



ULTRASONIX
ultrasound your way

Open Platform. Raw Data. High Frequency Imaging

Research and Preclinical Ultrasound



Ultrasonix Research Platforms

Ultrasonix has been a leading provider of dynamic ultrasound research systems for university and biomedical research for more than 10 years. Our full diagnostic ultrasound research systems are used in more than 200 organizations around the world. Access to our specialized software toolkits, software updates, as well as unlimited access to our online forums and knowledgebase comes standard with all Ultrasound research systems.

SonixTouch Research – the ultimate research system

A diagnostic ultrasound system with full research capabilities, SonixTouch Research is our top of the line system. It is used in clinical environments to capture high quality diagnostic images and is also used to retrieve raw data needed to perform more in-depth analysis. For maximum flexibility, customized experiments are performed by taking advantage of many software toolkits that come standard on the system. The research interface allows you to capture data and tweak up to 500 parameters that control how the ultrasound imaging and beamforming is performed. SonixTouch Research is a cart-based solution designed for small spaces. It offers high-performance imaging and a powerful PC configuration for researchers developing new technologies.

SonixTablet Research – portable system ideal for student labs and limited budgets

SonixTablet is a more affordable solution when budgets are limited or when multiple systems are required. It is built on the same engine and offers the same open software platform as the SonixTOUCH. This portable system can be used on a desk like a development PC and is easily hand-carried into clinical scenarios when collecting patient data. The SonixTABLET platform does not provide hardware synchronization signals, and is not compatible with the SonixDAQ or Ultrasonix ECG devices.

“The open architecture of Ultrasonix systems helps us when we go into clinical trials at hospitals because we don’t have to bring an ultrasound machine with a whole computer workstation and other image processing hardware; we develop and integrate everything right on the clinically approved machine.”

Dr. Robert Rohling - Associate Professor of Electrical, Computer and Mechanical Engineering at the University of British Columbia.

SonixResearch Systems Comparison Table

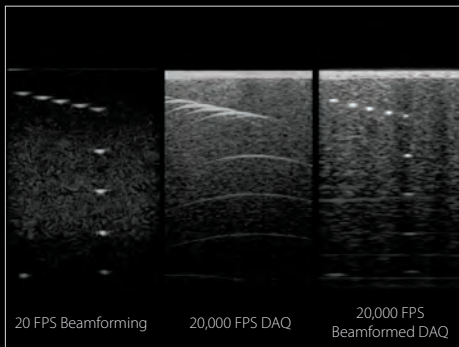
	SonixTouch	SonixTablet
Open Platform	Yes	Yes
SDK Compatible	Yes	Yes
Full Raw Data Access	Yes	Yes
SonixDAQ Compatible	Yes	No
Supports ECG	Yes	No
Hardware Sync	Yes	No
HandCarried	No	Yes



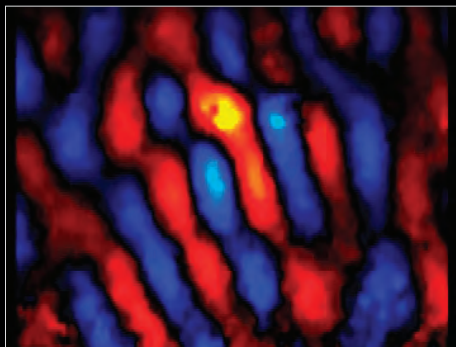
We're innovating so you can too

SonixDAQ Parallel Data Acquisition

The SonixDAQ, combined with the clinically approved SonixTOUCH Research, revolutionizes ultrasound research by providing 128 channels of pre-beamformed data at sampling rates up to 80 MHz, while being able to see the B mode image on the screen. Prebeamformed RF data is digital data acquired from each channel on an ultrasound system. Access to this data allows scientists to create new beamforming techniques, research new scanning methods, develop photo-acoustic applications, and discover new methods for pathology detection for research purposes. Most ultrasound devices that can be used for research either do not have the capability to acquire such data, or are bench-top non-clinical systems. The SonixDAQ can be used in clinical research environments to acquire and create databases with various types of exams, with and without pathology, for post processing and analysis.



20 FPS vs 20,000 FPS



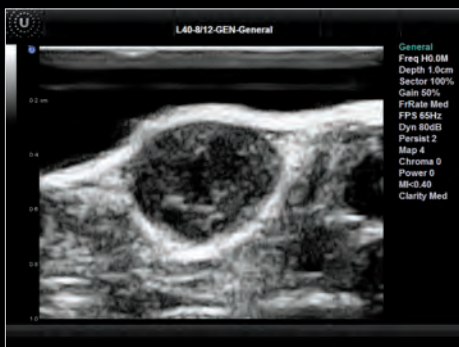
High frame-rate tracking



SonixDAQ attached to system

High Frequency Ultrasound imaging for preclinical applications

Ultrasonix offers a system and transducer bandwidth from 1 to 40MHz on its Sonix platform to enable small animal imaging for research applications such as cancer detection and contrast imaging. This type of research enables testing of new treatment methods and various pharmaceuticals that impact the physiology and biology of normal and mutated cells. High Frequency imaging also enables researchers to make breakthroughs in imaging diagnostics and other specific applications that include gene delivery and stem cell research. Our High Frequency technology can be combined with our SonixDAQ parallel data imaging feature to perform preclinical photo-acoustic imaging. Larger animal testing is also possible on the same system with the L14-5 and C5-2 transducers.



Mouse Breast Tumor



Mouse Kidney



High Frequency Transducer (L40-8/12)

Key features of Sonix Research Systems

Raw Data Access

Over a dozen different formats of raw data to choose from, including beamformed and pre-beamformed RF data, B mode data, Color and PW Doppler.

Mature Research Interface

We've been adjusting our user interface for years in response to feedback from the research community. Intuitive and sleek, the Sonix systems provide a unique experience.

Programmability

Get access to over 500 system parameters for full control of beamforming, image processing, and other ultrasound techniques.

Software Toolkits

We provide toolkits to help you design your own software and create custom programs to enhance the research being performed on the system.

MATLAB® Full Readiness

Numerous scripts and code is available in MATLAB format and downloadable from research.ultrasonix.com – MATLAB is one of the leading languages for signal and image processing. Examples include plane-wave beamforming and the full ultrasound processing chain from pre-beamformed data to image formation.

Clinically Driven Imaging

Our research interface has been developed on top of clinical interfaces approved by the FDA and CE marked, leveraging premium image quality and thousands of hours of fine tuning parameters and applications.

Dedicated Support

The Ultrasonix online research forum is an invaluable tool and knowledge base allowing researchers to connect to one another. Ultrasonix also regularly updates an online wiki to fully document the latest systems and features.

General Specifications

Toolkit Descriptions

Texo: Low level beam sequencing

Ulterius: Remote control and raw data streaming

Porta: Customized ultrasound applications

Pando: Optimized scan conversion tools

Amplio: Processing chain software

Fluctus: ECG interfacing toolkit

Propello: Volumetric transducer control

Imaging Modalities

- B
- Color Doppler
- Pulsed Wave Doppler
- Spatial Compounding
- Extended Field of View
- 3D/4D
- Plane Wave
- M
- Power Doppler
- Continuous Wave
- Harmonic Imaging
- Panoramic
- Elastography
- Compound Plane Wave

Data Types Available

- RF (pre/post beamformed)
- B Mode (raw/envelope)
- B Mode (scan converted)
- PW RF Gates
- PW Spectrum
- M Spectrum
- Color Doppler (full RF ensemble)
- Color Doppler (velocity/variance)
- ECG Trace
- Volumetric Data (RF/B/Color)
- Relative Strain Data

About Ultrasonix

Ultrasonix develops and manufactures diagnostic ultrasound imaging systems with customizable touch screens to simplify workflows. The company's systems are built on an open software platform that enables remote service and easy updates to keep current with advancements in imaging technology. Founded in 2000, Ultrasonix is a privately-held company headquartered in Richmond, British Columbia, Canada. Our ultrasound research systems are used in more than 200 organizations around the world.

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