



## » Embedded Technology for Medical Solutions «

Application ready Platforms for premium Medical Solutions

- » Long Term Availability
- » Custom Designs
- » High Reliability and Quality Assurance
- » Access to Latest Technology
- » Value Adding Hardware & Software Services

## » Solutions «



### Ultrasound Imaging Mobile Diagnostic

The arm-held diagnostic ultrasound system MyLab™One embeds an entire high performance ultrasound scanner in a 12-inch touch-screen tablet PC. The arm-held system allows the user to have the typical interaction you would have with any latest generation PC, simply by touching the screen, without using a keyboard or an external pointing device.

Due to its very small size, lightness and portability, the battery powered system can be used without a worktop. This complete autonomy makes it possible to use the ultrasound scanner anywhere – even in more critical environments such as outdoor emergency situations at which time the reliability of the diagnosis are of paramount importance.

The new ultrasound device, which is one of the world's most compact mobile ultrasound designs, required both small size and excellent performance to capture the images and process them in real time. Esaote's choice was the COM Express® compact family from Kontron. Designers of small mobile devices especially benefit from the fact that the compact form factor uses 25 per cent less real estate on the carrier board compared to basic modules, leaving more room for other components under extreme limited space conditions. Furthermore, with smaller form factors, the power consumption in general is reduced, which leads to an increased battery up time so that even more light-weight devices can perform faster for even longer time without recharge.



### Dental Communication System for Dental Practices

ERGOcom 4 is an innovative communication system for dental practices. This cockpit concept, links the treatment unit and the practice's IT network, and delivers a variety of valuable information, such as X-ray images, from the network straight to a rotatable screen where the dentist is working. Here the dentist can also connect an interoral camera to view real-time images of parts of the mouth that are hard to access. Not forgetting the patient, who can call up a multimedia program for entertainment and distraction during lengthy treatment sessions.

When developing this system, KaVo engineers wanted a solution that offered flexibility and sustainability. The solution chosen by KaVo is an ETXexpress® module with a custom baseboard from Kontron and is based on the COM Express® standard. This technology fuses flexibility and scalability, plus has the capability of adopting the kinds of innovations that emerge with future developments. The mechanical and electronic concept of the COM Express® standard not only demonstrated its worth in the initial phase, but ongoing development also shows that the standard can be effortlessly matched to new needs in terms of form factor and energy efficiency. Kontron additionally offered competent and reliable support during design-in and ensuing phases.



## Ophthalmology

### Cataract and Refractive Surgery Solutions

Kontron's products are utilized within the TECHNOLAS® Laser Suite, an innovative all laser cataract and refractive platform which combines the TECHNOLAS Femtosecond Workstation 520F and the TECHNOLAS Excimer Workstation 217P. This laser suite offers the widest range of advanced cataract and refractive procedures including a new femtosecond laser procedure for performing the key steps in cataract surgery.

Known as CUSTOMLENS™, this software module has been developed to enable a change in paradigm in cataract surgery. With CUSTOMLENS™, cataract surgery can now be gently performed with computer precision, replacing the previous manual approach. Further procedures available on the TECHNOLAS 520F include LASIK flaps, therapeutic indications and a minimally invasive, intrastromal treatment for presbyopia, INTRACOR®.

A state-of-the-art excimer-based treatment for presbyopia can now also be conducted on the TECHNOLAS 217P. Treatments for myopia, hyperopia, astigmatism and presbyopia are all performed on the 217P using the latest real-time Advanced Control Eyetracker (ACE™) and iris recognition technology.



## Customer Statements

*“At Fresenius, our major focus in medical technology is to continuously improve patient care. We do this with our wide range of solutions which enables us to increase the quality and efficiency of care. Any mistakes have to be ruled out. This is why we work with our partner Kontron. With its comprehensive portfolio of products which have been specially developed for the medical market, Kontron has extensive know-how of the necessary norms and requirements in this sensitive market and achieves an excellent combination of innovation and reliability.”*

**Kerstin Wolf**  
**Director Purchasing**  
**Fresenius Medical Care Deutschland GmbH**

*„As a global leader in medical and safety technology, Dräger develops devices and solutions which people from all around the world rely on. Wherever Dräger products are used, the most important thing is at stake: Life. Any company developing technology which is responsible for lives, must do more than just guarantee technical excellence. It has to take on responsibility - responsibility for the people who need this technology and who rely on it. We make the same demands on our technology partners. Thanks to its deep understanding of the industry and its innovative and long-lasting embedded platforms, Kontron is a perfect match for us.”*

**Guido Willmann**  
**Head of Global Commodity Management Electronics**  
**Strategic Purchasing**  
**Dräger Group**

# » Rely on a well-experienced Partner «

## Customers can reduce time-to-market and use their resources efficiently

Kontron is a well experienced partner for medical OEMs. Offering application ready platforms and value adding services we enable our customers to create sustainable and viable medical solutions.

Kontron products are found in applications throughout the industry including imaging, patient monitoring, diagnostics, therapy, tele-health, proactive health as well as clinical IT.

Kontron understands the extensive and evolving requirements of the medical equipment industry. Our customers can rely on the best service possible. This includes our highly qualified Program Management and system design expertise as well as environmental and agency test experience and optimized logistics and production up to an extended lifecycle management.

### Your Benefits at a Glance

- » Long-term availability through extended Product Lifecycle Management
- » High reliability and state of the art quality assurance
- » Tailor-made solutions optimized for individual applications
- » Reduced time-to-market with access to latest technology
- » Reduced R&D costs through comprehensive value adding hard- and software services

### Longevity & Lifecycle Management

Kontron offers availability for boards and platforms up to 7 years, and even longer on a case by case basis. A careful design and vendor approval approach as well as scheduled reviews, minimize unwelcome surprises during the product life.

### Quality Assurance through Certifications

In addition to ISO 9001:2008, many of Kontron's products and custom designs have been EN 60601-1 certified alongside the industrial environmental standards.

### Custom Product Realization

For applications where off the shelf products don't quite fit, Kontron offers semi- and full-custom designs tailored to the individual demands of the application. With 40% of Kontron's employees dedicated to R&D and a broad range of design capabilities, Kontron develops the products and provides the services to realize your customized solution including individual logistic concepts.

### Leading in Innovation

Kontron is supporting all major processor platforms while also establishing global technology standards to be able to offer optimized embedded solutions for your individual applications and reduce your time-to-market.

### Value adding Hard- and Software Services

Kontron's extensive OEM business experience supporting long lifecycles, software services and supply chain capabilities enables you to focus on your core competences differentiating yourself from your competition.

## Scalable Embedded Computing Platforms

	Intel® Atom™	AMD	Intel® Core™ i3 / i5 / i7	Intel® XEON®	ARM/ Power PC
Computer-on-Modules	•	•	•		•
Embedded Motherboards	•	•	•	•	•
Rack Mount Systems			•	•	
Box PC	•	•	•		
Panel PC	•		•		•

# » Application Ready Platforms: Simple Customization - Easy Integration «



## Computer-on-Modules

Thanks to Computer-on-Modules (COM), customers can concentrate on their core business and only have to design the necessary interfaces and circuits for their individual carrier boards. The standardized computer module is then simply plugged into the carrier board.

With x86, ARM and PowerPC design experience, Kontron develops and delivers any kind of Carrier Board, including test, memory, heatsink, housing, assembly, individual configuration, packaging and shipment. Even if you can't find a suitable module in Kontron's broad product range, we'll take on the design and the manufacturing of complete boards with any desired CPU in any desired form factor.

### COM Express® basic Quad Core performance



- » 3rd Gen. Intel® Core i-Series
- » Triple Independent Display support
- » Quad Core performance for COM Express®
- » Up to 16 GB DDR3, Dual Channel



## Embedded Motherboards

Kontron offers a broad range of high quality longevity motherboards from Mini-ITX to full size ATX, covering Embedded and Server market. These motherboards are based on newest processors and chipset platforms, and utilize advanced technology components.

In addition, Kontron offers many value adding services like detailed documentation, display support and complete life-cycle management. The Embedded and Server motherboards offer up to 7 years product availability from the release date, based on embedded key components.

### Medical Motherboard Embedded Motherboard



- » Optimized for medical devices & applications (2x isolated LAN)
- » Long term available
- » High CPU and graphics performance



## Rack Mount Systems / Back-End Processor Systems

Kontron offers a large array of Intel® based Rack Mount platforms around two core architectures: passive back-plane (SBC) and motherboard. There are full custom designs available for mobile and server applications with high speed front-end interface and GPGPU options as well as EN 60601-1 isolated Ethernet and USB.

- » Low noise design
- » Shock proof design
- » Excellent thermal design
- » Hot swap chassis fans

### Medical LAN Card IEC60601-1 Compliant PCIe



- » Connects devices to conventional workstations or servers
- » Single or dual version
- » LAN with reinforced insulation
- » Based on Intel® LAN Chip 82574



## Box PCs

With passive, convection cooling concepts, the fanless Box PCs are developed for permanent and silent operation without maintenance.

Fanless Box PCs with ULV processors based on Atom or PC104 technology are increasingly being used in different types of terminals with limited space or where cooling is not possible.

Customized EN 60601-1 approved solutions are available.

### Medical Box PC

Information anywhere



- » Patient information at a glimpse
- » On up to 4 independent monitors (DVI)
- » Silent operation (fanless)
- » EN 60601-1 approved solution



## Panel PCs

The product line of HMIs (Panel PCs, Micro Clients, Touch Panels) offers a wide range of processor capacities and display dimensions from 5.7" up to 22". The 100% industry-capable intelligent displays and monitors meet the toughest industrial requirements concerning shock, vibration and temperature resistance. No matter what your requirements are, Kontron provides you with semi- and full-customized Panel PCs and long life support for your control and visualization applications taking into account the latest requirements in your market.

- » Fanless cooling at maximum processor performance
- » High performance with embedded multi-core processor technology
- » Closed cabinets and protected surfaces, easy to clean
- » Low power consumption

### Medi Client

Panel PC for Medical Applications



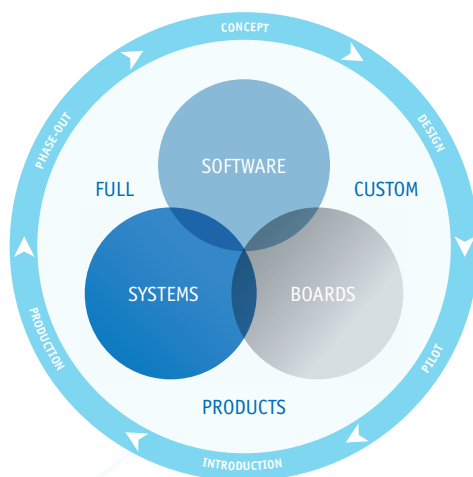
- » Robust, light and easy to clean plastic housing
- » Silent operation (fanless)
- » EN 60601-1 compatible

# » Value Adding Hard- and Software Services «

From design cycle to lifecycle management, Kontron is a full-service medical OEM solution partner

## Design and Lifecycle Services

With our experience in the medical market, Kontron is able to provide full engineering support throughout the design cycle and will manage the various engineering disciplines seamlessly throughout the product design and lifecycle process. Starting with concept discussion, architecture selection, hard- and software development, tests and certifications to mass production and lifecycle management – Kontron always has the right resource for your project.



## Software Services

Kontron provides software services to meet modern medical technology challenges. Combining longstanding hard- and software expertise under one roof, Kontron is your one-stop-shop for the realization of your application ready platform.

## Engineering and Custom Design

With 40% of Kontron employees dedicated to R&D you can choose from a broad portfolio of standard products including all major form factors, platforms and systems. Kontron also offers custom engineered and manufactured solutions. Thanks to an excellent expertise in board and system design, you benefit from the same high quality and longevity Kontron offers in its standard-based products. In addition you can be sure that your product will be designed to meet the challenges of the relevant standards in the medical market.

## Project Management

Kontron unburdens its medical customers with its proactive Program Management. Cross-functional project teams lead and manage all stages of the specific project to ensure a successful product release and to minimize management attention on customer's side. For this reason you will have more internal resources available for innovation, shorten release cycles for new products and consolidate your access to market-leading technology.

## Program and Supply Chain Management

To ensure product consistency and longevity, Kontron is responsible for all elements of the supply chain and the long term requirements of our customers. Services such as component qualification and documentation, logistics setup and management, and supply monitoring allow medical OEMs to focus on their core competences and reduce overall costs and use their resources more efficiently.

## Certifications

As an ISO certified company, Kontron understands the importance of quality assurance for our customers and our partners. In addition to ISO 9001:2008, many of Kontron's products and custom designs have been EN 60601-1 certified alongside the industrial environmental standards.

- » ISO 9001:2008 (QM System)
- » ISO 13485:2003 (Medical Devices QM System)
- » ISO 14001:2004 (Environmental)

## Lifecycle Management

Kontron understands product lifecycle management as a concept that spans the entire life of the product, from the first concept to the last delivery allowing optimum longevity. It includes architecture, design, production and logistics management. Systems and boards are designed to be available for up to 7 years and longer as we understand the importance of longevity in medical designs. In the event of a component "end of life" this is the start of focused communication involving supply chain, engineering and product management to work on a transition plan for an update or migration to a new product.

## About Kontron

Kontron is a global leader in embedded computing technology. With more than 40% of its employees in research and development, Kontron creates many of the standards that drive the world's embedded computing platforms. Kontron's product longevity, local engineering and support, and value-added services, helps create a sustainable and viable embedded solution for OEMs and system integrators.

Kontron works closely with its customers on their embedded application-ready platforms and custom solutions, enabling them to focus on their core competencies. The result is an accelerated time-to-market, reduced total-cost-of-ownership and an improved overall application with leading-edge, highly-reliable embedded technology.

Kontron is listed on the German TecDAX stock exchanges under the symbol "KBC". For more information, please visit: [www.kontron.com](http://www.kontron.com)

### CORPORATE OFFICES

#### Europe, Middle East & Africa

Oskar-von-Miller-Str. 1  
85386 Eching / Munich  
Germany  
Tel.: +49 (0) 8165 / 77 777  
Fax: +49 (0) 8165 / 77 219  
[info@kontron.com](mailto:info@kontron.com)

#### North America

14118 Stowe Drive  
Poway, CA 92064-7147  
USA  
Tel.: +1 888 294 4558  
Fax: +1 858 677 0898  
[info@us.kontron.com](mailto:info@us.kontron.com)

#### Asia Pacific

17 Building,Block #1, ABP.  
188 Southern West 4th Ring Road  
Beijing 100070, P.R.China  
Tel.: +86 10 63751188  
Fax: +86 10 83682438  
[info@kontron.cn](mailto:info@kontron.cn)