

## Case Study

# BLOOD PRESSURE MONITORING DEVICE

### Executive Summary

The customer is a leading global consumer products company that provides innovative products and solutions through a diverse portfolio of well-recognized and trusted brands. As a brand incubator, they acquire, and nurture established brands. In 2006, they acquired a renowned maker of home and personal care appliances, known for products such as electric shavers, thermometers, and various kitchen appliances.

The customer faced challenges in developing a blood pressure monitoring device, including high reliance on Chinese white-label manufacturers, finding alternative suppliers who meet quality standards, and attaining full ownership of product quality and customization, with the goal of gaining greater control and assurance in their development process.

eInfochips delivered end-to-end product development for the blood pressure monitoring device, including hardware design, firmware development, connected mobile app, feasibility study and clinical trials. The product features one-button operation, a clear display, and automatic data storage, providing proprietary technology for a competitive edge and long-term cost savings to the customer.



### Client

The customer is a leading global consumer products company that provides innovative products and solutions through a diverse portfolio of well-recognized and trusted brands. As a brand incubator, they acquire, and nurture established brands. In 2006, they acquired a renowned maker of home and personal care appliances, known for products such as electric shavers, thermometers, and various kitchen appliances.



### Challenge

The customer faced challenges in developing a blood pressure monitoring device, including reducing reliance on Chinese white-label manufacturers, finding alternative suppliers meeting quality standards, and attaining full ownership of product quality and customization, aiming for greater control and assurance in their development process.



## Solution

eInfochips provided comprehensive product development support for a blood pressure monitoring device, including hardware design, firmware development, a connected mobile application, feasibility analysis, and clinical trials. The product features streamlined one-button operation, a user-friendly display, and automated data storage, incorporating proprietary technology to give the client a competitive advantage and ensure enduring cost efficiencies.



## Key Highlights:

### Hardware and Firmware:

- Efficient TI MSP430G3507 MCU
- Cost-optimized, high-accuracy components (LCD, pressure sensor)
- Oscillometric blood pressure measurement algorithm

### Mobile App (Android/iOS):

- Secure data storage, sync, and encryption
- User-friendly UI/UX with contextual menus

### Clinical Validation:

- Rigorous accuracy testing against benchmarks
- Real-world data-driven algorithm refinement with medical insights

### Clinical Trial Management:

- Comprehensive study design, participant recruitment, and data collection
- Project oversight with financial management and reporting

### Data Logger Tool (Python):

- Ensures adherence to clinical trial protocol and simplifies data collection

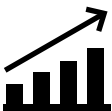


## Tools & Technologies

- Android: Kotlin, Android Studio
- iOS :Swift, Xcode, KMM (Kotlin Multiplatform Mobile) for common database related operations

## Regulatory Compliance

ISO 13485, ISO 14971, IEC 62304, and EU MDR standards



## Benefits

- Improving measurement accuracy by 30%
- Distinct competitive advantage by showcasing proprietary technology
- Long-term cost savings by eliminating reliance on third-party manufacturing agreements
- Opens revenue streams through premium features /subscription models and new market penetration

## About eInfochips

eInfochips is a Product and Semiconductor Engineering Solutions company recognized for technology leadership by Gartner, Frost & Sullivan, NASSCOM and Zinnov. eInfochips has contributed to 500+ products for top global companies, with more than 10 million deployments across the world.

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