



Automotive Assembly System Solutions for Partner Baccanelli

Market: Automotive
Location: Italy
Technology Partner: Baccanelli

Project Introduction

The assembly departments in the automotive sector usually provide very poor automated processes in the production chain and this means that it's very difficult to improve parameters like efficiency, quality alignment and massive data collection. In order to achieve these objectives by containing production costs, our customer, who is one of this market's main system integrators working with the most important automotive manufacturer companies in Italy, needed a modular and flexible system that was able to communicate simultaneously with old and new equipments to contain cost.



System Requirements

The objective and the aim of this system was to modernize the internal working process by introducing a Human Machine Interface that could help provider user-friendly job instructions and better characteristics of the specific product under processing to the users and operators to make their work easier.

Another goal was to collect all parameters and data of the operations in a single file linked to the serial numbers of the vehicle to optimize the whole process. This was possible thanks to a software gateway that integrated old and new equipment by using different physical connections: 2 x LAN, 5x RS/232, 1 x RS/485, Bluetooth, 2 x USB, and Digital I/O.

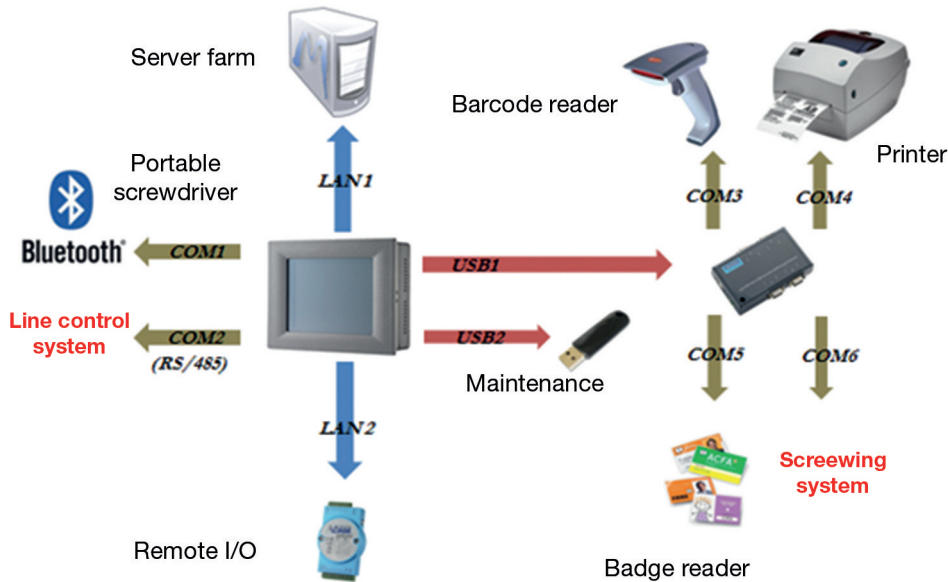
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Project Implementation

Product	Description
TPC-651H	customized 5.7" SVGA Touch Panel PC, Intel® Atom™ processor Z520 1.3 with 2GB CF and Windows XPE
USB-4604B	4-Port RS-232 to USB Converter w/Surge
ADAM-6052	16-Ch Source Type DI/O Module



System Diagram



Conclusion

A good interface is not enough anymore. HMI solutions need to be more and more flexible by offering more expansion capabilities. Performing communication functions, in addition to the ability to add and expand the type and number of COM ports to contain internal costs for the customer is the secret to winning the project.

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System Description

The system is mounted in a black box beside the assembly lines. The user can interact with the touch screen after having been identified with a badge. Every system on the line is connected with software gateways and physical ports, so the operator can have the complete control of the process. The portable instruments communicate with the central box by Bluetooth™, and coordination with the rest of the line is realized by physical I/O. In case of maintenance the operator can interact with the system using an USB dongle or the intranet.

The system's processor, the Intel® Atom™ processor Z520 is built on the 45-nanometer (nm) Hi-k low power microarchitecture and 45 nm process technology. As the first generation of low-power IA-32 microarchitecture, this processor features excellent power management to complement thermally constrained and fanless industrial applications. Advanced processor features include: Intel® Hyper-Threading Technology to run demanding applications simultaneously and Enhanced Intel SpeedStep® Technology to dynamically adjust processor voltage and core frequency.