



Switching on to Rapid Injection Moulding

TVonics Ltd.

The much anticipated 'switch off' of the analogue TV signal is already underway, and TVonics Ltd has been busy developing and supplying its digital set-top box featuring parts produced by rapid plastic injection moulding specialist, Protomold®.

The Government has started to provide free set-top boxes to the disabled and partially-sighted as well as less well-off and the elderly population. The digital TV switchover started in Cumbria in October. The Government faced opposition to its plans to switch off analogue broadcasts from interest groups which said the cost of a digital TV receiver would be an unfair burden on lower income groups and in particular the elderly and disabled who rely on TV. The £600m assistance scheme was announced last December, the Government is subsidising the total cost of "the necessary equipment to convert one television set to digital" for disabled and partially-sighted users as well as people over 75 years of age who are on some form of income-related benefit.

Technology developed by TVonics has provided the first products into the government switch off scheme. Whitehaven in Cumbria was the first area to experience the digital switchover, with the first 20,000 of homes already unable to receive analogue signals.

Protomold was our best option to deliver a fast time to market experience for our customers. Traditional steel tooling would have been too slow to meet the stringent delivery schedule dictated by the broadcasters engineering program.

A range of new features needed to be added to an existing product very quickly. The rapid development and tooling from Protomold was essential. "The design features were agreed at discussion group meetings with our client, electrical retailer, Dixons," explains Martin Laforges, product design manager at TVonics Ltd.

The main feature of the new 'box' is simplicity, with the incorporation of the latest generation automatic tuning technology, straightforward on-screen graphics that allows users to easily select the chosen television or radio programmes and built-in guides to assist the

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viewer at every step of the way. If the user isn't sure what to do, they can press 'Help' to find out the meaning of each option and which button to press.



Once the design for the set-top box had been finalised, TVonics knew exactly who to call to help get the product into production. Some 18 months earlier the company had used Telford based Protomold, a specialist in producing rapid plastic injection moulded parts, to make the casing for new a digital video recorder.

"We submitted the initial design to Protomold via the online ProtoQuote® system, which highlighted potential

manufacturing difficulties such as the need to minimise undercuts, the proper use of draft and reinforcing fillets, and part ejection consideration. The system also provided us with tooling and part costs, allowing us to plan and manage our project accurately.

ProtoQuote is a summary of potential problems with the part, explained in a clear, simple and non-technical way, incorporating suggested changes and, if necessary, re-designs. One of the main benefits of the ProtoQuote system is that it simplifies and demystifies injection moulding for everyone involved in the

product development project and takes a lot of the guesswork out of the process.

"Protomold supplied around 30,000 pieces over a nine-month period before we moved to hard tooling," says Martin. "For many of our projects it is difficult to get a feel for volume until the product has proven itself. To this end a commitment to hard tooling at an early stage is not possible as the costs are prohibitive, to say nothing of the lengthy lead-time. Many people think using a company like Protomold is only cost effective for small runs, and while its true that the cost saving varies with the number of parts being produced, rapid injection moulding can also have a substantial cost advantage in runs of thousands of parts. Furthermore, the Protomold process cut the time from quote to first part by about six weeks, in comparison

with opting for hard tooling from the outset."

The early success of the digital recorder project meant that there was no need to look beyond Protomold for the next project, the set-top decoder, for which the initial volume of 6000 pieces has now been successfully supplied.



Formed in late 2004, TVonics has over 20 employees and is perceived to be one of the most exciting UK Consumer brands to have emerged over the last decade. The company collectively has over 100 man-years of experience in the design and manufacture of digital set top boxes and televisions.

The company is founded on some core consumer brand values, providing their customer with a fast time to market experience is essential. The company's already impressive client list includes high street names such as the Dixons Group, Virgin Media, Aldi, Tesco, Comet, Argos, John Lewis and Marks & Spencer.

"The Protomold service has been fantastic - allowing us to make initial volumes of plastic parts and get the product to the customers fast," states Mr Laforges. "The support along the way has also been first class. At various points we have introduced modifications, but these have been incorporated quickly and the modified moulds have been back in the injection moulding machines within an hour."