

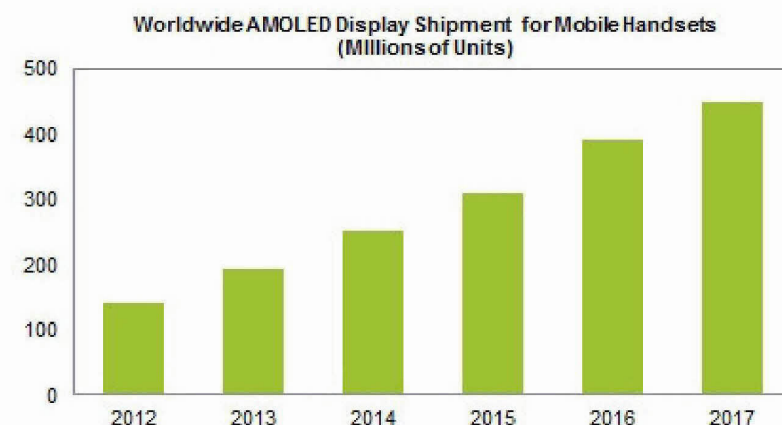
Popularity of Galaxy S4 to kickstart demand for AMOLED market

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(iTers News) - Due to the "halo-effect" of Samsung Galaxy S4 smart phones, demand for AMOLED panels will skyrocket, more than doubling by 2017, market research firm IHS iSuppli forecasts.

According to IHS iSuppli, AMOLED display shipments to mobile handset applications markets are expected to grow to 447.7 million units in 2017, up from 195.1 million units in 2013, making up 15.2% of total mobile display markets. The share of AMOLED as a percentage of total mobile display shipments is expected to hit 7.9% in 2013.

Especially, AMOLED's market share for 4-inch or larger handset displays for smart phones is set to increase to 24.4% in 2017, up from 23.0% in 2013.



Source: IHS iSuppli Research, March 2013

"Because of their use in marquee products like the Galaxy S4, high-quality AMOLEDs are growing in popularity and gaining share at the expense of liquid crystal display (LCD) screens," said Vinita Jakhanwal, director for mobile & emerging displays and technology at IHS. "These attractive AMOLEDs are part of a growing trend of large-sized, high-resolution displays used in mobile

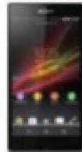
devices. With the S4 representing the first time that a full high-definition (HD) AMOLED has been used in mobile handsets, Samsung continues to raise the profile of this display technology.”

AMOLED on display in the S4

For its new premium smartphone, Samsung Display—the AMOLED display supplier for Samsung Electronics—increased the AMOLED pixel format to 1920 by 1080 Full High Definition (Full HD), up from 1280 x 720 WXGA present in the Galaxy S III.

The S4 joins the ranks of high-end smartphone models from other manufacturers that also feature 1920 by 1080 resolution, most of which incorporate TFT-LCD panels.

Among the handsets with 1920 by 1080 TFT-LCD panels are the 4.8-inch HTC One, the 5.0-inch Sony Xperia Z, the 5.0-inch ZTE Grand S, the 5.0-inch OPPO Find, the 5.5-inch LG Optimus G Pro and the 5.5-inch Lenovo Ideaphone K900.

Model Name	Galaxy S4	iPhone 5	OptimusG Pro	Xperia Z	One	Ascend P2	Grand S
							
Maker	Samsung	Apple	LG	Sony	HTC	Huawei	ZTE
Announced Release	Mar. 2013 Apr. 2013	Sept. 2012 Sept. 2012	Feb. 2013 Feb. 2013	Jan. 2013 Feb. 2013	Feb. 2013 Mar. 2013	Feb. 2013 Q2. 2013	Jan. 2013 Q1. 2013
LTE OS	○ Jelly Bean	○ iOS 6	○ Jelly Bean	○ Jelly Bean	○ Jelly Bean	○ Jelly Bean	○ Jelly Bean
Display Resolution	Super AMOLED 1080 x 1920	IPS LCD 640 x 1136	True HD IPS+ 1080 x 1920	LCD 1080 x 1920	LCD 1080 x 1920	IPS LCD 720 x 1280	LCD 1080 x 1920
Display(Inch)	5	4	5.5	5	4.7	4.7	5
Pixel Per Inch	441	326	401	441	469	312	441
Memory(GB)	16/32/64	16/32/64	32	16	32/64	16	16
RAM(MB)	2048	1024	2048	2048	2048	1024	2048
NFC	○	X	○	○	○	○	○
Camera(M)	13	8	13	13.1	4	13	13
Chipset CPU	Exynos 5 Octa Octa 1.6	Apple A6 Dual core 1.2	Qualcomm Quad-core 1.7	Qualcomm Quad-core 1.5	Qualcomm Quad-core 1.7	Qualcomm Quad-core 1.5	Qualcomm Quad-core 1.7
Battery(mAh)	2600	1440	3140	2330	2300	2420	1780
Weight(g)	130	112	160	146	143	122	

Samsung tackles technical issues

The high-resolution mobile handset display market is currently dominated by Low-Temperature Polysilicon (LTPS) TFT-LCDs, which accounts for the entire Full HD mobile handset display market.

Reaching the high-resolution point with true pixel densities greater than 300 pixels per inch (ppi) has been a challenge for AMOLED displays, as it is difficult to achieve dense pixel arrangements using the conventional Fine Metal Mask process while still securing enough display brightness and not compromising power consumption.

Samsung Display, however, was able to enhance AMOLED display performance by implementing two new technologies. The maker succeeded in increasing the lighting area in AMOLED panels with its new structure of Pentile matrix, and it used phosphorescent material for the green subpixels, allowing better light management and lower energy consumption.

As a result, the AMOLED display was able to achieve a denser pixel arrangement, boosting its pixel density to greater than 400 ppi and resulting in 1920 x 1080 Full HD display in the Galaxy S4.

This compares to 1280 x 720 WXGA in the Galaxy S III, 800 x 480 WVGA in the Galaxy S2 and 1280 x 800 WXGA in the Galaxy Note. The higher pixel density provides sharper and more defined images, while being able to display more content on a smaller display area.

Model Name	Galaxy S IV	Galaxy S III	Galaxy S II	Gakaxy S
Image				
Announced	Mar. 2013	May 2012	Apr. 2011	Jun. 2010
Release	Apr. 2013	May 2012	Apr. 2011	Jun. 2010
LTE	O	O	O	X
OS	Android Jelly Bean	Android Jelly Bean	Android Gingerbread	Android Éclair
Display	FHD Super AMOLED	AMOLED	AMOLED	AMOLED
Resolution	1080 x 1920	720 X 1280	480 x 800	480 x 800
Display(Inch)	5	4.8	4.3	4
PPI(Pixel Per Inch)	441	306	217	233
Memory(GB)	16/32/64	16/32/64	16/32	8/16
RAM(MB)	2048	1024	1024	512
NFC	O	O	Optional	X
Camera(M)	13	8(AF+HDR)	8	5
Chipset	Exynos 5 Octa	Exynos 4212	Exynos	Hummingbird
CPU	Quad1.9, Octa 1.6GHz	Quad-core 1.4GHz	Quad-core 1.2GHz	1GHz
Battery(mAh)	2600	2100	1650	1500
Weight(g)	130	133	116	119

Samsung also implemented a so-called floating touch system in Galaxy S4, allowing users to interact with the touch screen by letting their fingers hover a few inches away from the display. By combining mutual capacitance, the on-surface normal touch sensing and self-capacitance, the floating touch in the Galaxy S4 expands the user experience of the display. It also detects touch inputs from gloved hands, a feature that was first introduced through Nokia's Lumia 920 in 2012.

(Credit : IHS iSuppli)



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