



Great Throughput, Less Waste

Multi-Potentiostat

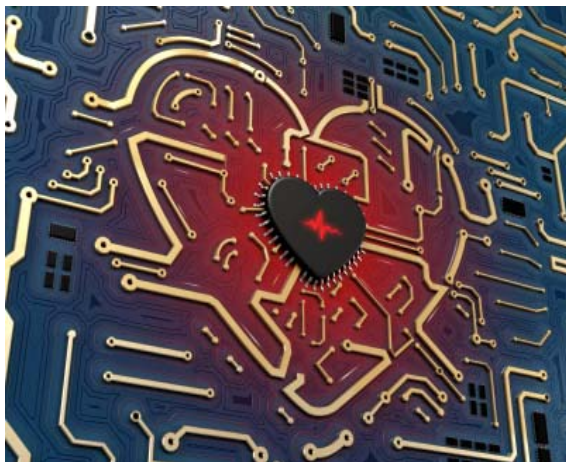
Manufacturing Test Fixture for Electronic Glucose Sensors

The medical equipment industry requires precise standards. DexCom, the market leader in continuous glucose monitoring (CGM) products, retained Egret Technologies to increase accuracy and throughput in its manufacturing test equipment. Sensor manufacturing improved greatly and DexCom achieved record gains.

Situation: DexCom, the CGM market leader, believed that it could improve the testing accuracy and throughput for its highly-sensitive electronic glucose sensor. An internal team had prototyped a replacement test fixture, but rapid changes in technology had quickly limited its value. To improve on an existing slow, single-sensor manufacturing test process, DexCom approached Egret Technologies to redesign the fixture so they could reliably test multiple sensors at a time.

Working closely with operations management over seven months, Egret Technologies surfaced and resolved issues about the testing fixture's electrical and mechanical design to improve measurement accuracy of the sensor test (e.g. fewer false negatives), boost manufacturing productivity, and reduce cost.

Solution: DexCom had established rigorous engineering targets for this critical redesign. Egret Technologies exceeded all of them.



- Instead of using the conventional single-unit test design, a new multi-unit test fixture was introduced for faster manufacturing test throughput.
- The original scheme required expensive custom cable-harnesses. The introduction of a mezzanine PCB sensor interface gave a more reliable approach, saved \$1000 per fixture and increased yield.
- The test fixture response time was reduced from a target of 5 seconds to just 1.5 seconds, reducing the total test cycle time

by >300% to improve manufacturing productivity.

- By introducing components that could auto-calibrate, the labor cost and time to manually calibrate the test fixture was eliminated.
- The response for the circuit was specified to have no more than 1.5% variation and the new design achieved significantly better at 0.0002%.

“Turning Innovation into Profit” Results:

DexCom experienced such impressive gains from the new test fixture implementation that it was also adopted in the testing of different glucose sensors within the company. Jorge Valdes, Senior Vice-President of Operations, said, “I would definitely use Egret Technologies again. They were transparent about surfacing issues, gave us accurate estimates, and delivered excellent quality. The combination of their electrical and mechanical design ability is significant.”

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