LCD TV Panel Manufacturers Developing Unique Specifications for Emerging Markets

General Electric

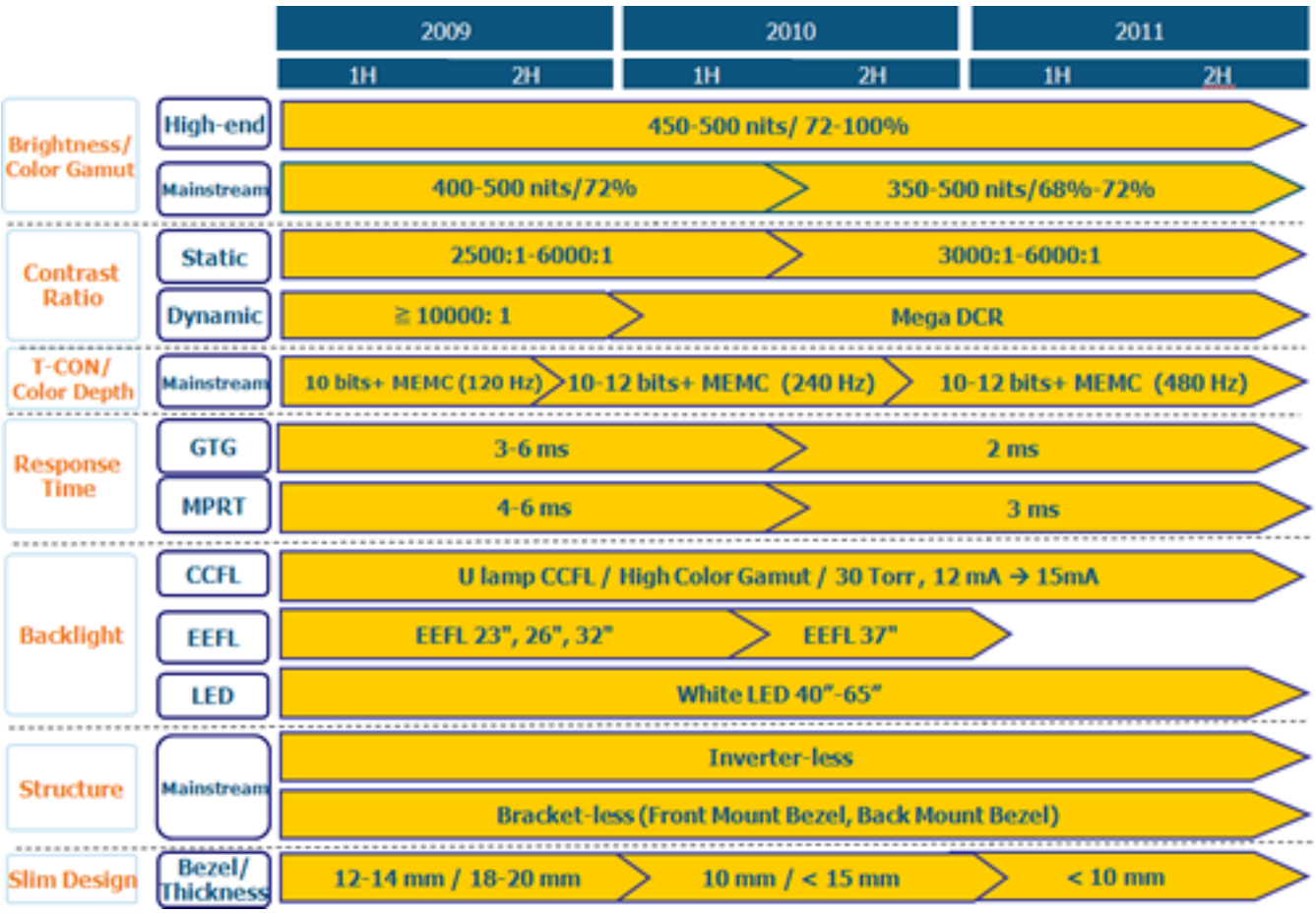
SANTA CLARA, CALIF., December 21, 2010LCD TV panel manufacturers introduce advanced features and enhancements such as 3D, 480 Hz frame rate, ultra-slim form factors, and direct-lit LED backlights, but they are also adding a category at the other end of their product roadmaps targeting emerging markets. These lower-cost panel designs with lower brightness and color gamut have been developed, and they are re-shaping the panel technology and business.

According to the DisplaySearch Quarterly Large-Area TFT LCD Product Roadmap Report *[1]*, panel makers are designing for emerging markets like India, Brazil, China, and Russia with lower specifications than for developed markets. Brightness can be in the range of 350-400 nits, versus the 450-500 nits standard, and color saturation can be 65-68% of NTSC versus 72-75%.

As LCD TVs move closer to reaching 200 million shipments per year, they are facing maturity in some developed countries. Two crucial tendencies are seen in panel makers roadmaps. One is a shift to high-end features in order to stimulate replacement demand in developed countries. At the same time, they are creating a market segment with lower specifications and lower costs to satisfy the new demand from emerging countries.

Because of the variation in consumer preferences among developed and emerging regions in 2011, it will be more important to target the right market segments and regions with the right specifications and appropriate cost, instead of simply adding new features to product roadmaps, noted Shawn Lee [2], Senior Analyst for DisplaySearch.

Figure 1: LCD TV Panel Development Trends



Source: DisplaySearch Quarterly Large-Area TFT LCD Product Roadmap Report *[1]*

Panel manufacturers such as LG Display, AUO, Chimei Innolux and BOE are all investing in the emerging TV market segment. Lower specifications will be achieved through restructuring LCD backlights by swapping prism films with diffusers, using larger LED packages for better efficiency, reducing LED light bars and packages, minimizing glass substrate thickness from 0.7 mm to 0.5 mm, and modifying the color filter structure.

Additional findings on about LCD TV panel roadmaps in the Quarterly Large-Area TFT LCD Product Roadmap Report *[1]* include the following:

- Sharp, the only company with a Gen 10 fab, is planning to produce 6-up 70W panels. Sharp is currently producing 40W, 60W and 65W in Gen 10.
- AUO is working on a 58, 21:9 aspect ratio, 120 Hz panel, called Cinema Scope HD, targeted to 3D, home cinema, and smart TV markets. LG Display and Samsung are also working on 21:9 LCD TV panels.
- Samsung is producing 43 4:1 panels for public displays in its Gen 7 fab. The company has also developed a new LCD cell structure called PLS, which combines the horizontal and vertical electric fields and has impressive off-axis image quality.
- With the ramp up of its Gen 6 fab, BOE has entered the 32+ LCD TV panel market and will apply FFS technology for wide viewing angle.
- The 120 Hz frame rate has become the mainstream solution for 40+ LCD TV

panels. 240 Hz panels have been introduced for shutter glass-based 3D TV, and panel makers are developing 480 Hz with direct type LED backlight with local dimming, targeting high end markets.
- Sharp has strengthened its UV2A technology, which can achieve 20% higher aperture ratios, over 5000:1 contrast ratio, and 4 ms response time.
- LG Display is aggressively promoting 3D LCD panels using a pattern retarder, and plans to offer 32, 37, 42, 47, and 55 FHD panels. AUO is developing 32 HD and 65 FHD pattern retarder panels. Other panel makers are focusing on the shutter glass approach. Chimei Innolux is developing a 120 Hz solution for 3D TV.

The DisplaySearch Quarterly Large-Area TFT LCD Product Roadmap Report *[1]* includes TFT LCD panel roadmaps, product technology trends by applications by companies by size by fabs and by different time frames. Please contact Charles Camaroto at 1.888.436.7673 or 1.516.625.2452, e-mail contact@displaysearch.com [3] or contact your regional DisplaySearch office in China, Japan, Korea or Taiwan [4] for more information.

SOURCE [5]

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