

Samsung readies first batch of super-thin bendable AMOLED displays

July 22 2012, by Nancy Owano



(Phys.org) -- Samsung is set to begin manufacturing its "Youm" displays which have been generating pre-launch excitement as ultra-thin AMOLED panels that will be bendable, stretchable, rollable and foldable like a piece of paper. Samsung expects to begin production of its 0.6mm Youm displays this quarter, with a goal of seeing the first products with the technology to market by the end of the year. Oddly, though, the

displays to roll out this year in the first batch will not have a flexible substrate. They will have a protective glass layer, which in turn will make them unable to take other forms or shapes, the very bend-it, fold-it feature that draws interest at industry shows.

According to those close to developments at Samsung, the real deal AMOLED displays with [flexible substrates](#) will appear in 2014. The early batch at the least will carry the AMOLED features of being very thin, with one third the thickness of current mobile screens.

[OLED displays](#) are thinner, more efficient and offer better picture quality than LCD or plasma displays; OLED is a flat light emitting technology made by placing a series of [organic thin films](#) between two [conductors](#). OLEDs also can be made to be flexible and transparent. The term AMOLED stands for Active-Matrix Organic [Light Emitting Diode](#), an advanced display technology that is still considered in an [embryonic stage](#). Asia has become the hub of AMOLED display manufacturing activity, with [South Korea](#), Taiwan and China the key players. The United States represents the single largest market for AMOLED displays.

According to reports, Samsung's earliest models, of the inflexible kind, will be covered with a layer of glass that is 0.4mm thick. The panels, compared to current generation panels, will be a thinner 0.6mm — in contrast to the current measurement of 1.8mm thick , but with rigid protective glass on top. Observers say that by manufacturing these screens now, Samsung gains experience in producing them for traditional, rigid devices such as phones and tablets. When OEMs will start thinking about flexible gadgets, Samsung intends to be ready with ample supply.

The company has an internal goal to mass-produce truly flexible displays by 2014. Samsung is confident of a coming upswing in demand.

Samsung predicts that by 2014, 50 percent of cell phones may carry AMOLED displays and by 2015 it could be the main TV panel technology.

Latest developments suggest Samsung strategy regarding the displays are on course. In its quarterly earnings call in October last year, Samsung's vice president of investor relations, Robert Yi, told an audience of investors and analysts that flexible displays would be introduced in 2012 and that the application "probably will start from the handset side."

More information: Samsung tablet concept shows a see-through, bendable future (w/ video): [phys.org/news/2011-12-samsung- ... hrough-bendable.html](http://phys.org/news/2011-12-samsung-...hrough-bendable.html)

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