



A Smoother, Sleeker Freedom

Continuous Glucose Monitoring Transmitter Upgrade

DexCom, the glucose sensor company, turned to Egret Technologies to provide design enhancements for its top-selling wireless transmitter. In 14 weeks, packaging changes reduced the transmitter physical size by 25%; new power-conserving functionality extended the transmitter's lifetime, and the assembly time was reduced also.

Situation: Continuous glucose monitoring (CGM), a promising new segment of diabetes care, provides diabetic patients in the home (or the hospital) glucose readings at any hour of the day without the need to perpetually use finger-stick testing strips and measurement meters. CGM systems include tiny 'in vivo (in the body) sensors connected to wireless transmitters that relay readings over the air to a compact receiver. Continuous glucose monitoring helps patients achieve tighter glycemic control ranges which can reduce hospitalizations and the long-term harmful consequences of diabetes.

For patients and suppliers, several features of CGM impact product success:

- Small sensors and transmitter (worn on the body) improve patient comfort, support usage compliance, and lead to greater market acceptance.
- Intelligent power management (battery performance) in the transmitter device enhances patient acceptance and extends product life.

- Flexible designs and proven manufacturability make CGM cost-effective for patients and profitable for suppliers.



DexCom, the leading CGM supplier, sought Egret Technologies' broad expertise in product development, design and manufacturing to repackage its top-selling transmitter. In just 14 weeks an innovative product upgrade was delivered on time, on budget, with many improved technical features.

Solution: With a significant investment in its existing CGM product design and production equipment, the requirement for FDA approval to any changes, and an aggressive schedule for a next-generation product launch consuming the client's team of engineers, the client needed the expertise of an engineering services provider who could work autonomously. Having recently delivered manufacturing test fixtures for the client, Egret Technologies understood the particulars of the current situation, product and customer needs, and quickly went to work on four critical areas:

- 25% Reduction in Transmitter Size – By repackaging the existing transmitter design, the size for the transmitter was reduced by 25%. This smaller profile solution leveraged the client's proprietary technology with improved patient comfort.
- Extension of Lifetime - By adding new power-conserving features, the CGM transmitting battery was conserved for maximum permanence.
- Seamless Supply Chain and Manufacturing Integration - By using Egret Technologies' in-depth knowledge of the client's CGM vendors and

manufacturing processes, the new design and documentation fit all current vendors' specifications and workflow without modification. This saved the client dollars in start-up, equipment and process engineering costs.

- Wireless Regulatory Compliance – Egret Technologies managed this product through approvals with FCC, ETSI, IEC 60601-1 and others.

“Turning Innovation into Profit” Results: All design goals were met, as were development schedules and cost targets for the product upgrade. By focusing its in-house engineering team on a new product development concurrent with Egret Technologies' product upgrade effort, the company also widened its competitive lead. Jake Leach, DexCom's Vice President of R&D commented, “With Egret Technologies also working on this project we improved our product development results. They delivered major upgrades to our CGM transmitter on time, on budget, while we kept our next-generation developments on track.”

Egret Technologies is a superior electronic design partner to global vendors of technology products. We are an innovative, solution-driven, US-based engineering design firm specializing in optical, electronic, and mechanical hardware, as well as embedded software systems. We provide concept development, product design and project engineering. Contact Egret Technologies at (954) 518-9645 or Innovate@EgretTechnologies.com