

Siemens Showcases World's First Wireless Ultrasound System



At the Annual Meeting of the Radiological Society of North America (RSNA) in Chicago, U.S., Siemens Healthcare is introducing the Acuson Freestyle ultrasound system that features wireless transducers, eliminating the impediment of cables in ultrasound imaging.

The Acuson Freestyle system will expand ultrasound's use in interventional and therapeutic applications, where the technology provides numerous workflow and image quality advantages.

Transducer cables have always been a cumbersome necessity in ultrasound imaging. Not only are they an impediment to fast and ergonomic examination procedures, but they also present an infection control risk in sterile interventional settings, even when they are covered in sterile sheaths.

"Siemens Healthcare is the first company to introduce an ultrasound system that enables physicians to work with cable-free transducers," said Jeffrey Bundy, CEO of the Siemens Healthcare Ultrasound business unit. "The Acuson Freestyle system facilitates the use of advanced ultrasound technology into clinical fields requiring a sterile environment, such as interventional radiology, anaesthesiology, critical care, cath lab, or emergency care."

Wireless transducers can also expand ultrasound into new and emerging applications, such as administering nerve blocks, enhancing vascular access, and improving target localisation through ultrasound guidance during therapeutic interventions and biopsies.

For image acquisition and processing, the Acuson Freestyle system employs advanced synthetic aperture imaging technology, an integration of proprietary hardware and software, which was specifically developed for the wireless signal transmission of full-resolution digital image data at very high data rates. Focusing on each pixel in the image, this method produces excellent image quality throughout the field of view. This design reduces the transducer's power requirements, increasing battery life.

Wireless real-time ultrasound data transmission is further enabled through the proprietary development of a novel ultra-wideband radio technology, which, operating at a high frequency of 7.8 gigahertz, is not susceptible to interference with other electronic equipment.

Three wireless transducers are available for the Acuson Freestyle system, covering a range of general imaging, vascular, and high-frequency applications such as musculoskeletal and nerve imaging. The user can operate the transducers up to three metres away from the system, which includes an ergonomic interface that enables remote control of scanning parameters from within the sterile field.

The Acuson Freestyle system has a 38-centimetre, high-resolution LED display. The system console can be mounted easily on a lightweight cart and also operates on battery power.

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