



Case Study

PACS System for Veterinary Surgery

The vast market potential for medical-grade embedded systems in veterinary

Today pet owners are willing to spend much more money on pets than ever, especially on medical and health care to keep them healthy. Therefore, to provide quality health care for pets and handle larger medical demands, veterinary monitoring and diagnostic equipment have incorporated medical-grade edge AI computing systems to enable precise diagnosis and streamline the process.

Challenges

The customer, Hericane Medical, was looking for an IEC 60601-1 compliant edge AI computing system to build a PACS system for veterinary surgery. To gain full-scope information, veterinarians need both CT grayscale images and other color images of organ status. Therefore, the system is expected to support the high-performance Intel® processor and graphic card to process the massive image data.

Main Requirements

- IEC 60601-1 compliant edge AI computing system
- Intel® Core™ processor
- Supports 4GB graphic card
- Equipped with 64GB RAM
- M.2/NVMe SSD for extra storage
- Linux Ubuntu operating system

About Hericane Medical

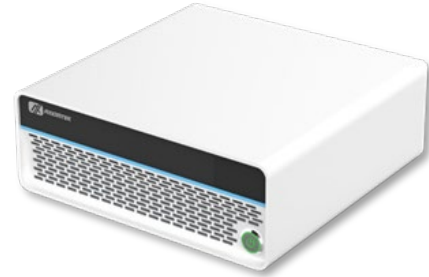
Hericane Medical is a professional medical service provider located in Taiwan. It is committed to developing mobile intelligent medical solutions and quantitative medical analysis methods.

[Visit the website](#)

The medical embedded system for smart healthcare applications

Axiomtek recommends the mBOX600, an IEC 60601-1 compliant medical-grade edge AI computing system, allowing medical providers to introduce artificial intelligence to realize smart healthcare solutions and more precise diagnoses. The system features the 9th/8th Gen Intel® Core™ i7/i5 processor. It not only supports one HDMI and two DisplayPort ++ ports for 4K UHD triple display, but it also has a PCIe x16 slot where users can install a GPU card to obtain higher performance.

The mBOX600 is based on the COM Express Type 6 SoM, which allows fast upgrades and ensures a long-life cycle of the system. The system provides two COM and GbE LAN ports with isolation to enhance security. Moreover, it provides one 2.5" SATAIII and one M.2 Key M 2280 NVMe SSD slot.



Application

The mBOX600 constitutes the picture archiving and communication system

Herricane Medical has utilized Axiomtek's mBOX600 to build its picture archiving and communication system (PACS) for veterinary. To establish a Wi-Fi connection, the system provides a PCIe Mini Card slot for the module and an antenna connector. With the 9th Gen Intel® Core™ i7 processor, the system provides reliable performance. What's more, the 4K UHD-supported triple display enables medical images displayed on multiple screens for a better research experience and accurate diagnosis. To maintain good hygiene conditions, the antimicrobial coating was utilized on the chassis to prevent viruses and bacteria from growing.



mBOX600
Medical-grade 4K Edge System

The customer installed the Nvidia Quadro P1000 GPU in the system for high display resolutions up to 5120x2880 and enhanced color accuracy. Also, the P1000 accelerates image processing and display of 3D images. With quality image display, the mBOX600 improves diagnostic accuracy and enhances overall efficiency to assist in pet surgery.

System Configurations of the mBOX600

- 9th Gen Intel® Core™ i7 processor, TDP 45W
- Two DDR4-2400 SO-DIMM for 64GB memory
- One HDMI and two DisplayPort++ with 4K UHD supported
- Two COM and two GbE LAN supporting 4kV isolation
- Supports half-size PCI Express x16 slot
- Swappable 2.5" SATAIII SSD tray with security lock
- Antimicrobial coating chassis (optional)

*For detailed specifications, please visit www.axiomtek.com or go to Products > Systems & Platforms for Medical Grade System > [Medical Embedded System](#) for [mBOX600](#)

Why Axiomtek

As one of the leaders in IPC, Axiomtek has also made strides in the medical field. Axiomtek's intelligent medical solutions include medical embedded systems and rackmount servers. What is more, Axiomtek provides ODM services to produce the most suitable systems for our customers. Today, our customers include prominent biotech pharmaceutical companies, medical system integrators, hospitals and laboratories around the globe.

"We know that providing a steady imaging platform will be very helpful to veterinarians to complete the surgery. We thank the Axiomtek team for its strong support and understanding of our concerns in veterinary treatment and has provided an effective solution in the field of veterinary medication," said Herrick Liang, managing director of Hurricane Medical.

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.