GX

PIONEERING PRINTERS

HOW A GROUNDBREAKING PRINTER REDESIGN DEVELOPED INTO A FLAGSHIP RANGE USED BY ORGANISATIONS WORLDWIDE.

THE CHALLENGE

In the early 2000s, defence and security specialist Ultra Electronics approached GX with an ID card printer that was in need of value engineering to significantly reduce manufacturing costs and develop a commercially successful product that could take their Magicard division into the global top three.

THE APPROACH

Noting that the existing printer was built around a metal chassis with many component parts, GX originated an H frame chassis constructed from a single piece of plastic to significantly reduce the component cost and assembly time of the printer in order to reduce the market entry price.

THE CHALLENGE

The pioneering H frame design has been the core of every Magicard ID card printer to this day. Following the redesign and several generations of printer, Enduro won the Queen's Award for Innovation and GX went on to design further printers in the range.

OPERA

3D CAD and additive technologies were still in their infancy in the early 2000s when Ultra Electronics came to GX with their initial challenge: the Opera printer. Realising that the current printer was built around a multi-component metal chassis, GX's design director Gary Ross came up with the H frame – a chassis made from a single piece of injection moulded plastic and extensive use of clips instead of fixing screws.

The implications of this construction were an enormous reduction in production time and cost, so it was a value engineering avenue worth pursuing. To demonstrate the design would work, the product development team at GX built a rapid prototype model using selective laser sintering (SLS) as a durable first-draft model.

GX's pioneering H frame design brought the initial build time of the printer down to just 40 minutes. The entire process – from inception to production – took just nine months. With the H frame design a proven success, Ultra Electronics contracted GX to design further products in the range, from Alto onwards.

TANGO +L

With the Tango +L, GX built on an existing Magicard model to provide even more functionality for the end user. In a cost-effective manufacturing solution, the team integrated a thermal laminator to eliminate the need for a separate machine. This product has been particularly popular with UK police forces.

ENDURO

The Enduro was the result of a bold design move from GX, introducing exciting and memorable styling to add to the appeal of the product. Retaining the H frame concept and essential commercial features, including the ability to print a security watermark, the product was designed with a curvaceous form, new colours and finishes. This made it a marketable asset to smart corporate environments.

PRONTO

Created to fill a gap in the market, the Pronto is a compact, lightweight unit that's designed to be portable and offer a straightforward user experience. After the move back to UK production from China, it was vital this model was constructed with a minimal number of components to be manufactured profitably in the UK. As a result, it's an attractive, low-cost, easy-to-use colour ID printer for small business use.

RIO PRO

The final iteration in GX's Magicard range, the Rio Pro is a top-of-the-range ID card product with superior print quality in colour and edge-to-edge capability. As this model was intended as the flagship Magicard printer, the design team at GX went with visual styling that would stand out in the market. Added value came in the form of upgrades including double-sided printing and a lockable hopper to secure card stock. As its predecessors before it, GX designed the Rio Pro to be quick to assemble and cost-effective to produce.

As a result of the commercial success of the H frame printer range, Ultra Electronics divested the ID side of the business in 2016, which began operating exclusively as Magicard. It remains a global leader in card printing technologies to this day.

TECHNICAL DATA

RAPID PROTOTYPING

Prototypes developed using a variety of rapid prototyping techniques and materials

INDUSTRIAL DESIGN

GX was responsible for the industrial design of all the ID printers.

VALUE ENGINEERING

New H frame concept dramatically reduced the number of internal components and build time.

Shifted material use from metal to plastic.

Extensive use of integral clips.

MECHANICAL ENGINEERING

GX undertook the detailed mechanical design and engineering of all the printers.

OUR SERVICES

- ELECTRONICS
- VALUE ENGINEERING
- SOFTWARE DESIGN
- REGULATORY SUPPORT
- RAPID PROTOTYPING
- OPTRONICS
- MECHANICAL ENGINEERING
- INDUSTRIAL DESIGN

GX

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