

GE Helps Meizu Design Ultra-Stylish MP3 Player for the Fast-Paced Consumer Electronics Industry

Replacing Paint for Consistent Quality and Superb Color

As one of China's leading manufacturers of MP3 digital music players, Meizu Electronic Technology Company, Ltd., is known for sophisticated designs, excellent sound quality, and overall high standards. Based in Zhuhai, Guangdong Province, Meizu exports its players to Southeast Asia, the United States, Canada, and Europe, where they are sold through distributors.



GE Plastics and Meizu Electronic Technology Co., Ltd.

The Challenge: Achieving Unique Color Effects for New MP3 Players

In the MP3 market, whose consumers tend to be young, style-conscious, and fickle, success depends upon continually introducing fresh designs incorporating the latest technologies and features – and, of course, great aesthetics. When Meizu began conceptualizing its latest MP3 series, the X6 line, the company decided to try something new. Instead of the metallic silver color used in many of its other players, Meizu wanted to create a dramatic, deep-black front panel to set off the bright yellow and blue of the OLED (organic light-emitting diode) screen and the high-gloss, chromium-plated aluminum body. The company began creating prototypes using its customary process – painting a molded polycarbonate/acrylonitrile butadiene styrene (PC/ABS) part.

However, achieving the desired black color using paint proved frustratingly difficult for Meizu. Not only did the painted part lack color depth and vibrancy, but quality issues also arose. Applying the paint consistently was a constant struggle, leading to uneven quality and a high rejection rate.

Said Zhang Huang, Meizu's General Manager, "With the design of this new product line stalled, Meizu needed a fresh approach that would provide exceptional color, processing ease, and consistently high quality."

The Solution: GE's "Raven" Visualfx* Resin for the Drama of Piano-Key Black

Meizu turned to GE Application Development Specialist Tommy Liu and the GE team for inspiration and expertise. Liu proposed replacing the painted PC/ABS resin with GE's Visualfx* resins, which are formulated with special colors and effects inherent in the material. Specifically, GE's "Black & White" concepts appealed to Meizu as a hot fashion trend, based on GE's extensive aesthetic research and surveys in China.

Visualfx resins not only eliminate the need for secondary painting operations, but also provide unique visual effects that cannot be achieved using traditional processes. "GE's Visualfx resins help manufacturers succeed by giving them the special hues, textures, and effects that make a product stand out from the pack," said Liu. "For the Meizu X6 series, we recommended Raven from the Black and White portfolio. Raven, which is based on GE's Lexan* PC resin, is a true piano-key black offering richness, gloss, and the depth of lacquer."

The Value-Added Services: GE Customer Innovation Center, Shanghai

GE worked closely with Meizu over a three-month period to take the X6 color concept to completion. Once the manufacturer had decided on the Raven resin effect, experts at GE's Customer Innovation Center in Shanghai began the process of fine-tuning the exact level of gloss, texture, and color intensity to meet Meizu's requirements. Raven Visualfx resin begins with a transparent base with just enough added pigment to achieve opacity.

The Customer Innovation Center team provided color-matching services using GE's state-of-the-art equipment, and samples of the Raven material for prototyping. Some of the center's special capabilities include:

- Special lighting designed to allow accurate evaluation of color chips as they would look outdoors, under fluorescent bulbs, or with incandescent illumination.
- A production facility that can extrude custom color pellets for injection molding machines. With a customer-supplied tool, sample parts can be shot in the molding machines for evaluation of the selected color.
- Technical consultants including a product development specialist, a color technologist, a manufacturing coordinator, an application development engineer, and several color-matchers.



Visualfx resin / Meizu Electronic Technology Co., LTD. Case Study

The Molding Process: No Retooling Required

The high-gloss panel for the X6 MP3 player is molded by V.S. Industry Company, Ltd., of Zhuhai, an integrated manufacturer engaged in mold design and fabrication that specializes in plastic molded products and assembly of electronic products. The company injection molds the Meizu components. One of the benefits of using GE's Visualfx resin was that no re-tooling was required for this application, even with a change from PC/ABS to Lexan PC resin. Another advantage is increased flow for faster cycle times. Finally, the GE resin enabled the use of thinner walls for the panel design, allowing Meizu to create a smaller player.

Wing Fu, a GE Processing Development Engineer, provided expertise to V.S. Industry, including a molding trial, mold tool review, and technical support.

The Benefits: High Quality, Unique Design, and Cost/Time Savings

GE's technology, expertise, and local design facilities helped Meizu produce a new MP3 player that stands out from the competition. "The deep, glossy black color of our X6 player makes it exceptionally beautiful and distinctive in a market where there are plenty of good-looking designs," said Huang. "The use of GE's Lexan PC resin, which sets a high standard of excellence for the industry, helped to ensure a high-quality part."

Further, the resin's high flow rate, adaptability to the existing mold, and elimination of secondary operations saved cycle time and kept system costs down. "Like other manufacturers in this fast-paced market, we must get our new products to the consumer quickly and cost-effectively to stay

competitive," said Mr. Huang. "GE helped to accelerate this process."

Based on the success experienced with GE's Raven Visualfx resin, in July 2005, Meizu launched three new versions of the X6 player using a different GE Visualfx resin concept – the "China Palette" effects. These include two Optillusion effects and one Vivid effect.

Future Plans

Based on Meizu's positive experience working with GE, the company recognizes the value of GE as a long term supplier. And because of the success with Visualfx resins, Meizu has selected them for its next-generation (X3) MP3 players. "We believe that GE's commitment to innovation and local presence in China will bring Meizu another great success," said Liu.

Details at:
www.meizu.com

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For further information, contact:

Tommy Liu
Application Development Manager – South China
Global Lexan Resin Business
GE Plastics

Tel: (86-20) 83634828 Ext. 396
Fax: (86-20) 83634118
Email: tommy.liu@ge.com
www.geplastics.com

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