SYNCUSTECH

CASE STUDY

Remicon Weighing Control System - TriTech

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PROJECT SCOPE

TRI TECH Inc. specializes in providing Remicon weighing control systems. They provide a variety of monitoring systems, including BCP (Batching Control Panel), GPS vehicle control systems, and shipping/production management systems, among other solutions. Recently, TRI TECH Inc. partnered with SyncusTech to develop a real-time water/cement ratio monitoring system. To ensure precision, they wanted to be able to incorporate a variety of common measurements (absorption rate, concentration rate, moisture content, dilution rate, etc.) into the system. To develop such high spec products, customized motherboards are required, whereby the control system would be operated by a PC rather than a PLC.

CLIENT'S CHALLENGE

TRI TECH's existing system was comprised of incompatible products, which caused maintenance headaches. They sought to create a new system with universal hardware for easy updating and repairs. To meet this need, SyncusTech chose a Type 6 Com Express-based motherboard with a 4th generation Haswell processor. Also, SyncusTech was asked to develop a custom carrier for the Com Express board. SyncusTech had previously developed the EMB-QM87 Com Express board with a Haswell processor, and it served as the base for TRI TECH's custom carrier board.

SOLUTION AND IMPLEMENTATION

By using a board with an Intel® Core™ i5-4400E processor with the existing system (composed of 8 bit single micron), SyncusTech increased data processing speeds to 3M Cache and 3.30 GHz. This allowed for high-speed precision weighing, thus minimizing error rate. Since Triple Display is required to support the required two HDMI ports and CRT D-Sub, SyncusTech used a DP to HDMI IC converter for the carrier board. To comfortably place four serial ports in the backplane where the carrier board is mounted, a super I/O F81866AD was applied. While the network supported by the pre-existing system was restricted at speeds of 512K-2M, we were able to upgrade to more stable data communication by mounting a 1GbE port. Additionally, SyncusTech optimized the BIOS such that it is more universally compatible, in addition to working seamlessly with the custom board.

CONCLUSION AND BENEFITS

By partnering with SyncusTech, TRI TECH Inc. was able to get customized carrier boards that fit their unique needs. It is also a big plus that the boards are compatible with existing equipment, as maintenance will be easy and efficient. Most importantly, the upgraded specs of the new system allow for TRI TECH to achieve and deliver more precise and efficient Remicon management solutions.

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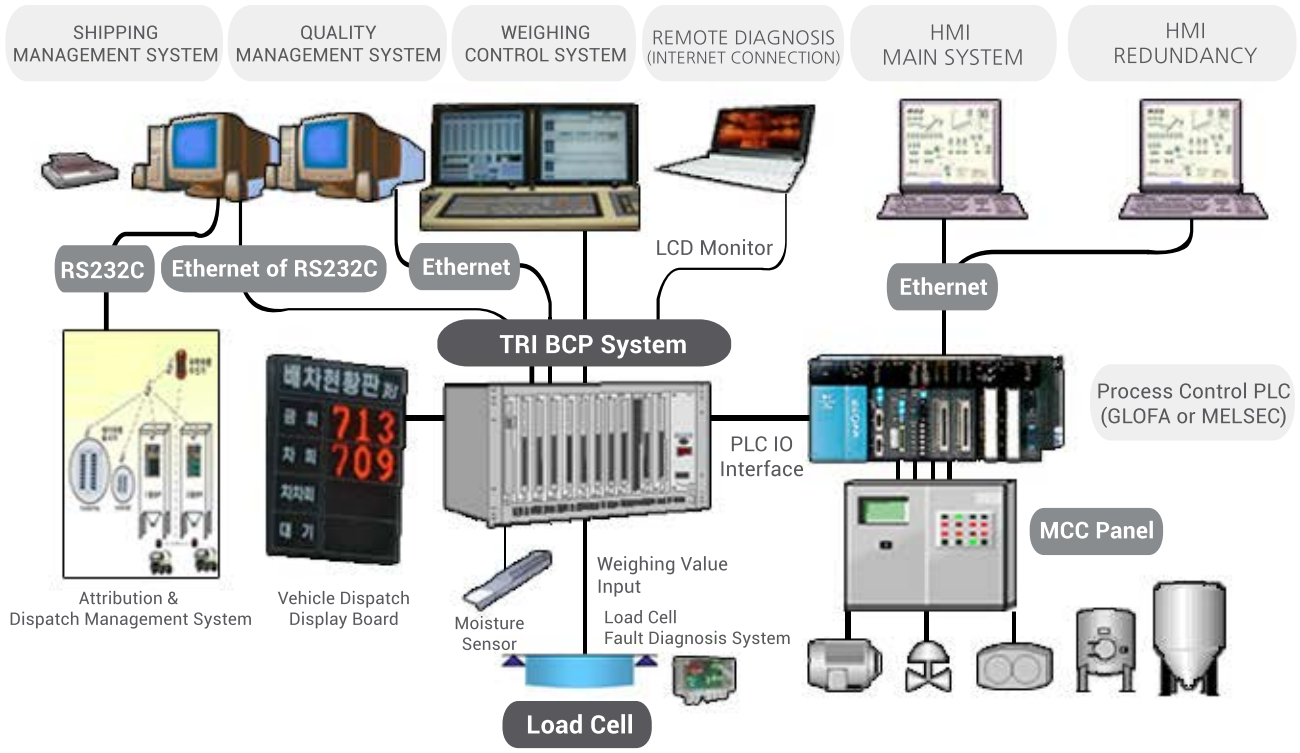
New BCP System Architecture



EMB-TriTech Carrier Board

Contents	Specification
Com Express	EMB-QM87 Com Express i5 processor Apply
DP Port Controller	DP to HDMI Converter IC
Display	HDMI 2 ports, CRT D-sub 1 port (Triple Display)
Audio	Speaker & Buzzer
SATA	4 ports
USB	USB3.0 4 ports
Super I/O	F81866AD
Serial	4 ports (by Backplane)
Keyboard & Mouse	PS2
Network	Ethernet 1Gb 1 port & USB2.0 2 ports
Expansion BUS Interface	PCI Express to PCI
Tempertaure	0°~±60° operation

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