

# Samsung SDI Develops Largest Ever Active-Matrix OLED Display

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Samsung SDI Co, Ltd of Korea, a flat-panel display affiliate of the Samsung Group, said on May 18 it has developed the world's largest active-matrix (AM) organic light-emitting diode (OLED) display based on the low-temperature polysilicon (LTPS) technology, measuring 17 inches.

This is really a technology race, just yesterday Philips and Epson also announced their prototypes OLED developments. Phys.org reported that—[phys.org/news96.html](http://phys.org/news96.html) and [phys.org/news97.html](http://phys.org/news97.html) .

The prototype will be shown at the 2004 Society for Information Display (SID) conference, taking place from 25th May in Seattle, where Philips is also going to [demonstrate its prototype](#).

The displays are made using a transfer technology developed by

Samsung and 3M, where the pattern of plastic pixels on the screen is printed by scanning a laser across a set of organic films. This can produce a larger screen than is possible by the alternative method of spraying the plastic through a patterned shadow mask, says the company, while allowing a similar precision.

OLEDs, intended primarily for use in mobile phone handsets, are made of electricity-powered light-emitting organic substances and have been praised for having a wider viewing angle, lower power consumption and swifter response time than thin-film transistor-liquid crystal display (TFT-LCD) screens.

Active Matrix OLED applies independent R,G,B driving method unlike Passive Matrix OLED which makes possible of high density & precision display. The cost for the equipment and materials of AM type is relatively expensive caused by its complex processes compared to PM method; however, AMOLED is prospected to have the world market in next-generation displays of post-TFT LCD, regardless of those disadvantages thanks to its low power consumption, high density & precision, quick response time, wide viewing angle, and slim design (see also here [www.samsungsdi.co.kr/contents/...oduct/oled/oled.html](http://www.samsungsdi.co.kr/contents/...oduct/oled/oled.html))

"This is the first time that Samsung SDI has applied LITI to products more than 3.6-inch in size since the company and 3M together developed the techniques in 2002," a company official said.

The 17-inch AM OLED is able to display high-definition moving images without afterimages. It has 5.76 mega pixels and an ultra extended graphics array (UXGA) mode. The UXGA is a display mode in which the resolution is 1600 pixels horizontally by 1200 pixels vertically.

Brightness of the product has improved twice as much compared to other current OLEDs, the company said. It has a brightness of 400

candelas, the same as a 15.5-inch OLED display, with less electricity consumption.

The company will establish production lines for the AM OLED within this year and launch manufacturing in earnest from the latter half of next year.

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