

LANTRONIX®

INDUSTRY:

Medical / Connected Healthcare

Lantronix Contributes to Development of AI-Assisted Handheld Ultrasound Device



Success Highlights

- Enables OEMs to fast-track product development
- Facilitates quick creation of a market-ready prototype
- Reduces the total cost of development
- Includes FCC/IC and Canada pre-certifications

Case Study Overview

With the support of Lantronix Engineering Services team and its Open-Q™ Micro SOM (μ SOM) and Development Kit, EchoNous created Kosmos, the first AI-assisted handheld ultrasound device. Designed to increase diagnostic confidence at the bedside, the Kosmos tool enables clinicians to perform heart, lung and abdominal assessments in just minutes. Its evolving AI platform is based on innovative, deep-learning techniques that solve everyday problems in healthcare.

“Lantronix’s Open-Q μ SOM delivers the best performance for the cost. Nothing compares to its processing power for small, AI-assisted devices like the Kosmos handheld ultrasound device.”

– Niko Pagoulatos, Chief Technology Officer, EchoNous

CHALLENGE: Create AI-Powered Portable Ultrasound Device

EchoNous was challenged to create a portable, tablet-based ultrasound device to give clinicians the ability to instantly perform ultrasound tests on patients and receive immediate results. In addition, the device needed to incorporate AI-based, deep-learning techniques to stay at the forefront of healthcare.

Challenges of creating a tablet-based ultrasound device included:

- Enable high-resolution ultrasound imaging capability
- Ensure high-fidelity digital auscultation and integrated ECG
- Meet the demand for high-power performance
- Empower AI-based, deep-learning techniques



Lantronix Open-Q Micro SOMs

Lantronix’s Open-Q™ μ SOMs are a series of powerful, ultra-compact (50mm x 25mm), production-ready SOMs that are ideal for product development, including artificial intelligence, advanced 3-D graphics, lifelike VR and AR experiences, advanced machine-learning technology and the ultimate in photography and videography. They are powered by the top-tier Qualcomm® processors.

<https://www.lantronix.com/products-class/open-q-soms/>



EchoNous AI-Powered Portable Ultrasound Device

SOLUTION:

Open-Q Micro SOM, Development Kit and Engineering Services

Working with the Vancouver-based Lantronix Engineering Services team, EchoNous was able to develop the Kosmos portable medical ultrasound device. Lantronix's Open-Q μ SOM and Development Kit provided the basis for the device's development while the Lantronix Engineering Services team provided high-level expertise on the Qualcomm Snapdragon CPU, on which the Lantronix solution is based.

“ The Lantronix Engineering Services team was integral to the successful development of Kosmos. They met all of the engineering challenges while reducing costs and significantly cutting the time to market. ”

– Niko Pagoulatos, Chief Technology Officer, EchoNous

RESULTS:

Creation of the First AI-Assisted, Tablet-Based Ultrasound Device

With the creation of Kosmos, Lantronix supported EchoNous in developing the first AI-assisted, tablet-based ultrasound device. Together, the team created a powerful handheld ultrasound device with synchronized ultrasound, digital auscultation, ECG testing and proprietary software that enables data to be sent from the ultrasound wand to the table.

With the power of a PC, Kosmos meets extremely high processing-power demands, providing up to eight hours of power for true portability. Its AI platform enables deep-learning techniques that enable it to evolve to solve everyday problems in healthcare.

Benefits include:

- Earlier target launch date
- High-level engineering support
- Low cost with high performance
- Affordable development tools and resources

About EchoNous

Founded in 2016, EchoNous develops industry-leading, intelligent point of care ultrasound (POCUS) tools that help medical professionals solve common everyday problems in healthcare. For more information, visit www.echonous.com

About Lantronix

Lantronix Inc. is a global provider of secure turnkey solutions for the Internet of Things (IoT) and Remote Environment Management (REM), offering Software as a Service (SaaS), connectivity services, engineering services and intelligent hardware. Lantronix enables its customers to accelerate time to market and increase operational up-time and efficiency by providing reliable, secure and connected Intelligent Edge IoT and Remote Management Gateway solutions.



Lantronix Development Kits

Lantronix's Open-Q™ μ SOM Development Kits are a cost-effective, high-performance, exposed board platform powered by the top-tier Qualcomm® processors on an ultra-small μ SOM form factor.

<https://www.lantronix.com/products-class/open-q-development-kits/>

Lantronix Engineering Services

Lantronix Engineering Services offers a full range of production-ready Edge AI computing solutions, including multi-disciplinary engineering services. Its experienced engineering team provides IoT product development that delivers unparalleled expertise and proven product development best practices to help its customers meet their technical goals and quickly get products to prototype and market.

<https://www.lantronix.com/professional-services/>

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