



Embedded Medical and Health Devices

Secure and Connected Across the Globe

June 30, 2011 – Embedded Intel technology is found inside applications ranging from diagnostics and therapeutics systems, to imaging and proactive health equipment. Medical practitioners rely on these applications for improved data-collection, improvement in tracking systems, and an enhanced patient experience. For patients, embedded technology simplifies the process for receiving quality treatment, while increasing the effectiveness of doctors, nurses and administrators providing and managing their care. With the development of portable and connected medical devices, people from around the world have the ability to give and access information to make better, more informed decisions for a healthy life.

In an industry where advanced technology can radically accelerate and improve medical and healthcare systems, Intel's technology enables medical equipment manufacturers and providers to introduce smarter and more connected solutions to the market.

Medical Devices in the Hospital, Home and Developing Nations

As the complexity and number of machines and records within the hospital room increases, Intel technology-based systems allow the devices to connect, enabling automatic summarized data, faster workflow and the creation of operational efficiencies for healthcare providers and manufacturers. Doctors, nurses, or other healthcare providers can now access patient records from a simple handheld device to make well-informed decisions on-the-go.

Medical devices based on Intel technology allow for smaller form factors, resulting in portable medical devices with simple user interfaces that give patients the opportunity to securely transmit vital patient data to a specialist as it is being measured from the comfort of their own home.

Around the world, many populations living in rural areas require healthcare services but cannot travel to medical facilities. [Telemedicine](#) technology can connect medical specialists with patients, regardless of location. A remote patient monitor enables real-time transmission of high-definition audio and video so trained specialists practicing in large urban hospitals can consult with patients at clinics in remote villages, reducing costs and travel time.

Device Development and Manageability

Device manufacturers and providers require high-performance systems that are secure, networked, scalable and easy to maintain, making [Intel® Xeon™](#), [Intel® Core™](#) and [Intel® Atom™](#) processors an ideal fit.

- Performance: Intel technology provides the computing power necessary to quickly collect and analyze data that magnetic resonance imaging (MRI) machines and other high-end imaging devices require.

- Connected Manageability: Medical and fitness devices with [Intel® vPro™ Technology](#) and [Intel® Active Management Technology](#) allow administrators to manage, diagnose and solve hardware and software issues remotely. Remote management technologies help create equipment that is more easily updated, maintained, tracked and patched, within a rural or home environment.

Spectrum of Devices

Diagnostics: Intel is inside diagnostic systems such as patient monitors and bedside terminals.

- [Interactive Bedside Terminal from JAOTech*](#)
To enable more informative consultations, bedside terminals feature applications that show patients more information, such as computed tomography (CT) images and X-rays at their bedsides. These devices have several models ranging from Intel® Atom™ to Intel® Core™ 2 Duo processors and can monitor vitals, provide entertainment options and offer real-time meal selections.

Imaging: Intel is inside imaging systems including MRIs, ultrasound devices and CT scanners.

- [3D Ultrasound CT Breast Imaging System by TechniScan Medical*](#)
TechniScan Medical System's 3D UltraSound CT Breast Imaging System features seven [Kontron*](#) single board computers based on Intel® Core™ 2 Duo processors. The system produces images with MRI clarity that distinguishes unique tissue properties, such as differences between water-filled cysts and solid tumors, that prevent the need for invasive procedures.
- Ultrasounds: [Philips Ultrasound](#), [Esaote Ultrasound](#), [Siemens Ultrasound](#)

Proactive Health: Intel technology powers the latest Internet-connected, high-tech health fitness equipment, enabling users to proactively manage their health and wellness.

- [SoloHealth Station from SoloHealth*](#)
SoloHealth Station is a proof of concept demo based on an Intel® Core™ i5 processor. The connected self-service health station allows consumers to screen their vision, blood pressure, weight and body mass index in seven minutes or fewer, as well as provide them with specific, actionable health recommendations. The kiosk also enables consumers to identify and contact local physicians.
- [MayaFit Training Station from Respondesign*](#)
MayaFit is a digital fitness training system developed in conjunction with game developers and fitness experts. MayaFit uses the latest in exercise and behavioral science to motivate, instruct and track fitness lifestyle, and can recognize and observe exercise form, count repetition for each movement and score experience points for correct technique and consistency.