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Display Week 2007 Daily Report: 3M Quietly Launches New Projected-Capacitive Touch

By Geoff Walker

LONG BEACH, Calif. - < [3M3M](#) (Booth 1802) demonstrated Flex Capacitive, a new projected capacitive touch sensor at the [Display Week 2007 Exhibition](#) this week. Flex Capacitive is aimed solely at the mobile handset market, i.e., at touch-enabled cellphones. 3M is very optimistic about the potential of this market, with good reason. If only 10% of the 1-billion-unit-per-year cellphone market becomes touch-enabled, and if a 2-inch touch sensor sells for \$1 to \$2, that's a \$100 million to \$200 million market, which would instantly be a sizeable addition to the existing \$1 billion touch market.

From a technology point of view, Flex Capacitive is basically the next generation of 3M's "Intelligent Surface Technology" (IST), which in turn was the stillborn next generation of its Near Field Imaging, which was in turn the next generation of MicroTouch's Through Glass technology. The sensor consists of two layers of transparent conductors (ITO) in an OEM-specified pattern on a PET substrate -- similar to the projected capacitive sensors produced by Touch International and Zytronic. 3M said that the conductors were 250 microns wide, but that it was doing miraculous things with index-matching (AR) layers to minimize their visibility. 3M showed me two different samples of the sensor, and I was completely unable to see any sign of visible conductors. Frankly, I found it hard to believe that 1/4-mm wide traces had become totally invisible, but that's what I was asked to believe. That's the reason there's no photo with this story -- there was nothing to photograph except a clear piece of two-inch PET film -- not exactly a riveting photo!

Several things stand out about this announcement. First, it's another sign of projected capacitive's advancement into the mobile-phone market, as predicted by some of analysts. Second, the touch sensor is being produced on a roll-to-roll production line. 3M was unwilling to say exactly how the ITO was being deposited, but it's certainly possible to include a vacuum-sputtering operation within a roll-to-roll process. Third, 3M is keeping an unusually low profile on this product -- it has not issued a press release or specification sheet on the product. The distribution channel for the product consists of one person inside 3M who is focused on selling to cell-phone manufacturers, which is 3M's sole focus for this technology at this point.

In addition, 3M is not offering a controller with the product -- it is just selling a sensor). 3M said this is because it believes that the cell-phone manufacturers all want to source the controller themselves. I asked Analog Devices (a touch-controller supplier exhibiting at SID) about this, and their opinion was that the typical cellphone manufacturer would most probably ask its LCD supplier to include the touch-screen controller functionality inside the LCD controller.

The bottom line is that 3M hasn't abandoned projective capacitive after all, even after publicly bailing out of NFI and IST around the time of last year's SID. I think this is good for the market, as 3M is a substantial player that will lift the profile of projected capacitive and continue to drive the expansion of touch into consumer devices.

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