

## Sharp IGZO-based LCD and OLED Displays on Show at Display Week 2013

*IGZO enables approx. 50% more resolution and 50% power savings over traditional LCDs*

**CAMAS, Wash. – May 20, 2013** – Today, Sharp Microelectronics of the Americas (SMA) announced that LCDs and OLEDs powered by Sharp's proprietary IGZO (Indium Gallium Zinc Oxide) technology will be on show in the Sharp booth during Display Week 2013 (May 21 - 23 in Vancouver, B.C.). LCDs will include 11.6-inch and 31.5-inch QFHD displays, and a 15.6-inch QHD+ display. OLED displays will include a 13.3-inch 4K/2K (ultra-HD) display, as well as IGZO QFHD specialty displays. All sizes are diagonal. Find information about IGZO and other Sharp LCDs at [www.SharpSMA.com](http://www.SharpSMA.com).

### IGZO Technology

IGZO, developed in conjunction with Semiconductor Energy laboratory (SEL), moves LCDs beyond traditional TFT LCD technology, with electron mobility significantly higher than Amorphous Silicon (a-Si) displays. IGZO displays' smaller TFT structure enables higher resolution with slimmer product profiles, including narrower display borders when comparing edge-to-edge display area.

The improved pixel performance also leads to a big decrease in energy consumption by reducing the number of LEDs required in the backlight to achieve high brightness. Approximately 54% less power is used in standard operation with IGZO as compared to an a-Si LCD. This will benefit hand-held and other battery-powered devices by dramatically extending battery life. It also benefits large screen displays by alleviating design issues related to the panels' power and heat management requirements.

Display of still images will benefit from an even greater energy-use reduction, up to 80%. This is achieved via a new driving method that allows a 1 Hz refresh rate with no resulting flicker in the image. Smart Refresh Control (SRC) technology allows a display module to instantly recognize data as video, web movie, or still image, then adjust power consumption appropriately.

### IGZO "the Enabler"

#### Touch Applications

Touch panel systems with IGZO will experience significantly less noise interference than traditional touch screens. In a "power down" state, panels become essentially noise-free. This allows for far more efficient touch screen operations, including the ability to recognize extreme detail, such as drawing of fine lines, on a display.

### OLED

OLED displays, previously limited to 5-inch size classes will have the potential to jump to as high as 90-inches diagonal, powered by IGZO. IGZO also enables displays such as curved (i.e. non-flat or linear) panels built with OLEDs, as well as specialty QFHD (Ultra-HD) panels. While this is expected to have a big impact on the consumer TV market, some IGZO-based panels are already being shown by Sharp as potential commercial and industrial application fits.

## **MEMS**

Sharp has recently collaborated with Qualcomm to develop Pixtronix MEMS displays. The products aim to offer a widened color gamut, and programmable color performance and power consumption for further reduced power usage, among other benefits.

### **About Sharp Microelectronics of the Americas**

Sharp Microelectronics of the Americas (SMA) drives innovative LCD, optoelectronics, imager, and RF components to market. The world's leading manufacturers of consumer and business technologies look to SMA for the products, expertise, and worldwide support they need to make their visions a reality. SMA, in Camas, Washington, is the microelectronics sales and marketing division of Sharp Electronics Corporation, a wholly owned subsidiary of Sharp Corporation. For more information, visit us at [www.SHARPsma.com](http://www.SHARPsma.com).

- The Restriction of Hazardous Substances in Electrical and Electronic Equipment (RoHS) Directive (2002/95/EC). This directive took effect July 1, 2006.

All measurements are diagonal. All Specification values quoted are Typical values. IGZO: (InGaZnO), an oxide comprising indium (In), gallium (Ga), and zinc (Zn). LED: Light Emitting Diode. OLED: Organic Light-Emitting Diode. LCD: Liquid Crystal Display. TFT: Thin Film Transistors. Sharp is a registered trademark of Sharp Corporation.

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