

Cable-Free Synthesized ECG



Client

HeartBeam

Practice Areas

Smart Medical Devices

Core Disciplines

Software Engineering

AI & Advanced Algorithms

Mechanical Engineering

Systems Engineering

Electrical Engineering

Industrial Design

Challenge

HeartBeam needed to develop a personal, cable-free cardiac monitoring device – credit card-sized, easy to use, and capable of synthesizing a clinically meaningful 12-lead ECG – while meeting regulatory requirements and supporting an accelerated, five-phase development timeline.

Solution

Triple Ring applied expertise in wearable medical device design and system integration to execute a comprehensive development program spanning early R&D, industrial design, product development, manufacturing readiness, and regulatory preparation. The team developed device builds for design verification and validation, packaging, and manufacturing transfer to support scalable production – all while maintaining 510(k) readiness throughout.

Client Impact

- Delivered a cable-free, credit card-sized ECG device that patients can use at home
- Integrated smartphone communication and cloud-based data delivery to physicians in real time
- Achieved successful 510(k) submission and FDA regulatory clearance in 2024
- Enabled a new model of telehealth-driven cardiac diagnostics outside traditional clinical settings

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