

CPRmeter 2

Laerdal



Sagentia Innovation worked with Laerdal to update their successful CPRmeter product.

Expertise and domain knowledge

- Bluetooth low energy interfaces
- Design for manufacture
- ISO 13485
- Medical device development
- Regulatory approval
- Electronics
- Software
- Mechanical engineering
- Injection molding



Our client asked:

Laerdal needed to update their CPRmeter product to reduce cost, improve manufacturability, enhance functionality and improve ergonomics.

Sagentia Innovation had the expertise in Bluetooth low energy (BTLE) interfaces, low cost, low power electronics design, and design for manufacture. Additionally, we could provide a full ISO13485 medical device development capability to ensure regulatory approval.

The project story:

Sagentia Innovation worked with Laerdal to update their successful CPRmeter product. This is used by first responders to cardiac arrest to optimize their CPR technique by providing real-time feedback on essential parameters of cardio pulmonary resuscitation. The meter uses accelerometer and force sensors to measure depth, rate and release of CPR.

Challenges included maintaining a long battery life with smaller batteries, improved ergonomics and lower profile design, easier and lower cost manufacture, updated electronics and larger display with the addition of a Bluetooth interface, all whilst maintaining the robustness, accuracy and Ingress Protection rating of the original design.

The development was carried out under full medical product development procedures which enabled worldwide regulatory and EMC approvals for the CPRmeter 2.

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Results: deliverables and outcomes

- 40+% reduction in BOM cost
- 50% reduction in assembly time
- BTLE interface to smartphones/tablets for real-time data readout, replay/analysis of stored data, re-programming in the field
- New, up to date, lower cost and energy efficient display and electronics
- Smaller, lower profile, easy to clean, IP55 rated ultrasonically welded casework, improved ergonomics
- Now uses two low cost, easily replaceable AAA batteries
- Retains the robustness of original force loadcell