Samsung claims double-sided LCD screen

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Samsung Electronics claims to have created the first liquid-crystal display panel that can produce independent images on both sides of a single small LCD display.

Samsung said Thursday that its double-sided LCD, which will make its debut at the Consumer Electronics Show, can show two entirely different pictures or sets of visual data simultaneously on the front and back of the same screen.

This is due to a pixel design that allows separate control of the liquid crystal on each side of the display, enabling both sides to display separately. Each pixel is controlled by two gates—transistor elements to which voltage is applied to turn on or off the circuit that provides the signal needed to drive the LCD.

Normally, one circuit is needed for every pixel, in order to make a single screen function. Samsung's double-screen LCD has two gates to control each pixel, allowing the same pixel to be used for two different screens. One backlight lights both screens, although one of the screens relies more on external light sources.

The mobile screen is 2.22 inches, and will be used to replace two display panels with one, which Samsung says will reduce the overall thickness of mobile products by at least 1 millimeter.

One potential application for the double-sided screen would be in clamshell mobile phones. Today, they typically contain two different LCD screens: a smaller screen on the outside for when the phone is closed and a larger one on the inside, used when the phone is open. Using a single double-sided LCD screen would allow manufacturers to shrink the thickness of the handset.

"Our new double-sided mobile display underscores Samsung's commitment to equip our customers with advanced display technology that accelerates the trend toward slimmer mobile products," Yun Jin-hyuk, executive vice president of the Samsung Electronics LCD Business mobile display division, said in a statement. "We anticipate high demand when we commence mass production in the first half of 2007."

Mitsubishi announced in February 2004 a double-sided display screen for mobiles that used two screens.

Flexible display technology using organic polymers is also an emerging market, with Plastic Logic announcing on Wednesday that it will open a factory to make e-paper components in Dresden, Germany, in 2008.

Tom Espiner reported for ZDNet UK in London.

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