AXIOMTEK

Case Study

Axiomtek's IPC empowers the standalone smart operating room integration solution

(IPC962-512-FL)

Smart Solutions in Operating Room

With the rapid development of AIoT technology, the healthcare industry is entering a new era of digital innovation. As smart solutions are emerging, a variety of medical equipment and data can be integrated into standalone devices and enhance the quality of medical procedures and follow-up research.

Imedtac, established in Taiwan, is an expert in the field of intelligent healthcare. It focuses on implementing AIoT technology in hospitals and nursing facilities. Imedtac has developed smart operating room solutions, which integrate streaming sources, recording archives, PACS workstation and DICOM web viewer to improve clinical care efficacy and operational efficiency. To create a patient-centric integrated platform, an industrial PC capable of processing high-definition video and a variety of data is needed.

Challenges

In the operating room, the surgeons not only need to focus on the patients but also pay attention to the patient vital signs. Sometimes, the entire process needs to be recorded, even streamed for teaching and reviewing purposes. To ensure multi-task smoothly and the quality of the procedure, Imedtac required an industrial system for surgery image and video recording in the operating room to provide the solution.

To offer a quality operation during the surgery procedure, this industrial system needs to be equipped with a powerful Intel® Core™ processor. It also needs to support dual inputs for 4K display and real-time streaming as well as sufficient storage for video routing and data integration. Since this industrial system is placed in the operating room, it is expected to be fanless for quiet operation.

Main Requirements

- High-performance Intel® Core™-based platform
- Supports dual inputs for 4K display
- Supports 2 PCIe slots
- Equipped with 8G RAM and 512GB SSD
- Noise-free fanless operation

Axiomtek's IPC962-512-FL Enhances OR Integration System

Axiomtek offered Imedtac its scalable IPC962-512-FL, a dual-slot fanless industrial system. The IPC962-512-FL is powered by the Intel® Core™ i7/i5/i3 and Celeron® processors. Through the expansion kit AX96205, this system offers one PCIe x16 slot and one PCIe x4 slot which meet the customer requirements for real-time video recording. Two swappable 2.5" HDDs supporting RAID are available for extensive storage needs. This scalable system also supports various options for extension I/O modules which can be used to connect with different medical devices. The high-performance product helps Imedtac *to release* the iMOR-SDB OR integration system.

Application: How IPC962-512-FL Empowers the Workstation

Axiomtek's IPC962-512-FL is utilized in the iMOR-SDB OR integration system that provides video routing and surgery data integration, allowing OR staff to implement the best possible care for patients in a safer and simpler setting. The standalone system also functions as OR video and data manager and allows medical staff to record, stream and screenshot with 4K resolution in the process of the procedure. On the dashboard, patient information and related medical data would be shown to assist with the surgery. Moreover, the information on the dashboard could be switched or enlarged when needed. Then, it also provides important reminders for surgeons. All images and videos recorded will be archived on History Query for further studies.

System Configurations: IPC962-512-FL

IPC962-512-FL 2-Slot Fanless Industrial System

- Intel® Core™ i7/i5 processor (codename: Skylake)
- One DDR4-2133 SO-DIMM for 8GB of memory
- Supports 512GB SSD thru 2 expansion slots
  (1 PCIe x16 slot and 1 PCIe x4 slot)
- 4K dual-display with one VGA and one HDMI
- 2 swappable 2.5" HDDs with RAID 0,1
- Extension I/O module with four RS-232/422/485
- Compact and front I/O design
- -10°C to +60°C operating temperature range

*For detailed specifications, please visit www.axiomtek.com or go to Products > Systems & Platforms > Industrial PC > Industrial System for IPC962-512-FL

Why Axiomtek

The technology Axiomtek delivered worked well according to Imedtac's requirements and met its expectations. The Imedtac team believes that Axiomtek has comprehensive capabilities to efficiently help them bring their innovative products to market.

"Data capturing in the operating room helps the OR staff provide better patient care and manage surgery information faster and easier. Thanks to Axiomtek's high-quality product and excellent services, we have shortened the time for software and hardware integration. With this high-performance IPC962-512-FL, the 4K image recording can steadily operate in diverse healthcare applications," said Jing Yi, Product Manager of Imedtac.

Axiomtek can take your project from inception to delivery—or anywhere in between—to help you make the most of your life-impacting ideas and your industry expertise and capabilities.

About Axiomtek Co., Ltd.

Axiomtek has experienced extraordinary growth in the past 30 years because of our people, our years of learning which resulted in our tremendous industry experience, and our desire to deliver well-rounded, easy-to-integrate solutions to our customers. These factors have influenced us to invest in a growing team of engineers including software, hardware, firmware, and application engineers. For the next few decades, our success will be determined by our ability to lead with unique technologies for AIoT and serve our key markets with innovatively-designed solution packages of hardware and software – coupled with unmatched engineering and value-added services that will help lessen the challenges faced by our systems integrator, OEM and ODM customers and prospects alike. We will continue to enlist more technology partners and increase collaborations with our growing ecosystem who are leaders in their fields. With such alliances, we will create synergy and better deliver solutions, value, and the expertise our customers need.

Axiomtek is a Member of the Intel IoT® Solutions Alliance. A global ecosystem of more than 800 industry leaders, the Alliance offers its members unique access to Intel technology, expertise, and go-to-market support—accelerating deployment of best-in-class solutions.

About Imedtac

Imedtac is an AIoT healthcare expert, established in Taiwan. With our years of experience in IoMT and extensive knowledge of hospital needs, we're dedicated to improving operational efficiency, optimizing workflow, and decreasing human errors in hospitals, care facilities, and even individuals. For more information, visit https://www.imedtac.com/en/