En route to CEATEC: 17.3-inch 8K4K LCD module

October 3 2015, by Nancy Owano

Credit: Display image provided courtesy of NHK

In the old days, people were impressed if a screen image simply was not blurry. "Clear" was the supreme compliment. We know the rest. Technology advances have raised consumer expectations; a competitive

vendor in electronics wants to use the word "outstanding" for the screen image and, if Japan Display Inc. (JDI) has an impact on this kind of history, the description now had better use the word "immersive."

Japan Display announced on Thursday development of a 17.3-inch 8K4K LCD monitor. According to the announcement, JDI has developed "the world's first 17.3-inch high resolution (7,680(W) x RGB x 4,320(H) pixels), fast response (frame rate 120Hz) liquid crystal display (LCD) module, the same size as the standard monitor commonly used for the video image production."

The company knows there are market sectors that require highest-quality images with high resolution and depth—gaming and video production are two examples.

"The LCD module, based on low temperature polysilicon (LTPS) technology with true 8K pixels (RGB stripe arrangement), realizes high definition (510ppi) images, and the 120Hz frame rate enables smooth playback of moving image. By providing wide viewing angle, high contrast and little color shift, the advantages of IPS technology enable reproduction of life-like 8K image with a sense of depth in image quality," said the JDI announcement.

Christopher Klimovski of *Engadget* said Japan Display "pushed the limits" of screen resolution with this one.

What does LTPS bring as a technology advantage? The company said the raw material of TFTs (thin film transistors) is silicon, a semiconductor. "It is very difficult to pattern onto glass, and only amorphous silicon could be patterned in the past." They worked on developing a low temperature polysilicon (LTPS) TFT, which uses a large particle-diameter polycrystalline structure.

The company said that "a low temperature polysilicon TFT has a high-performance transistor, and it is possible to pattern part of the display drive circuitry onto the glass."

The fact that it has a resolution of 7,680 × 4,320 pixels may not be the most impressive feature in this. Jon Martindale in *Digital Trends* said, "What's perhaps more impressive though, is that it is able to achieve this super high resolution and still output at a 120 Hz refresh rate."

The company knows that 8K technology is appealing for products dedicated to video image production, medical monitors and gaming PC monitors. *Digital Trends* said the other big area of potential for small, high-detail displays such as this would be virtual reality.

"With such high resolutions, distinguishing individual pixels is only possible from very close up, so if Japan Display can shrink this screen down to six inches or so, it would be perfect for a head-mounted display," said Martindale.

Looking at the bigger picture, he said, "It seems amazing that just a few short years ago 1080p HD was considered the holy grail of display technology. While that is very much the standard today, 4K TVs and monitors are beginning to proliferate and there is already talk of much more detailed screens arriving before long."

JDI will do a presentation soon on this at CEATEC (Combined Exhibition of Advanced Technologies) JAPAN 2015.

JDI was formed from the integration of the small-medium display businesses of Sony Corporation, Toshiba Corporation and Hitachi Ltd. The company began business operations in 2012.

More information: www.j-

display.com/english/news/2015/20151001.html

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