



Design that delivers rapid solutions

TSSI Optiguard

The need for speed

TSSI is the UK's only specialist manufacturer of magnetic stripe solutions for plastic cards and tickets. When the company wanted to develop a scanner for reading bar codes, they had a problem. When they approached Crucible, the critical meeting with sales teams and potential customers was only a few weeks away, and the technical department only had some components and a draft design brief. They asked us to help design the product and get a demonstration batch made in just four weeks.

Very rapid development

We got the detailed design brief within a couple of days of the initial enquiry, and had produced concept designs by the end of the same week. Given the timescale, we offered a compact range of design options, and TSSI opted for a two-part housing with a rubber moulded tip that located the scanner head. Several ergonomic tests were conducted to maximise ease of use and scanning angle, and the housing was also balanced to make it as comfortable as possible to use. The scanner was fitted with an operating button on the top surface and a status LED sandwiched between the two halves of the casing.

Design and prototyping

Within ten days, we had a finished design in Solidworks and quotes for functional prototype parts that were used to carry out detailed tests and finalise the design. Despite the very tight timescale, the prototype was





subjected to very detailed ergonomic tests to ensure balance, comfort and accuracy of scanning. We also developed an optional guide (see image, below) to help keep the scanning angle perpendicular to the surface of the magnetic strip.

Batch manufacture within a month

The most interesting challenge offered by the project was the need to attend an exhibition where a convincing batch of scanners could be presented as finished products, looking great and working perfectly.

Crucible works with a range of modelmakers and rapid prototyping companies, and this project tested our best supplier's abilities and delivery times, almost to destruction!

A batch of forty products were vacuum cast, finished and assembled in time for the event and TSSI were able to get to market with a barcode scanner several months ahead of their competition.



As Philip Carpenter, the Project Manager at TSSI commented:

"We needed to build a batch of demonstration products quickly, and Crucible did not disappoint.

We have been extremely pleased with the speed of the work and the quality of the finished design".

About Crucible Design

Mike Ayre established Crucible Design Ltd in 1990. Crucible works across all areas of product design and development, with an emphasis on meeting specific client needs, including sales improvement, cost reduction, technical innovation and the sourcing of manufacturing partners.

This focus on the commercial benefits of good design has generated an excellent track record of successful projects and the practice has also won a number of design awards for appearance, innovation and technical expertise.

