

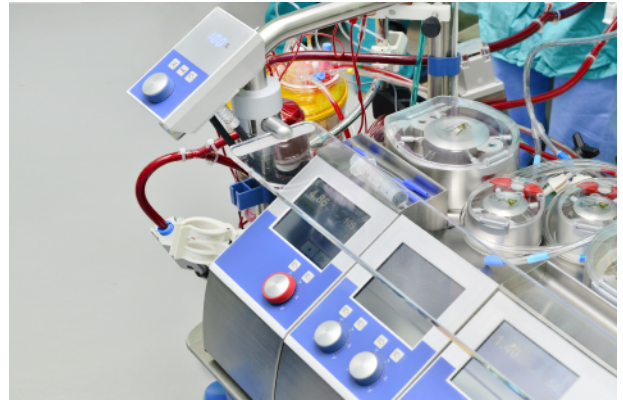


Advanced Technology Helps Optimize Cardiac Surgery

© 2017 Axiomtek Co. Ltd., All Rights Reserved.



Heart-lung machines take over the oxygenation and circulation of blood during cardiac surgery. They allow surgeons to operate on a resting heart while the heart-lung machine keeps the patient alive. Typical operations using a heart-lung machine include heart valve repair, bypass surgery, aneurysm repair and arrhythmia surgery. While some heart-related surgery is now carried out without a heart-lung machine or off-pump while the heart is beating, the machines are still required for surgery on the heart itself. It is made possible all the advances in cardiac surgical treatments. It allows a surgeon to stop a heart temporarily to explore heart cavities, valves, or arteries and repair the damages.



The main components of the machine are a blood pump, an oxygenator used to regulate the exchange of oxygen and carbon dioxide, and a heat exchanger to control the patient's body temperature. In addition to the basic oxygenation and pumping functions, heart-lung machines control variables such as blood temperature, pressure, and flow. The machines have to accurately regulate and monitor a variety of parameters to make sure the patient's condition is correct and stable. These components are controlled by a computer that plays a critical role in ensuring proper and reliable operations. Key factors for the control system are speed, accuracy, reliability and ease of use. Sensors must be read frequently or continuously, valves and pumps must be monitored and controlled, heating and cooling systems must function as desired by the doctors and important data such as oxygen levels must be displayed.

Advanced medical computers control these functions where centralized control is an asset and carry out the different tasks in an optimized way. An industrial-grade computer can be integrated into a heart-lung machine and connected to a touch display monitor that acts as an interface. Depending upon the requirements or specific features a medical device manufacturer is implementing for the machine, they may opt for an all-in-one touch panel computer. With increasing availability and accessibility of advanced industrial computers through innovation and improved production process, medical device manufacturers have more options and can customize their machines for better patient's treatments and results. Doctors can exercise tight control over the process, both doctors and nurses can see at a glance what is happening and advanced controls mean better outcomes for the patients.

Axiomtek Medical Computers, touch panel PCs, and Design Services

Axiomtek manufactures advanced medical computers and can help customers integrate such technology into their medical systems. The company has extensive experience with complex medical devices and can help with medical system design, customization and FDA approval. Axiomtek's medical computers are manufactured in their ISO13485 certified facilities and the medical-grade touch panel PCs, embedded systems and high power motherboards can meet the FDA requirements for medical use. In addition to supplying such critical hardware, Axiomtek can rely on the company's extensive medical device integration experience for medical OEMs and ODMs to support

customers with wide ranging, personalized design and customization services.

The product engineering and OEM/ODM services teams at Axiomtek can help ease the burden of medical device manufacturers by offering both the required hardware and the customizations and additional design services required for heart-lung machine and other medical device development. Key Axiomtek products for medical applications include embedded systems, the EN60601-certified touch panel computers, and highly advanced motherboards. Axiomtek medical computer

products satisfy many medical device manufacturers' requirements and are suitable for integrated medical devices including heart-lung machines.

Example: Axiomtek all-in-one medical touch panel computers (MPC series) offers a variety of screen sizes, IP65-rated, spill-proof front bezel and anti-microbial enclosure, scalable CPUs, multi-touch screen, ample and expandable storage, communications and expansion capabilities and more. Some of the key features are as follows:

- 24" FHD TFT LCD display with LED backlight
- Socket Intel® Core™ i7/i5/i3, Celeron® & Pentium® mobile processors
- EN 60601-1 and CE certified
- Spill-proof front panel design

- 10-point multi-touch screen
- Antimicrobial enclosure
- Ultra slim and super lightweight design
- Supports optional wall mount/VESA arm/desktop stand

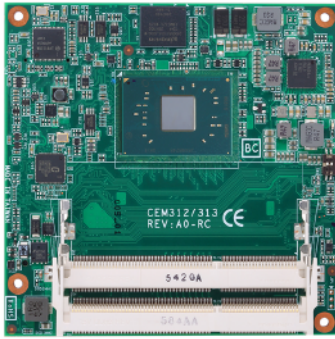


Benefits of Using Axiomtek Medical Design Services

Axiomtek has designed and manufactured advanced electronics for industrial and medical use since 1990. Customers have access to the company's expertise and broad product range to help them develop high-quality medical systems. Axiomtek has standard medical touch panel PC products that are certified/in compliance with UL, EN and IEC standards. Medical equipment such as the heart-lung machine can use an Axiomtek medical computer and the corresponding design services to help improve safety and decrease risk.

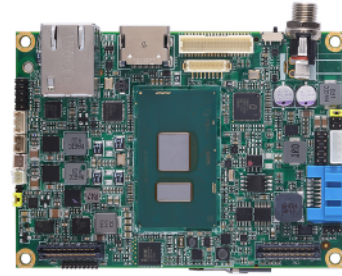
The Axiomtek products - including embedded motherboard, embedded systems, touch panel PCs and medical-certified touch panel PCs - are continuously enhanced to take advantage of the latest technology. When combined with the company's personalized design and value-added services, medical device design expertise, global footprint, R&D resources, and regional support teams, Axiomtek can support medical OEMs/ODMs with their projects of any size and complexity. Board-level or system-level design services for each customer are supported by an assigned, dedicated team consists of project manager, product manager, application engineer, account support representative, and more. Axiomtek's customer-focus team is ready to assist and ensure easy product development stages and fast deployment time. Axiomtek Medical's mission is to provide its medical device manufacturers customers worldwide with advanced, powerful, and reliable solutions and exceptional services.

Product Showcase



CEM313 – Scalable and Customizable COM Express Type 6 Compact Module

- Intel® Pentium® processor N4200 & Celeron® processor N3350 (Apollo Lake)
- 2 DDR3L-1600 SO-DIMM, up to 8GB
- Maximum of up to 4 lanes of PCIe
- 2 SATA-600
- 4 USB 3.0 and 8 USB 2.0



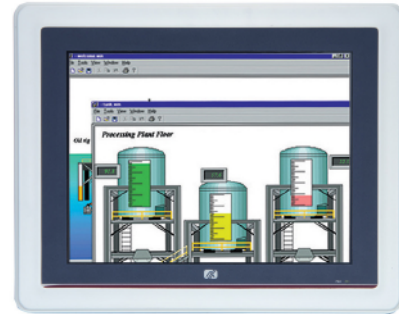
PICO512 – Powerful PICO-ITX Motherboard with Rich Features

- 7th Gen Intel® Core™ i7/i5/i3 and Celeron® processor
- 1 DDR4 SO-DIMM, up to 16GB
- 1 PCI Express Mini Card slots, 4 USB 3.0
- Intel® AMT 11 supported



MPC240 – The EN60601-certified Medical Touch Panel Computers

- EN 60601-1 and CE certified – 4th Generation Intel® Core™ i7/i5/i3, Celeron® & Pentium® mobile processors
- 24" FHD TFT LCD display with LED backlight and 10-point multi-touch screen
- Spill-proof front panel and antimicrobial enclosure
- Ultra slim and lightweight design



GOT5100T-845/GOT5120T-845 – 10"-12" XGA/SVGA TFT LCD Power Efficient Resistive-type Touch Panel Computers

- Fanless design with Intel® Celeron® processor N3060 with up to 400 nits in brightness
- 2 Gigabit LAN, 4 USB, and 2 COM ports
- IP65/NEMA4 front bezel
- Expandable with 2 Full-size PCIe mini Card with mSATA and SIM slots with optional RFID