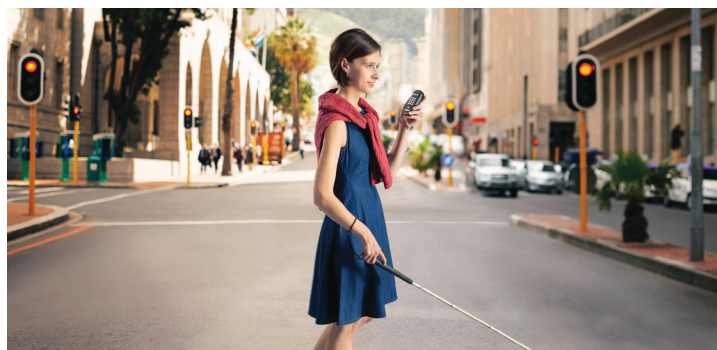# LANTRONIX ®

INDUSTRY:

Healthcare

Success Highlights:

- Contributed to the creation of a GPS and reader device
- Transitioned to open-source Linux® platform
- Improved power management for ultra-long battery life
- Provided an affordable solution to help contain development costs
- Supported the quick delivery of a market-ready prototype

Case Study Overview:

HumanWare is the global leader in assistive technology for people with vision loss. Offering a wide range of innovative products, HumanWare is focused on using technology to help people with vision loss to see, differently. To create its Victor Reader Trek GPS and reader device, HumanWare worked closely with Lantronix to utilize its Open-Q™ 410 System on Module technology to bring the device to market.

Improving the Lives of People With Vision Loss

Humanware's goal was to design the Victor Reader Trek to help people with vision loss better navigate the world around them by providing key information, including the nearest address, the cardinal direction they are traveling, the description of the next intersection and turn-by-turn directions to their destinations. To make the journey a pleasant one, the design team wanted to include a built-in Reader, giving users the joy of listening to books, music and podcasts.

> " The Lantronix team knew exactly how to customize the Open-Q 410 SOM to meet our highly specialized application. They helped us deliver on the concept and quickly get the product to market. "
>
> – Alain Bélanger, Project Director, HumanWare

Challenge: Create a Handheld Device to Help People With Vision Loss to See, Differently

HumanWare's design team chose the Lantronix Open-Q 410 System on Module (SOM), an ultra-small, production-ready module based on the powerful 410 Series APQ8016 quad-core processor from Qualcomm® Technologies Inc. HumanWare's team also chose Lantronix as it had the expertise to offer SOM customization services to make the device both functional and affordable for the Victor Reader Trek application.
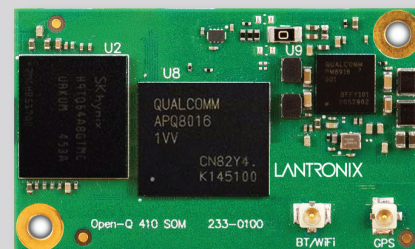
Product:
Lantronix Open-Q 410 SOM

The Lantronix Open-Q 410 SOM is an ultra-small, production-ready module based upon the powerful 410 Series APQ8016 quad-core processor from Qualcomm Technologies Inc. Its advanced technology and extensive range of supported peripherals provide the perfect platform for fast-tracking product development of low-cost, high-performance embedded and mobile devices.

Product Features

- Ultra-small form factor (44mm X 26.5mm)
- Quad-core 64-bit ARM® Cortex®, Adreno™ 306 GPU & Hexagon™ v5 DSP
- Linux®, Android™ 7 Nougat or Windows 10 IoT Core
- Bluetooth® and Wi-Fi® connectivity
- FCC/IC pre-certified

For more information: https://www.lantronix.com/products/open-q-410-som/

Challenges included creating a small, handheld device with the following features:

- An advanced, easy-to-use user interface
- GPS software and accelerometer sensors
- Built-in reader for books, music and podcasts
- Power management for ultra-long battery life

Solution: Lantronix Open-Q 410 SOM

The Victor Reader Trek gives people the ability to navigate their surroundings beyond the traditional visual-map-based "Point A to B" of a GPS device. It also serves as a reader device for books, music and podcasts.

Utilizing open-source Linux rather than Windows CE facilitates smoother integration and easier upgrades. Linux is also a more powerful, stable platform that provides a longer, usable life for the Trek device.

Benefits Include:

- Large capacity memory
- Fast boot time to allow quick start-up, usage and response
- Optimized power management for excellent battery life
- Linux open-source that offers software transparency for faster, easier development
- Lower development costs by leveraging a pre-existing computing solution in the Open-Q 410 SOM
- FCC/IC Pre-certified solution, allowing leverage of modular pre-certification to reduce product certification costs
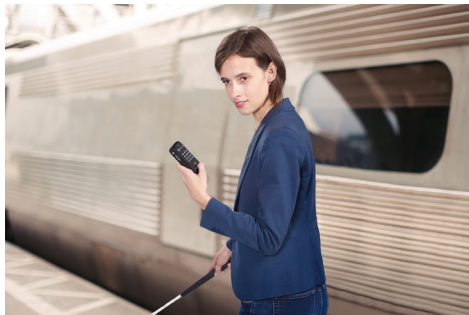
> **" Lantronix's partnership with Qualcomm gave us access to advanced technology through a single source, which helped reduce costs and improved our speed to market. "**
>
> – Alain Bélanger, Software Designer, HumanWare

Results: Quick and Affordable Delivery to Market

Utilizing Lantronix's Open-Q 410 SOM, the HumanWare design team was able to quickly and affordably create the Victor Reader Trek, a lightweight durable device with an intuitive user interface and an ultra-long battery life. Its intuitive user interface gives people with vision loss the ability to navigate their surroundings by utilizing the built-in GPS. Its built-in reader also enables users to listen to books, music and podcasts. Since users tend to keep HumanWare devices for years, being able to implement fast, easy upgrades is a significant advantage.

Lantronix Open-Q 410 SOM Development Kit

Lantronix's Open-Q 410 Embedded Development Kit is a versatile, easy-to-use exposed board platform that provides the ideal starting point for creating next-generation embedded and IoT devices. The platform consists of the Lantronix Open-Q 410 SOM, a carrier board exposing all the available IO and a range of accessories to fast-track product development.

About Lantronix

Lantronix Inc. is a global provider of software as a service (SaaS), engineering services and hardware for Edge Computing, the Internet of Things (IoT) and Remote Environment Management (REM). Lantronix's solutions are deployed inside millions of machines at data centers, offices and remote sites serving a wide range of industries, including energy, agriculture, medical, security, manufacturing, distribution, transportation, retail, financial, environmental, infrastructure and government.

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