



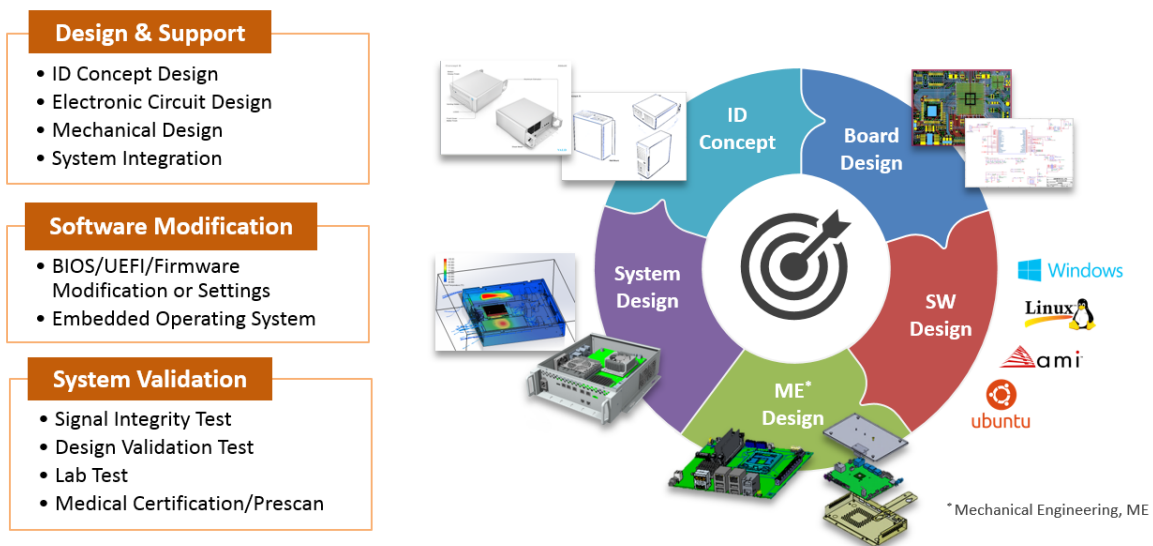
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Technology advances have made medical equipment smarter than ever before, benefiting everyone from doctors to patients by making applications safer, more accessible, and more convenient. Now, the fast-growing healthcare market is being driven not only by the rising demand for medical products with powerful computing and AI capabilities, but also by an increased need for solutions adaptable to the rapidly changing challenges faced by healthcare professionals. Axiomtek's years of experience and solid expertise in the medical computing sector have made it a trusted partner for many top medical industry leaders. While working alongside our customers in their complex, mission-critical projects, we are making every effort to ensure that their expectations are met in a satisfactory manner, providing fully customizable computing solutions and design services for a broad array of medical and healthcare purposes.

Design & Manufacturing Services from Concept to Launch

Medical product design must address the challenges and needs unique to the healthcare settings it is intended for – whether it is to administer personalized treatment and medication or to increase the accuracy of disease diagnostics and prediction. This involves a thorough understanding of user requirements, regulatory-compliant material selection, usability and reliability validation, as well as the underlying engineering technology to turn a design concept into reality. The ultimate mission is to create breakthrough medical solutions that will make a difference to help save and improve people's lives.

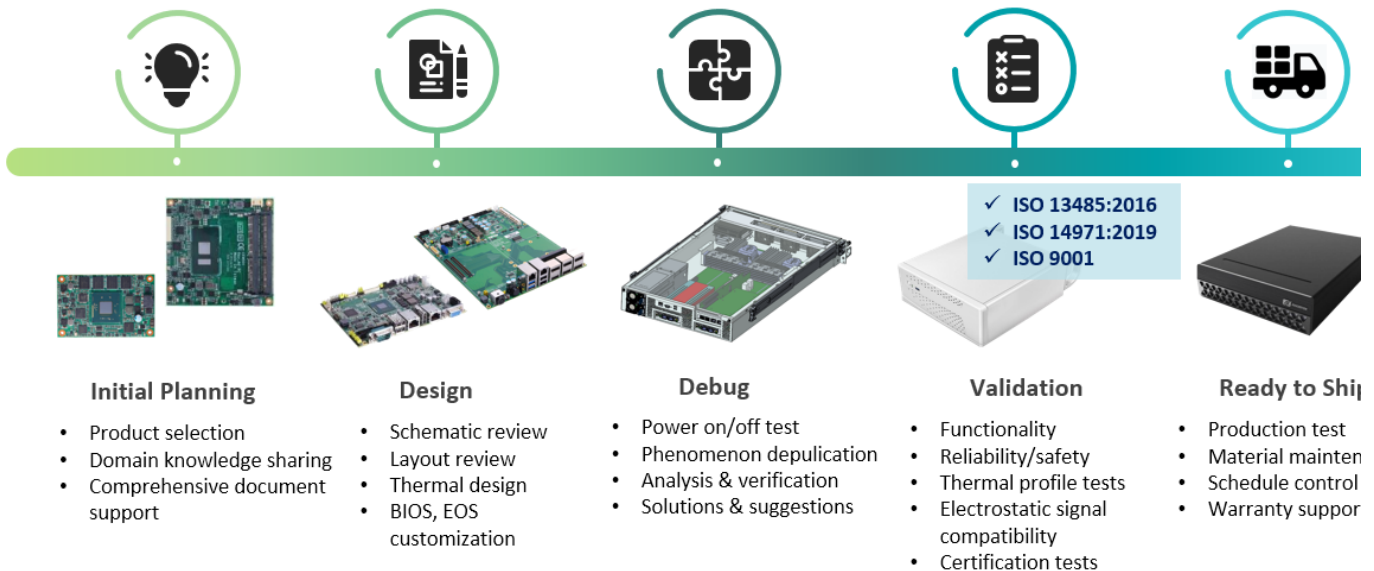
Axiomtek is a full-service medical product manufacturer specializing in the development of medical systems and hospital lab equipment for a diversity of applications, with a long history of delivering quality products tailored to clients' specific demands or operations. Our design services can participate in every project phase – from initial concept and prototyping all the way up to final production and implementation.



Axiomtek's design service coverage – customization from board level to system integration

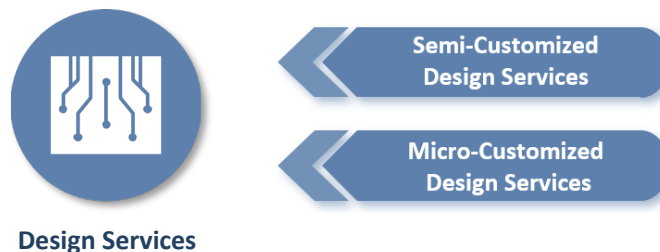
Axiomtek's Design Service Process

Axiomtek's design service team consists of experts in mechanical engineering, electrical engineering, and industrial design, with professional expertise specific to the needs of medical device development. We facilitate all stages of customization – from conceptual planning, product design, functionality testing and debugging down to final shipping and deployment. We integrate your ideas, specifications and selection of components into our medical solutions to deliver the performance and outcome exactly as you expected. For instance, Axiomtek takes every critical factor into account while building a prototype for our customer: whether it is processing speed, storage capacity, noise reduction, ventilation, data acceleration, or even peripheral arrangement – all elements will be carefully thought out, tested, and executed to make sure the final output meets our customer's considerations.



Adjustable Assistance

Axiomtek's design services are known for their high flexibility. Customers can decide how Axiomtek gets involved in their projects by scaling down Axiomtek's assistance to semi-customized design service or micro-customized design service according to actual needs. This is particularly helpful for customers who wish to carry out most of the design on their own or need support for specific areas, such as re-configuring minor changes on a motherboard. A lower TCO (total cost of ownership) can be achieved.



Comprehensive Software Support

Aside from hardware services, our design services also provide software assistance, including embedded OS development, software API utility and driver support, as well as BIOS and UEFI firmware optimization. Our customer can use our BIOS service to personalize their product's boot-up screen, or request that each board come pre-installed with an embedded version of Windows OS in order to provide users with an easy-to-use interface.

Embedded OS Development



Software API Utility



Driver Support



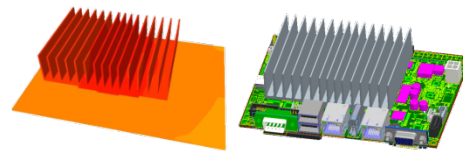
BIOS Customization



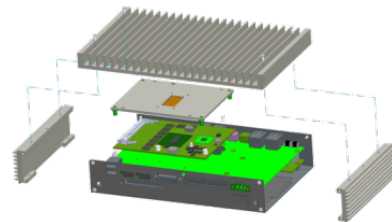
Thermal Solutions

Customers can count on Axiomtek's thermal solution service to ensure that their embedded boards or systems, despite generating excessive heat while running heavy workloads, are well protected by their excellent dissipation design to be able to cool down quickly and deliver reliable, failure-preventing performance. Our thermal design services include proven thermal modules, enclosures, and customizable thermal solution support, which guarantee Axiomtek's products are robust enough to operate under extreme temperatures.

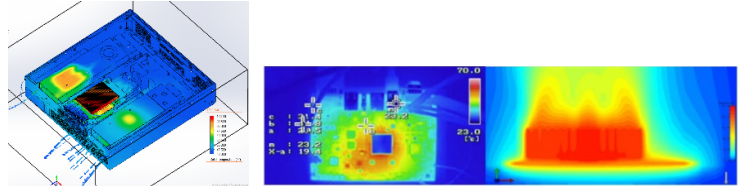
Proven thermal modules. Proven heat sinks, coolers or system thermal solutions qualified for different temperature conditions.



Customized thermal solution. Heat sink or cooler solution customized to a modularized thermal solution concept.



System thermal simulation. Using thermal simulation to evaluate airflow and heat transfer for optimal thermal performance.



Intelligent Medical Computing & Imaging Solutions

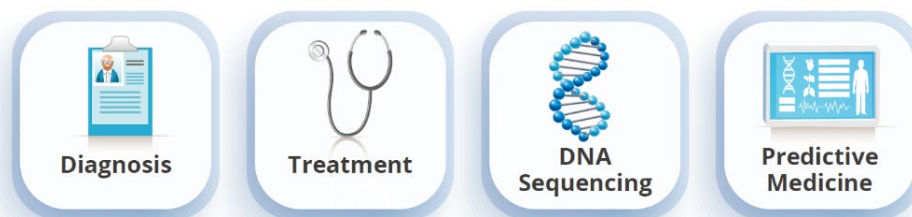
The use of AI in medical imaging and computing relies on the seamless integration of software and hardware equipment, along with mega computing power and graphical capabilities built into the system to process complex images into actionable knowledge.

Axiomtek's medical products come under a variety of different form factors, featuring high-performance CPUs, extensive storage, I/O and graphical power scalability, AI software support, as well as safety and medical-grade certifications to meet the highest quality criteria for healthcare and life science industries.

Medical Computing Server for Predictive & Precision Medicine

High performance computing (HPC) power. Axiomtek has been assisting our medical OEM/ODM customers with the design and customization of advanced medical-grade server systems for clinical diagnosis, precision medicine, and laboratory research. These servers are often found performing compute-intensive workloads for imaging analytics in medical data centers, such as genomic sequencing or pathological analysis like cancer screening, which requires powerful CPUs with high performance computing (HPC) capabilities to process massive datasets and heavy computations at very high speeds.

AI analytics capabilities. Axiomtek's medical servers create an ideal environment where the power of HPC and artificial intelligence (AI) can be brought together to unlock medical insights from vast amounts of image data, helping healthcare researchers understand the patterns of disease and make data-informed decisions to minimize life-threatening risks. Our medical server offers multiple PCIe expansion interfaces for GPU or FPGA cards to accelerate graphics processing, meanwhile supporting specialized AI software for programming deep learning algorithm models to perform object detection, image classification, and other AI-assisted visual recognition methods. Doctors can utilize these AI techniques to differentiate cancer cells from normal tissues, administer personalized treatment, and predict disease progression with high levels of accuracy. AI-enabled image analytics may also be applied to DNA sequencing, drug development, as well as surgical guidance and simulation training.



Health applications enabled by Axiomtek's medical servers: AI diagnosis, personalized treatment, lab DNA sequencing & predictive medicine

Fast data reading & writing. Complex medical computing workloads require speedy memory access with excellent SSD endurance to perform numerous write/erase cycles of large datasets. Our medical servers' massive memory scalability and long-lasting SSD write performance make them capable of storing and retrieving enormous datasets quickly and efficiently for heavy computation tasks.

mHPC200

2U Rackmount Server for AI Medical Computing



Axiomtek's mHPC200, a 2U rackmount medical-grade server featuring dual Intel® Xeon® Gold 6226R processors with Intel® C621 PCH, is designed to perform heavy computation and imaging analytics workloads for clinical diagnosis and laboratory research. The medical server supports DDR4-2666 ECC DIMM memory to provide up to 384 GB (12 x 32GB) capacity, along with 4TB U.2 SSD to deliver 3G/2.9G RW performance. It also provides two PCIe x16 Gen 3.0 slots where users can install GPU or FPGA accelerators to increase graphical

processing power for running AI imaging tasks. The mHPC200 targets the analytical applications of precision and preventive medicine including AI diagnosis and next generation sequencing research. By supporting deep learning SDK and related intelligent usage, it offers health experts the possibility to use AI technology to understand data, individualize treatment for each patient, and ultimately be able to achieve prevention of cancer and other genetic diseases.

mHPC200 feature highlights



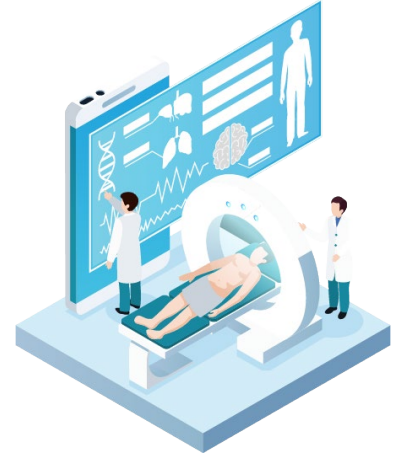
- Dual Intel® Xeon® Gold 6226R processors
- 384GB DDR4-2666 ECC registered DIMM
- Micron 6.4TB PCIe NVMe U.2 SSD, 9300 pro series
- Two PCIe riser cards supporting PCIe x16 data center accelerators
- 1200W Redundant Power ATX power supply
- Supports HDMI full HD output
- One Network card supporting dual 10G Base-T & dual SFP+

Medical Imaging & Edge Computing System

Axiomtek offers a full range of medical-grade systems to address the needs of mission-critical operations in hospitals and healthcare facilities, including real-time image streaming and display, medical instrument control, and computer-aided diagnostics with edge computing.

mBOX100: Real-Time Image Streaming & Data Processing

Axiomtek's mBOX100 medical system provides digital image processing functions to enable image-guided outpatient care and treatment procedures, real-time streaming for endoscopies, ultrasounds, MRI, and other image-assisted examinations, surgical video navigation control in operating rooms, as well as patient vital sign display and monitoring.



mBOX100 feature highlights



- 8th gen Intel® Core™ i7/i5 & Celeron® processor (Whiskey Lake-U), TDP 15W
- 2 DDR4-2400 MHz SO-DIMM slots for up to 64GB memory
- 1 HDMI 1.4 and 1 DisplayPort 1.2 with 4K UHD supported
- 2 COM & 2 GbE LAN support 4kV isolation
- Swappable 2.5" SATAIII SSD tray with security lock

mBOX600: Medical Edge Computing for Clinical Diagnosis

Axiomtek's mBOX600 medical grade system aims to make healthcare more intelligent by facilitating computer-aided diagnostics with IoT and edge computing technologies. It can be used to remotely control medical devices to monitor patient status, allowing data to be processed in the hospital, where it is generated, so that real-time information can be distributed instantaneously over the IoT network to health specialists without delay. By analyzing digital images where signs of possible diseases are identified or highlighted, the mBOX600 makes it easier for doctors to detect and diagnose problems, helping them make better decisions faster on patient treatment to stop disease from developing or progressing.

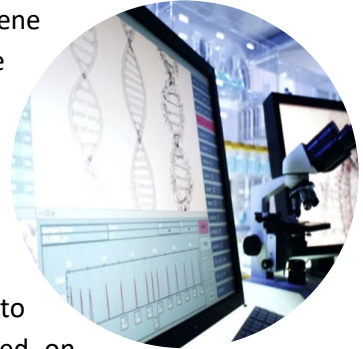
mBOX600 feature highlights



- Intel® Xeon® & 8th Gen Intel® i7/i5/i3 processors (Coffee Lake), TDP 45W
- 2 DDR4-2400 SO-DIMM slots for up to 64GB memory
- 1 HDMI 1.4 and 2 DisplayPort 1.2 with 4K UHD supported
- 2 COM and 2 GbE LAN support 4kV isolation
- Supports half-size PCI Express x16 slot
- Swappable 2.5" SATAIII SSD tray with security lock

Case Study: DNA Sequencers for Next Generation Sequencing

Built with high performance computing capability, modern next generation gene sequencers are able to map out an entire human genome of more than three billion DNA strands in a single week, providing rich DNA findings on many gene-related diseases and disorders, such as variations of DNA segments being used as biomarkers to identify certain types of cancer. These genetic data, after being further analyzed and structured using specialized AI technology such as deep learning, can generate biological models to assist physicians in clinical diagnostics, disease prediction, and drug selection, allowing them to provide customized treatment plans and healthcare recommendations based on specific patient data to prolong lives, increase recovery rates, and ultimately prevent life-threatening illnesses from developing.



DNA Sequencers that deliver sequencing results faster

Axiomtek was chosen by a global leading DNA machine manufacturer to create a DNA sequencer machine capable of mapping DNA sequences quickly and efficiently to meet their complex project needs. The customer's primary concern was CPU performance because next generation sequencing machines require an enormous amount of processing power to collect billions of pieces of DNA data in parallel. Other critical factors to consider include fast memory access, reliability of reading and writing large datasets, as well as excellent thermal dissipation capability and low-noise operation.

Taking their needs into consideration, Axiomtek designed a dual CPU server board computer that could support two high performance 1.8 GHz Intel® Xeon® E5-2400 series CPUs. The next generation sequencing company was particularly impressed by the Intel® Xeon® because each CPU supports 8 cores – giving each board a total of 16 cores. Additional functions for the Intel® Xeon® include the Intel® Turbo Boost Technology, which significantly boosts the processor's speed for heavy workloads. The Intel® Xeon® E5-2400 series also supports Intel® Hyper-Threading Technology which enables each core to accomplish multiple tasks at the same time in order to increase time efficiency. In addition, the customized board supports DDR3 unbuffered 256GB of memory for increased computing needs. This custom server board computer comes with SATA interfaces for extensive storage of DNA sequence data, multiple LAN and USB ports, PCIe lanes, as well as VGA and LVDS outputs for applications requiring the display of medical images.

In order for the sequencer system to operate reliably in various applications, the customer has also adopted Axiomtek's thermal solution to ensure the product has a successful thermal design to prevent failure under extreme temperature conditions.

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.