



Discovering Advanced AI and Edge Computing Technology in Healthcare



Artificial Intelligence (AI) has transcended through many different sectors of our lives, opening up possibilities for machines to “think” on their own and automate tasks that were once done by humans, for faster and more accurate results. AI has also found its way into the medical industry. The combination of smart AI software paired with reliable, more powerful computer hardware allows for medical technology to incorporate deep learning, to ultimately lead to better patient care and medical outcomes of the patients.

Big data and the Internet of Things (IoT) have become major players in healthcare. The future of medical technology sees a world where AI can assist in or even take over some tasks that doctors are currently executing. For example, radiologists are tasked with analyzing ultra-sounds to reach diagnoses for their patients. Whereas radiologists can review a few medical images at a time, AI software and its computer hardware building blocks can analyze multiple images at a swift pace. Based on the vast amount of historical data that the AI server has stored and has access to, the system can accurately recognize any abnormalities and calculate results on its own. And thanks to its constant learnings, AI technology can take it a step further by offering customized treatment plans based on the patient's individual medical record.



Once AI-based medical technology can be perfected, the healthcare industry can improve and save lives, while cutting costs. It can eliminate the risk of human error in diagnoses and offer reliable, accurate information for expedited care and treatments. It can also improve the clinical workflow and free up time for doctors and physicians to interact with and consult with their patients, lessening the amount of time patients would have to wait for treatment.

To achieve that, highly reliable hardware that has compatibility with AI software is required. The hardware also requires high processing powers, multiple communication options and expandability to meet various needs of medical technology for easy deployment.



And that's where Axiomtek comes in. With the expertise of our R&D and engineering teams, Axiomtek has helped many of our medical OEMs/ODMs customers with their important projects. Our standard solutions for the medical market include certified medical all-in-one touch panel PCs, embedded motherboards, systems and gateway devices. They are feature-rich and designed for easy customization and upgrade. They are built to deliver flexibility – with multiple communication capabilities, compatibility with

peripherals and interoperability with AI software. Our support team is one of our key strengths, with quick response times and highly personalized assistance throughout the project development. Fast and easy deployment for our customers are key.

We understand the need for high quality hardware solutions that are easy to work with and deliver more than just the basic hardware our competitors are offering. We have been in business for 30 years and our expertise can be seen in our thoughtful designs, product features and engineering support. The solutions we offer have many purpose-built attributes specifically crafted for OEMs/ODMs. We also understand that our customers may face many project development challenges and some may need help achieving their project goals. Axiomtek's key promise to our customers is just that – helping our customers succeed. We do that with expert engineering assistance, i.e., with creation and testing of custom BIOS and application software compatibility assistance. We also do that with quick turnaround time for board/system-level customization and many unique and comprehensive ranges of value-added service offerings.

Examples of our customized projects include systems and servers that are equipped with custom CPUs/cores and high performance GPUs needed to meet high computing requirements for a medical edge computing device. The solution is used to process vast amount of data and handle highly complex calculations in a required short amount of time. We helped our medical device ODM customers deploy their laboratory sample processing system as well as medical imaging device. There are many more areas our solutions can help support that can be seen [HERE](#).

Below are a few examples of high quality, versatile and feature-rich Axiomtek products that can be integrated into your AI medical technology projects. Please let us know how we can be of assistance, by calling **1-888-GO-AXIOM (1-888-462-9466)** or emailing medicalsolutions@axiomtek.com.

Product Showcase

eBOX560-900-FL – An Edge Computing Solution for Medical Artificial Intelligence

The eBOX560-900-FL is powered by NVIDIA® JETSON™ TX2 with Pascal™ 256 CUDA Cores GPU.



- Designed especially for high AI computing performance with GPU-accelerated processing
- NVMe and JetPack 3.2 SDK support for ease of development
- Built to be highly reliable in tough operating environments. The eBOX is IP40-rated and offers an extended operating temperature of -30°C to +60°C and 3G vibration endurance

CAPA310 – A 3.5" Embedded Board, A Building Block for Customization

The CAPA310 is created to provide powerful computing performance yet have a low power requirement in a compact form.



- Intel® Atom® x5-E3940 Processor
- Feature-rich, easy to customize and expand with 1 x full-size PCI Express Mini Card slot 1 x USB, 1x PCIe x1, 1x LPC, 1 x SMBus through a ZIO connector
- Rugged, with operating temperature range of -40°C to +80°C (-40°F to 185°F)

PICO51R – A PICO-ITX Embedded Board With Reversible CPU Design for Medical Device Integration

A tiny SBC with scalability and customizability beyond others, the PICO51R offers smart design for flexible heat dissipation choices of a space constraint medical device application.



- Options for onboard 7th Generation Intel® Core™ i7/i5/i3 or Celeron® processor
- Support Intel® VPRO technology and AMT security and management software
- M.2 Key E and B for WiFi connectivity and SSD of choice

MPC103-845 – Smart, Certified Medical Touch Panel Computer for Nursing Cart and Imaging Machine Integration

Highly durable, 10.1" WXGA TFT, all-in-one MPC103-845 with Intel® Celeron® Processor N3060 and 4th edition EN 60601-1 certification.



- Designed for high interoperability and flexibility for ease of integration with features such as adjustable RS-232/422/485 setting, optional RFID support, 2 PCIe slots for expansion
- IP65-rated front bezel with aluminum panel for effective heat dissipation
- Ample interfaces including 2 GbE LANs, 4 USBs and 2 COMs