

Consumer Goods Prototyping

With PolyJet Technology



Exploring Creative Prototyping in Consumer Goods

Prototyping for consumer goods often involves a balance between producing multiple design iterations in a short amount of time, yet achieving a high level of realism for each piece. This process has typically limited designers, making multiple iterations expensive and time consuming. Now, with technology like the Stratasys® PolyJet 3D printers, designers don't have to choose between creating many prototypes and creating accurate ones.

With the Stratasys J Series: J55, J826, J835 and J850, a part requiring multiple material types can be finished in one print. And the numerous material

options available for PolyJet™ — from flexible to rigid, opaque to transparent — make realistic-feeling prototypes even easier to achieve.

Multiple print heads also improve color realism. With traditional prototyping, options for coloring are limited to laborious processes like hand-painting. The J Series makes it simple to print multiple models in multiple colors in just one step. Additionally, the J Series is PANTONE Validated™, so designers can select the exact colors desired for their piece.



The Challenge

To begin, Shuvom Ghose, Stratasys Software, Go-To-Market Team, put himself “in the shoes of a small, fast-moving Industrial Design team trying to iterate and pitch a new product.” The main priorities for a project like this would be to create a presentable product within a short timeline. But starting from scratch often means trial and error, so for this endeavor, it was important to be able to visualize many designs in a short period of time. The J Series was ideal for Shuvom’s project due to its multimaterial capabilities.

The Right Feel

After Shuvom created a general shape for his model, he wanted to enhance the tactile realism. For a game controller, this meant materials of differing shore values built into one piece. Shuvom explained that material choice “makes a huge difference to the realism of your model, especially if you’re prototyping high-end consumer goods that have to feel expensive.”

With the J850, it only took a single five-hour print to produce a multimaterial controller prototype, with rigid VeroWhite™ for the body and rubber-like Agilus30™ for the buttons. (Figure 1)

The Right Look

But the design wasn’t complete without color. As he tested different versions of his prototype, Shuvom created a dozen different colored models in just two days. (Figure 2)

Using modular designs made it easy to test different colors and patterns, and because of the multimaterial capabilities, Shuvom could print several designs in different colors at once, which expedited the prototyping process. In fact, he was able to test so many different designs that Shuvom says he started running out of ideas.

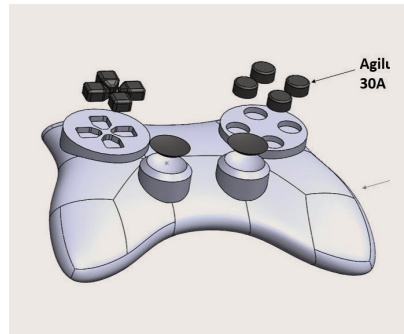


Figure 1: With the J Series, it only took a single five-hour print to produce a multimaterial controller prototype, with rigid VeroWhite™ for the body and rubberlike Agilus30™ for the buttons.



Figure 2: Shuvom created a dozen different colored models in just two days.



The Result

Shuvom created more than 10 different iterations of his game controller, with variations in color, texture, and modular design, in just one week.

He was able to quickly weed out designs that didn't work and make adjustments where needed, helping him arrive at his final version: a hard, transparent body with rubber-like buttons and a fully-customized, multicolor shell.

The final controller prototype uses both Vero™ and Agilus30, which bond together during printing without needing an adhesive.



The Future of Realistic Prototyping

Unlike traditional methods of creating realistic models, parts created with the J Series require almost no final touchups or finishing steps like sanding or assembly. And because the printer can run around the clock without supervision, the need for active labor is drastically reduced.

The J850 allows designers to prototype with a single operation — parts with multiple materials or colors only need one fabrication step instead of several, speeding up the production process.

This technology makes it economically feasible to create many design iterations before pitching the final product. For designers hoping to see their ideas approved and expanded, this is invaluable.



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