

Apple's Newest Display to Boost High-End Demand, with Mini LED Backlights to Become Both a Chance and a Challenge, Says TrendForce

2019-06-17 [Roger Chu](#)

LEDinside, a division of [TrendForce](#), points out that Apple has just released the Pro Display XDR 32-inch 6K display, which utilizes a brand new LED backlight solution. In doing so, Apple is motivating the display industry to actively explore new solutions for high end products, with next generation Mini LED backlight technology to become the main area of development for many suppliers. Mini LED backlight revenue is expected to reach US\$340 million in 2023 (not including the revenue from other driver ICs and backplanes).

TrendForce points out that the brand new LED backlight solution includes a bright array of 576 blue LEDs and a passive-matrix driver IC that can control each LED with swift precision. This allows Apple's Pro Display XDR 32-inch 6K display to achieve 1,000 nit brightness and can even reach a peak brightness of 1,600 nit, with a contrast ratio of up to 1,000,000 : 1. Although this backlight solution isn't the Mini LED backlight widely rumored in the industry, it does shine a ray of light for LED and display manufacturers.

Displays utilizing Mini LED backlights are equipped with local dimming, which gives a contrast effect similar to that of OLED displays. Mini LED backlight displays even cost less than OLED displays. For panel manufacturers, this will allow product specifications to go that extra mile and get a chance to compete with OLED technology. Although current high-end displays still lack backlight technology on par with true Mini LED backlights, we can already see high-end TVs, whether produced by Samsung or Sony, using multiple traditional backlight LEDs with the help of local dimming methods to give a display performance of higher contrast and quality.

Mini LED Backlight Products Remain Expensive, with Suppliers Aiming to Commercialize in 2 to 3 years

Currently, costs still form the main challenge faced by Mini LED backlight products. Factors such as the increasing number of LED chips and driver ICs, yield and uniformity caused costs to remain high. Furthermore, despite the speedy downfall of current LCD panels prices, the additional Mini LED backlight costs will offset this fall and even increase overall display costs, seriously impacting customers' desire to introduce Mini LEDs.

TrendForce asserts that Mini LEDs can be viewed as both a chance and a challenge. Many panel suppliers are actively seeking to develop glass backplanes with active driving solutions in an attempt to lower the costs of LED driver ICs and PCBs. Equipment manufacturers are also developing new methods of mass transfer to lower component manufacturing costs for Mini LED. Suppliers hope to lower costs down to a degree viable for commercialized mass production.

This year, LEDinside's annual Micro LEDforum event presents "Micro LED: Key Technology and Application Market," and will be held at the NTUH International Convention Center on July 2, 2019. Industrial leaders from around the world have been invited to the event; side by side with LEDinside's professional team of analysts, they will give a comprehensive analysis on key market trends, ranging from manufacturing equipment, chip design, testing solutions, transfer techniques, driver design, display and niche technological products. We eagerly look forward to seeing everyone take part in this grand occasion, and we definitely hope to see you there! Event link:

<https://seminar.trendforce.com/LEDforum/2019/US/INDEX/>

About TrendForce

TrendForce is a global provider of the latest development, insight, and analysis of the technology industry. Having served businesses for over a decade, the company has built up a strong base membership base of 435,000 subscribers. TrendForce has established a reputation as an organization that offers insightful and accurate analysis of the technology industry through five major research divisions: DRAMXchange, WitsView, LEDinside, EnergyTrend and Topology. Founded in Taipei, Taiwan in 2000, TrendForce has extended its presence in China since 2004 with offices in Shenzhen and Beijing. For more details about TrendForce, please visit www.trendforce.com

Major research divisions:

DRAMeXchange focuses on memory, storage and the consumer electronics industry including PC DRAM, Mobile DRAM, Server DRAM, NAND Flash, SSD and smartphone.

WitsView offers comprehensive coverage of the display industry from upstream components, midstream panels/touch modules to downstream system integrators, brands and channels.

LEDinside covers all aspects of the LED supply chain from upstream equipment/materials, midstream chip/packaging to the downstream backlight and lighting market.

EnergyTrend specializes in green energy research, such as solar energy, lithium battery, energy storage systems and xEVs.

Topology studies structural trends of technology industries in the Greater China Region and beyond, focusing on semiconductors, photovoltaic technology, telecommunications, and IA.

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