



“Now our customers can make instant decisions about the ergonomics of a product – about the touch and feel – as well as test how it fits into its environment.” – Tamar Fleisher / Synergy



CASE STUDY

Reinventing Invention

SYNERGY'S CLIENTS MAKE CONFIDENT DECISIONS WITH ULTRA-REALISTIC PROTOTYPES

To create our favorite products, a team of designers, engineers and marketers go through countless design iterations, striving to build something consumers will covet, identify with and use daily. From the light switch to the mobile phone, every desirable product results from inspiration, hard work and collaboration.

The team at Synergy, a product development company in Netanya, Israel, lives and breathes this cycle of innovation. Clients rely on Synergy to transform bright ideas into viably manufacturable, marketable products. Industrial designers and engineers often work around the clock to perfect the grip on a medical device or the appearance of a phone charger.

“The first time the entrepreneur sees his idea and feels it in his hands, is a crucial moment. We need to give him the most realistic prototype possible,” said CEO Michael Librus. Dream designs can be rendered onscreen quickly, but functional prototypes can take weeks of investment in labor and outsourcing – especially when products have complex designs and diverse materials.

Design ideas are embraced, refined or abandoned based on the look and feel of a prototype. To hasten and sharpen that crucial decision-making, Synergy brought a Stratasys J750™ 3D Printer in-house. It produces whole-product prototypes in full color, even with multiple materials, textures and gradients, in as little as a few hours.

So when Synergy redesigned a keypad for an emergency-response system used in the after-market automotive industry, the Stratasys J750 played a key role. The project meant producing multiple designs for the panel, which mounts above the rear-view mirror, to test which would best fit the car’s interior and pass ergonomic and mechanical testing. Each iteration included soft-touch buttons, backlighting, graphics, housing and internal connections to the electronic panel.

Before the Stratasys J750, Prototyping Manager Omer Gassner would have tapped several vendors to create a single keypad panel prototype: CNC machining and water printing for the body, casting for the light pipes, sanding for smoothness and then silicone engraving and additional printing for the buttons. It would have taken ten days to two weeks to create, at a cost of \$700 per unit. With the Stratasys J750 it took just hours and cost \$200 per unit.

Tamar Fleisher, Synergy art director, said clients appreciate the realism and responsiveness that the technology adds to product development. “Now our customers can make instant decisions about the ergonomics of a product – about the touch and feel – as well as test how it fits into its environment,” Fleisher said. “The ability to simulate light transfer on the panel meant my client could decide about every detail of the design. And if a design change was needed I could go to my computer, make the design change and print it in a matter of hours.”

For CEO Librus, photorealistic prototypes empower him to better fulfill the dreams of innovation that bring customers to Synergy. “I’m just glad that we have the J750 in-house,” Librus said. “We wouldn’t do it any other way.”



This mobile phone charger sleeve was prototyped with many image options.



This articulated hernia mesh fixation device prototype was 3D printed complete with logo.



Model of keypad panel in Photoshop, with texture applied.



Omer Gassner builds diverse multi-material parts in a single job.

HOW DOES THE STRATASYS J750 COMPARE WITH TRADITIONAL METHODS TO PROTOTYPE THE KEYPAD PANEL?

	COST	LEAD TIME
CNC machining plus post-processing	\$700	Up to 2 weeks
Stratasys J750	\$200	1 day
Savings	\$500 71%	9 business days 90%

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