![beacon EmbeddedWorks logo]

CASE STUDY

Compact & Reliable Military Tech

Summary

This customer came to Beacon EmbeddedWorks for a System on Module (SOM) that would meet the stringent requirements of their Ruggedized Handheld Computer (RHC) for military applications. Our team succeeded in delivering a compact and low power consumption SOM ideal for the handheld device. The success of the project laid the groundwork for an ongoing business relationship where our team will continue to provide cutting-edge embedded technology for the customer's latest and greatest devices for the aerospace & defense industry.

Challenge

The RHC would serve as a communications device for military applications, so security and regulatory compliance were essential. The device would receive, store, and transfer encrypted information enabling military personnel to load cryptographic keys to their communications devices ensuring secure transmissions. To promote easy adoption and usability, the device would be controlled by an LCD touchscreen and Linux-based Graphical User Interface (GUI). Because it would offer an intuitive operating interface, the RHC could be more efficiently deployed with minimal user training.

As a handheld device for military applications, the RHC would have to be compact and lightweight so that users won't be overburdened in the field. Military personnel are often required to carry a large quantity of gear and equipment, so it is essential that their RHCs don't add to the load. To achieve this, the embedded

Customer Profile

One of the world's leading experts on aerospace & defense engineering. With over 50 years of experience in their industry, they've become a trusted supplier to global governments. Their expertise ranges from reliable systems for aviation, to secure defense technology, and even cutting-edge spacecraft!

More Information

Why choose a Beacon EmbeddedWorks SOM?
See what differentiates our SOMs.
beaconembedded.com/system-on-modules/

About Beacon EmbeddedWorks
Beacon EmbeddedWorks is a full-service provider of innovative System on Modules (SOMs). Backed by a suite of customization, security, and support services, our dependable, pre-certified, and feature-dense embedded solutions serve the most strenuous applications.

systems utilized would have to be highly compact. Further, military devices for field personnel often remain in use for long product life cycles so it was essential to prioritize embedded products that would be viable for a prolonged period before obsolescence. Part of these efforts to achieve long product life meant ensuring not only backwards compatibility with existing RHCs and military communications technology, but also forwards compatibility with devices that would be released over the RHC's period of use in the field.

Among the greatest challenges posed by the project was the need for a device that would be highly ruggedized and ready to use in seconds. To deliver fast boot-up capabilities, the selected embedded technology would have to be specially designed for efficiency to quickly activate and begin performing critical device functions. As a rugged device for military use, it would have to ensure resistance to extreme temperatures, pressure fluctuations, moisture, and other environmental factors. These daunting product requirements, coupled with stringent regulatory requirements, necessitated a meticulous product development process that thoroughly considered all relevant specifications.

Solution

The customer selected our Beacon EmbeddedWorks Torpedo SOM because it fulfilled all of the RHC's unique requirements. Notably, the Torpedo SOM is among the smallest available on the market at just 27mm by 15mm, making it optimal for compact and handheld devices. In keeping with the adage 'good things come in small packages,' the Torpedo does not let its compact size compromise powerful processing, clocking at up to 1 GHz.

To sweeten the deal, all Beacon EmbeddedWorks SOMs come fully supported by our suite of software and BSPs to accelerate product development. Our Wattson™ Power Management tool helped to monitor power usage and ensure the long life necessary for battery powered devices in military applications. The device even ensured its fast boot-up capabilities thanks to the Torpedo's ability to power up in seconds.

As compact and powerful solution that delivered low-power and fast-boot capabilities, our SOM became a front runner for the customer in selecting their RHC's embedded system. To cement our SOMs' viability, Beacon EmbeddedWorks SOMs withstand industrial temperatures (-45 – 85°C). All Beacon EmbeddedWorks SOMs are supported for long product lifecycles, usually 10+ years, helping to assure the customer their product would be viable on the market for years to come.

Result

Using our Torpedo SOM the project was a complete success. Our SOM fulfilled the project requirements as a highly compact solution that delivered the reliability, low power consumption, and long product life to power critical military technology. The device's intuitive interface and backwards compatibility drove rapid user adoption in the field. Having proven that Beacon EmbeddedWorks technology is up to the challenge of accelerating development for critical military solutions, the customer continues to work with Beacon EmbeddedWorks to provide long-term support for their RHC in addition to new electronics development projects.

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