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UniPixel launches fingerprint resistant film

A novel thin film that prevents fingerprints from obscuring a display has been developed for the expanding touch-screen market.

Touch-screen devices are great in theory, but fingerprints on the surface of the display can spoil its appearance and reduce the optical output from the device. Now, however, US company UniPixel has unveiled an innovative thin film that eliminates fingerprints, but also maintains an optically clear path to the underlying display screen.

The optical film, which UniPixel has dubbed Opacity FPR (Finger Print Resistant), can be applied to any display surface — including existing devices. "Opacity FPR film is not a coating so it does not add cost to the screen directly," said Jim Tassone, UniPixel's CFO. "It is an add-on peripheral film so it is a discretionary cost to the device user after purchase."

Tassone says that fingerprints on the screen surface not only degrade the clarity of the display, but also reflect ambient light and block light transmission. "Current LCD technology is only 5% efficient in light transmission to the viewer, and so all light transmitted is needed to ensure proper usability of the underlying display," said Tassone. "Fingerprints can act as a significant detractor to display performance and appearance."

According to Tassone, the thin films that are currently applied to touch screens use chemicals to break down the skin oils that cause fingerprints, but these films are not very effective. Instead, he says, UniPixel exploits geometric microstructures on the film surface to diffuse the skin oils.

"Opacity FPR film is designed specifically to enhance the optical performance of the display by including tuned optical structures and refractive index matching," said Tassone. "We estimate that the optical performance improvement can range from 1% to 5% increase in direct optical output."

The exact improvement in performance depends on the optical characteristics of the display, which in turn dictates the performance of the screen. "The benefits of this approach are tied directly to the LCD screen to which it is applied," said Tassone.

Tassone adds that the microstructures can be hard coated, which prevents the underlying surface from being scratched while also resisting direct damage from scratching. Anti-glare treatments can also be incorporated into the microstructures and the material that makes the film. The resulting film can be applied to any display panel, either by using a thin pressure adhesive or a static cling approach.

Unipixel believes that there is a significant market opportunity for its Opacity FPR. Tassone cites figures from market analyst firm DisplaySearch, which forecasts that more than 660 million touch screens will be shipped annually by 2015.

And UniPixel is ready to enter the commercial market. A volume production process has already been developed and tested, and the company is now in discussions with potential distribution partners. "The Opacity FPR film offers an immediate and clear path to commercial production revenues for UniPixel," said Reed Killion, the company's president and CEO.