



High-Quality Direction-Finder

Antenna And Electronics Design

► “The Loc8tor Lite handset design is a testament to careful product and electronics design, a deep understanding of antenna design and simulation, and designing hardware and software for low-cost and high performance.”

Steve Braithwaite,
Consultant, Captec Ltd

The customer required the design of a credit-card sized handset that gives direction and distance guidance when finding a lost object, while also requiring a low-power design for long life.



Requirements & Issues

- ▼ Credit-card size handset, designed for consumer convenience
- ▼ Thin design, but with enough room to house a directional antenna
- ▼ Long range to locate lost items
- ▼ Good directionality (7dBi) to improve and extend the range of the wireless receiver
- ▼ Designed with an easy to use functionality

The Solution

- Thin design required miniaturisation of a directional antenna, so Captec developed a short, high-gain antenna for the device
- Low-power techniques using small battery design to increase longevity
- Selection of the best transceiver ICs available to enable a high level of integration
- Proprietary protocol and pairing methods for encrypted communications



The Outcome

- A design that has been put into volume production
- Spin-out products themed for pet location
- New design of tag for a more common battery type
- Excellent customer reviews for finding pets and crashed model aircrafts, rockets and drones



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