RuggON PM-511 Helps Create Smarter Assembly Lines

The era of IoT and Big Data has driven manufacturers to seek technological solutions to boost productivity and reduce time and costs in order to make their factories “smarter”. In fact, the competition is especially intense in the computer manufacturing industry. Therefore, a renowned manufacturer of computing solutions and peripherals in Taiwan, has implemented E-SOP (Electronic Standard of Procedures) that transforms paperwork into electronic forms. In order to make E-SOP as paperless as possible, the company provides assembly staff the rugged tablets that integrate sensor devices, such as barcode scanner, and network connectivity so that all the captured data can be transferred to the central server for real-time analysis in mobile manners.

The Challenge

Assembly line employees are encountered with strict workflow procedures and MES (Manufacturing Execution System) related matters on a daily basis due to factory regulations. Paperwork by conventional desktop PCs are extremely time-consuming and occupying plenty of working spaces. Therefore, the computer manufacturer in Taiwan decided to implement E-SOP solutions to digitalize workflow checklists and MES procedures.

The Solution

The practical solution is to provide them the rugged tablets as a versatile workstation that can be both portable and mounted. RuggON PM-511 was chosen as the optimal solution due to its portability, environmental ruggedness, hardware integration and wireless communications.

Results

With RuggON PM-511, the E-SOP has been realized and the factory has rapidly boosted its productivity and efficiency. Factory staff can carry or mount the tablets in specific work areas to conduct their tasks. The tablet is integrated with barcode scanner for staff to scan the components and the scanned data is instantly stored in the tablet’s memory and storage. The data can be sent to the edge cloud server and then cloud server for real-time analysis and traceability. In

fact, all the workflow checklist and MES adjustments are digitalized by the tablets which greatly save the wasted time on the delivery of paperwork. The implementation has greatly boosts productivity, efficiency and quality, and make both the factory and the staff “smart”.

Assembly line employees have to deal with plenty of paperwork on a daily basis as all procedures and checklists must be handled in a strict manner in order to ensure production standards. All materials information, shift schedules, and procedural tasks have to be precisely filed and organized. These paperwork had consumed tremendous amount of time for assembly line staff, and therefore, the well-known computer solution manufacturer in Taiwan has adopted RuggON PM-511 as their main hardware device for the whole E-SOP system.

Seamless Data Transfers & Links to Servers

Since the implementation of PM-511 tablet in every designated work area, work efficiency of the company’s assembly lines has been boosted by 57%. By installing E-SOP software in PM-511, workflow checklists can be seamlessly transferred to any workstation or department through wireless network, which greatly save the wasted gap time by transferring documents physically. In fact, even working shifts changes can be conducted on PM-511 with MES (Manufacturing Execution System). With PM-511 in the E-SOP, adjustments and changes can be made much simpler.

The information in-and-out of the E-SOP can be sent to the edge server, and then the cloud server for real-time analysis, serving as future policy reference regarding factory quality improvements. The E-SOP digitalization offers the company an even more instant database than traditional paperwork.

Hardware Integration

RuggON PM-511 supports wide hardware integration through its flexible expansion design. In this case, PM-511 integrates barcode scanners for factory staff to scan material RFID. All the scanned information will be stored for E-checklist. The digitalization of SOP not only provides traceability for reference checks to determine defective products in RMA services, but also serve as building block of an enormous, real-time database for both edge servers and cloud servers. Paper-based filing is replaced totally by electronic ways.

Deployment Versatility

RuggON PM-511 can be used in both portable or mounted manners. The tablet is a drop-in substitute for desktop PCs due to its superior flexibility, compactness and mobility. Assembly workers may carry PM-511 wherever they go to conduct certain procedural works. This can optimize their work efficiency and times. When PM-511 is mounted, the tablet can perform all the PC related tasks but without occupying large amount of working space. Through the integration of E-SOP, the manufacturing plant not only boosts up productivity and efficiency, but also creates an environment-friendly workplace.

Business successes nowadays are largely depending on rapid responses to the trend of IoT and Big Data. By taking the trends into considerations, the computing solution manufacturer has implemented the revolutionary E-SOP with the use of RuggON PM-511 to digitalize plenty of paperwork for factory regulations. By processing all the paperwork in electronic forms, the company has also established a giant data server for real-time analysis and future policy reference to further improve production quality and make factory “smarter”.

Blaxtone PM-511

10.4” Fully Rugged Windows Tablet