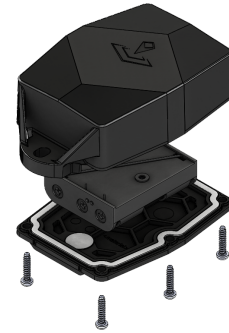


## wolfSSL Enables Sensolus to Easily Secure Communications Between Embedded Systems and the Cloud

Sensolus, a company built upon many years of expertise in low-power networks, wireless sensor design, cloud-based sensor management, analytics, and applications, provides internet-based tracking solutions for non-powered assets using a Low-Power Wide-Area Network (LPWAN). Sensolus's flagship product family, STICKNTRACK, offers new opportunities for improving efficiency, managing risk, and creating a real economy of things by allowing users to gather information and protect their assets through the STICKNTRACK platform. To ensure that firmware updates and communication between the STICKNTRACK device and the platform are secure, Sensolus makes use of wolfSSL's lightweight and embedded cryptography library, wolfCrypt.



The STICKNTRACK Ultra Device

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### Key Requirements

The STICKNTRACK products are extremely low power with the ability to operate for up to 5 years using only 3 AA batteries. However, in order to achieve this long-lasting functionality, the devices had to be limited in both CPU power and RAM. As a result, to attain a high level of network security, the resource constrained devices required the use of a lightweight but powerful cryptographic library that would work in the embedded environment and conservatively use the available resources.

Along with a small size and dependable efficiency, Sensolus was also looking for a library that contained well maintained versions of the newer ciphers as well as a dedicated support team capable of solving any issues concerned with integrating and using the library.

### Solution

Since the wolfSSL library has a small footprint size of 20-100kB, low runtime memory usage of 1-36kB, extensive documentation, and multiple different support packages, Sensolus decided that wolfSSL's

wolfCrypt library would be the most logical option for a seamless integration into the STICKNTRACK products.

*“wolfSSL's wolfCrypt library uses a high-quality and well-tested open source codebase that features the latest ciphers. It has allowed us to quickly implement the secure messaging and firmware upgrade procedures that we had designed while also helping us achieve our goals of speed and memory footprint on the lightweight devices”*

- Maxime Vincent, Sensolus Firmware Lead

Moreover, when compared with many other cryptography providers, the wolfCrypt library stands out with a FIPS 140-2 validation (Certificate #2425), a mandatory standard for the protection of sensitive data within federal systems. This validation will help Sensolus's goals of reaching a larger audience as they expand into the US and seek new clients. Also, since wolfSSL offers an open source and commercial license for the wolfCrypt library, Sensolus was able to test and prototype the software on their devices before making a decision to purchase anything.

## Results

Overall, using wolfSSL's wolfCrypt cryptography library, Sensolus was able to thoroughly enhance their network security by securing the communications between their STICKNTRACK device and the STICKNTRACK platform over a Low-Power Wide-Area Network. The key features responsible for this successful integration were the library's low memory usage, optimized speed, high portability, strong feature set, and a diligent support team. Together, wolfSSL and Sensolus were able to reach a solution and improve the security of the continually growing "connected" world by ensuring the safety of the clients that use the technology.

## For More Information

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### Solution Provided by:



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