

MedTech

A med-tech company producing wearable devices and behavioural therapy software for clinical sleep-disorder management.



PROJECT

Handheld and bedside insomnia devices

TECHNOLOGICAL BASELINE

Insomnia treatments traditionally relied on medication, CBT-I and lab-based polysomnography, which were effective but not always accessible or scalable.

Consumer sleep wearables could passively track movement and basic vitals, but offered retrospective reports only and lacked clinical-grade accuracy or real-time therapeutic intervention.

TECHNOLOGICAL UNCERTAINTY

The company set out to move from early prototypes to regulatory-tested, trial-ready handheld and bedside devices that combined multi-sensor capture with active interventions and robust wireless links.

Key uncertainties included whether Bluetooth in the handheld could meet regulatory multi-band requirements while maintaining stable, low-latency data transfer, whether long-term device stability could be achieved for clinical use, and whether a 100-unit pilot build could be manufactured with consistent performance for NHS trials.

TECHNOLOGICAL ADVANCE

- The team iteratively redesigned hardware and firmware, trialling a shielded antenna approach and then implementing a software-driven frequency management strategy to satisfy regulatory Bluetooth demands while preserving reliable communication with the bedside hub.
- Extended soak testing with embedded diagnostics was used to identify and resolve crashes, memory issues and process conflicts, improving long-duration stability.
- For manufacturing, the company introduced calibrated, end-of-line test routines and traceability for a 100-device pilot run, while incrementally hardening the design for EMC, RF and ESD compliance and enhancing the software platform for clinician-led NHS trial workflows.

About ABGi

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