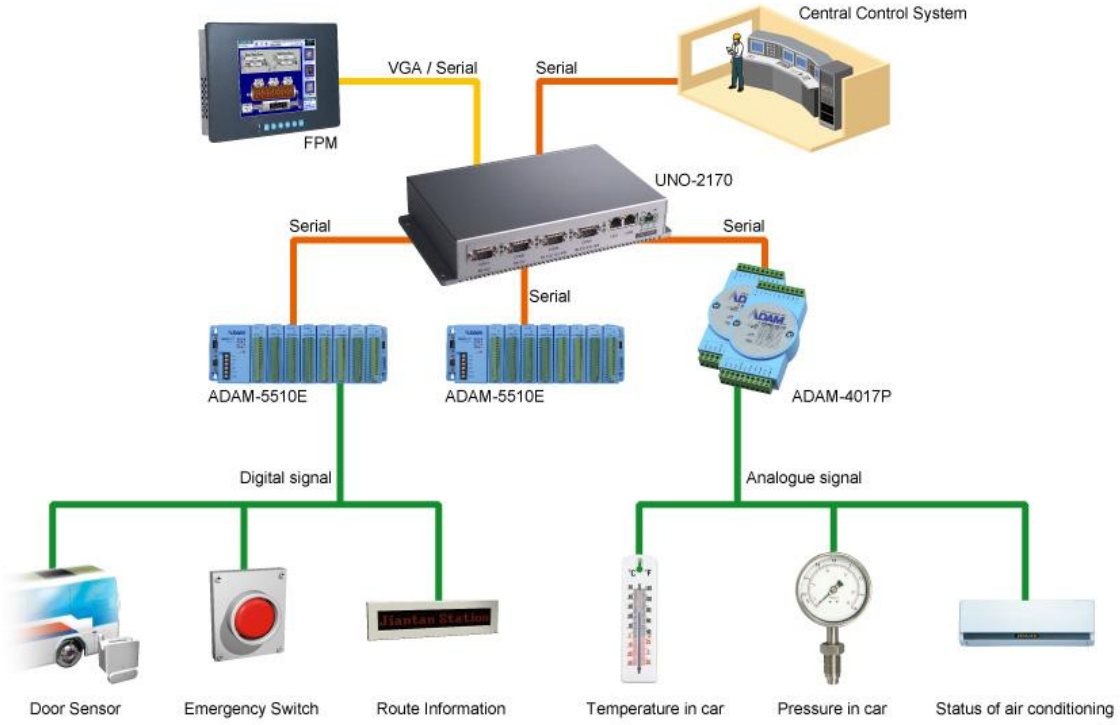
PCM-3641

ADAM-5510E

ADAM-5051S

ADAM-4017P

System Diagram:



System Description:

In the train, every system component requires high reliability. Advantech's Industrial Grade products can fulfill customer's need. This application takes the advantage of UNO-2000's features, such as fanless, compact size, flexible expansion and built-in automation functions. By plugging two PC-104 serial communication modules, UNO-2000 has very good communication ability with the facilities on the train and the attached ADAM-5000/4000 devices. ADAM-5510E is an intelligent controller and, by integrating 5 ADAM-5051S modules, its high density Digital Input ports can grab all the necessary information on the train. ADAM-4017P is an enhanced Analogue Input module with high reliability and is in charge of all the analogue values on the train, such as temperature and pressure. For this system, customer's requirement is to get hundreds of IO data within 1 ms and Advantech eAutomation provide the solutions.

Not only the SCADA node and IO networking, this system also needs to provide a user friendly interface to the train driver. This HMI should survive under the moving and vibration circumstance, and Touch Screen is necessary for sure. In this application, Advantech provides the Industrial Grade flat panel which can fulfill all the requirements and gain good satisfaction.

Conclusion:

To be a total solution provider in the automation field, Advantech knows the requirements of ITS (Intelligent Transportation System) vertical market and dedicate to provide the best-fit products. UNO-2000's compact size, fanless design is the best choice to be the SCADA node of TSIS system. It can also be integrated with ADAM-4000/5000 series controller and devices with high efficiency. By the collaboration with the HMI, the system can also provide the user-friendly interface to the user. Besides what has mentioned, the most important things of winning this project the product reliability and trusted service we provide.