Case Study

Machine Vision: DFI Tech's Engineering Customizes Rugged & Lightweight Embedded System for Industrial Control

Lawrence Equipment, a provider of flat-bread machinery, had a requirement to upgrade the motherboard in their tortilla-making system. The board is the controller for the machine vision system that ensures product uniformity and reliability. The DFI Tech team of experts found that they could greatly improve the computing solution for the customer. First, the unit they were using was large and heavy (over 6U high and 50 lbs) requiring 3 people to install it. DFI Tech's U340 Expandable Industrial Embedded System was nearly one half the size, one third the weight, and offered more features. The U340 is also wall-mountable, which saved the customer significant space.

Figure 1: Photo of Lawrence Equipment's Tortilla Making Machine

Serviceability and reliability

Another issue with the customer's previous configuration was the fans would get clogged from flour dust, etc, in the environment. DFI Tech reversed the airflow of the system, cutting back on the intake of contaminants and added a user-serviceable fan filter which added substantial value to the customer's solution.

Performance upgrade

Addressing the customer's initial concern, the U340 was upgraded with an Intel® i7 CPU. The system has 8GB of memory as well as dual 240GB SSD for redundancy and a slim DVD-RW drive. DFI Tech installed a customer-specified Nvidia® graphics card and a customer-supplied DIO board and loaded a Win7 Pro operating system.

Expandability

Another benefit of Lawrence Equipment selecting the U340 is future expandability. As applications require more specialty boards, the unit offers multiple PCIe x16, PCIe x4, Mini PCIe, and PCI expansion options. The embedded computer also has a wealth of I/O options.

Figure 2: Example of a U340 Expandable Industrial Embedded System

A Superior Solution

Starting with a call to update a motherboard, the DFI Tech team of experts were able to find multiple improvement options for the entire embedded computing system for their customer. The DFI Tech design provided a performance upgrade and a smaller and lighter enclosure that is wall-mountable. Further, the U340 design provided a much more reliable and serviceable solution for the system environment.

Do you have an embedded computing design problem that needs to be solved? Call DFI Tech now to speak to a sales engineer! Our experts will help you find the solution that best fits your application and your budget.

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