Success Story

Striiv Wearables Integrate High-Efficiency Antennas Designed With AntSyn

Company Profile

Located in Redwood City, CA, Striiv develops portable fitness devices and mobile-enabled applications that help users be active and healthy. Striiv has developed a line of products that automatically monitors personal activity and sleep metrics simply by wearing the tracker. Users get a clear picture of their health with continuous and resting heart rate monitoring and are able to track sleep quality and activity levels throughout the day. Consumers can also stay connected through a full-featured smartwatch that receives alerts for caller ID, text messages, and all their favorite apps, without ever taking out their smartphone.

Figure 1: Striiv Fusion Bio Activity Tracker.

The Design Challenge

Striiv needed a new integrated, high-performance antenna that would provide better battery life and Bluetooth wireless performance for its next-generation Fusion 2 and Fusion Bio 2 wearable tracker devices. The challenges were that the antenna size had to be small enough to fit in the tiny device package and also had to be inexpensive to produce in quantity, both of which typically limit antenna performance. It was also important to complete the design quickly and get it into prototyping and production design without holding up the schedule, so the design process had to be reliable even though working with physics can be a very uncertain process.

striiv

Application:
Antenna
Software:
AntSyn
NI AWR Design Environment
Analyst
Microwave Office

"We chose NI AWR software because of the proven success of AntSyn and Analyst, as well as the support team's responsiveness to our requirements and tight schedule. The AntSyn antenna synthesis tool and the support expertise enabled us to shorten and simplify the design process and reduce risk, meeting our very aggressive development schedule. The resulting designs worked from the very start and removed the iteration and experimentation usually required in antenna design efforts. NI AWR software helped us to deliver a higher performing wireless wearable product in less time while also reducing design and manufacturing costs significantly when compared to prior similar efforts."

– Mark Ross
VP Engineering
Striiv
striiv.com

NATIONAL INSTRUMENTS

The Solution

The Striiv design team chose AntSyn™ antenna design, synthesis, and optimization software for the design of a high-efficiency, inexpensive Bluetooth antenna for these new devices. The initial designs were created in AntSyn in only a matter of days and the final synthesized design was complete in less than two weeks. The synthesized design was also imported into Analyst™ 3D finite-element method EM analysis software, along with the CAD model of the tracker components so in-situ performance could be simulated. The design was scaled and tuned to accommodate the packaging with a prototype ready to go in another week. Tests with the first prototype showed excellent performance and no further design cycles were required, enabling the Striiv team to meet its tight cost and schedule requirements without sacrificing performance. Using the AntSyn synthesized design approach enabled Striiv to receive initial models in just a matter of days, drastically cutting design time.

Why NI AWR Design Environment

The Striiv team chose AntSyn and Analyst as their design tools of choice due to NI AWR software's proven prior successes. Of significant note was the support team's responsiveness to design requirements, the tight schedule, and the need for quick turnaround. The AntSyn antenna synthesis tool and related support expertise allowed Striiv to shorten and simplify the design process and reduce risk, enabling the company to meet its very aggressive development schedule. Thanks to the software and its representative support personnel, the new Fusion Bio Activity Tracker is available commercially today.

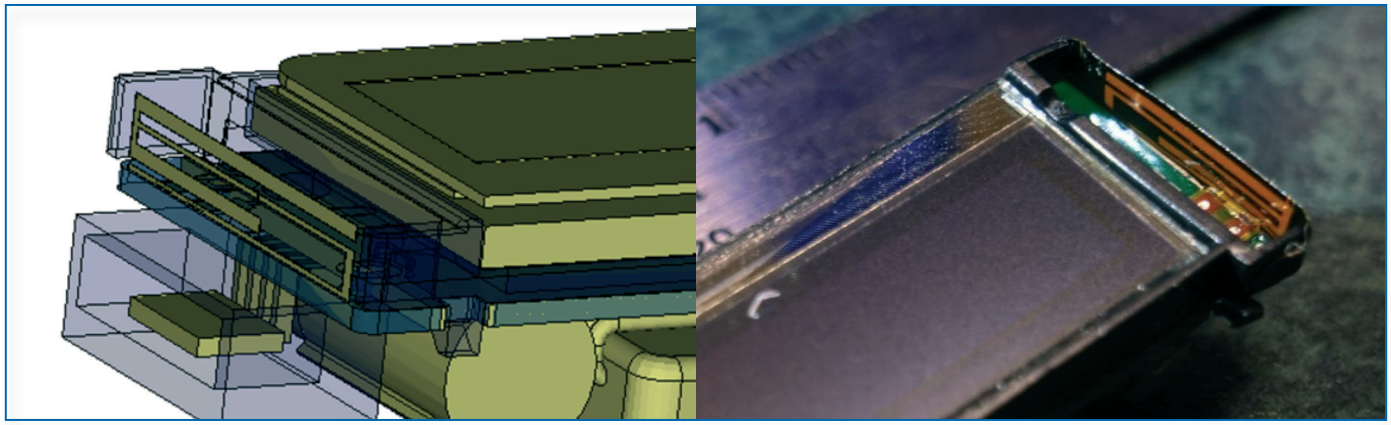

Figure 2: Antenna design as shown within NI AWR software (left) and final shipping product's integrated antenna (right).