



DFI

Advancing Factory Robotics: DFI Supplies Over 100K FS700 i.MX6 ARM Qseven Modules for Teach Pendant Assembly

Background of Story

DFI Inc., a global leader in embedded motherboards and industrial computers, has partnered with one of our long-standing European customers to develop a factory automation solution—the Robotic Teach Pendant. More interestingly, DFI was able to successful delivery over 100,000 units of its FS700 Qseven System-on-Modules (SoM) to our customer, significantly bolstering the factory automation capabilities of the latter. The customer's adoption of the FS700 has highlighted DFI's exceptional supply quality and service, further demonstrating the hardware's crucial role in seamless factory automation operations.



Industry: **Industrial Automation**

Application: **Robotic Teach Pendant,
Industrial Automation HMI**

Solution: **DFI FS700 Qseven Module
(NXP i.MX6 system-on-chip)**

DFI's FS700, launched in 2014, is based on the i.MX6 platform. By integrating the low-power ARM Cortex-A9, the solution offers advantages in 3D and 2D graphics as well as high-definition video. The Qseven module is a compact computer-on-module designed specifically for mobile applications. Having an ARM architecture, it delivers a powerful performance at a low cost and with low power consumption.

This demonstrates the remarkable value our customer found in selecting DFI's FS700 for its product platform after conducting several comparisons with samples. In the end, our customer chose DFI's FS700 primarily due to two key reasons.

Challenges Faced by Our Customer and DFI's Support

In 2013, our customer began developing an industrial automation solution: a lightweight, ergonomic Robotic Teach Pendant with a high-resolution display. During the product development phase, the customer placed great importance in modularity, leading it to evaluate numerous samples from various vendors. Ultimately, the customer selected DFI due to the FS700's adoption of the Qseven module. This choice was driven by the teach pendant's minimal space and low-power requirements given its handheld nature.

However, another issue still remained, stemming from the complexities of integrating the ARM platform, which differs significantly from the more familiar x86 architecture. The customer's limited resources for ARM further compounded the challenge, significantly slowing down its research and development efforts.



In summary, we can identify two key advantages of DFI that explain how the company earned the trust of our customer and secured a decade-long order.

1. Our customer's automation solution had to be adaptable to future changes

By choosing DFI's Qseven SoM, our customer can deliver trustworthy investment protection to clients. In today's rapidly evolving environment, contemporary visualization devices must provide seamless speed and fluidity in user interfaces. With its modular design, our customer's final product promises flexibility for future demands. This facilitates seamless and quick transitions to newer processor technologies, eliminating concerns about performance degradation when expanding visualization applications.

2. DFI's expertise in ARM platform assistance

In 2014, ARM's hardware ecosystem in the industrial control sector lagged behind the x86 platform, lacking high-speed signal integrity (SI) measurements, which are crucial to ensuring the stability of end applications. DFI's Research and Development team played a vital role in enabling our customer to provide stable hardware capabilities during the initial i.MX6 development phase, despite the lack of complete SI measurements and calibration. Andrew Chiou, general manager of DFI's Research and Development Management Center and leader of this project, remarked, "Throughout this project, our team has worked tirelessly to address multiple challenges, such as the lack of high-speed SI measurements, to ensure the stability of the hardware. By maintaining constant communication, we accelerated the customer's product launch, resulting in a successful market debut. The ongoing delivery of FS700 modules for over a decade showcases our customer's enduring appreciation for our products and service excellence.

Pioneering the Ongoing Evolution of Industrial Automation Solutions

Our customer is a leader in the industrial automation field, and its choice to use DFI products for over 10 years is a direct testament to the strong and long-lasting partnership between both parties. Thanks to DFI's ARM platform expertise and the customer's trust in DFI's product quality, we've achieved remarkable success.

Most importantly, DFI and all our customers are more than just business partners; we are pioneers shaping the future of the Industry 4.0.