

# NEWS RELEASE

**TOSHIBA AMERICA ELECTRONIC COMPONENTS, INC.**

Irvine Headquarters  
19900 MacArthur Boulevard, Suite 400  
Irvine, California 92612  
Telephone: (949) 623-2900, Facsimile: (949) 474-1300

**AGENCY CONTACT:**

Bob Nelson  
Tsantes Consulting Group  
Tel.: (408) 201-2402  
[bnelson@tsantes.com](mailto:bnelson@tsantes.com)

**COMPANY CONTACT:**

Deborah Chalmers  
Toshiba America Electronic Components, Inc.  
Tel.: (408) 526-2454  
[deborah.chalmers@taec.toshiba.com](mailto:deborah.chalmers@taec.toshiba.com)

**VISIT TAEC in Booth #1119**

**TOSHIBA AMERICA ELECTRONIC COMPONENTS TO SHOWCASE 3D  
AND OTHER INNOVATIVE LCD TECHNOLOGIES AT SID 2011**

*Advanced 3D display technologies to be featured,  
as well as LTPS SOG in-cell touch and input technologies*

**Los Angeles, California, May 16, 2011** — Toshiba America Electronic Components, Inc. (TAEC)\*, a committed industry leader that collaborates with customers to create breakthrough designs, will exhibit next-generation displays and technologies developed by Toshiba Mobile Display Co., Ltd. (TMD)\*\* for mobile phones and portable electronics, automotive applications, industrial markets and 3D applications in booth #1119 at the 2011 Society for Information Display (SID) International Symposium, Seminar & Exhibition, May 17 to 19, 2011.

Featured developments in TAEC's booth this year include two different 3D technology demonstrations, new displays for high-resolution handheld mobile applications, high-resolution and high-reliability automotive displays and industrial LCD displays with replaceable LED backlights capable of 100,000 hours MTBF<sup>(1)</sup>. Displays with Low Temperature Poly-Silicon (LTPS), Optically Compensated Bend (OCB), System-on-Glass (SOG), LED backlighting, and other advanced technologies can be viewed in five demonstration areas: mobile, automotive, industrial, 3D, and SOG in-cell technology.

"We are excited to exhibit several new and innovative products and technologies aimed at mobile, automotive and industrial applications. Our advancements in system-on-glass in-cell technology and our approaches to 3D will enable future growth in new markets and applications," said Clayton Bond, senior vice president, Display Devices and Components Business Unit for TAEC.

**3D Technology**

TAEC will demonstrate two 3D technologies. The first approach, Integral Imaging 3D, combines an ultra-high resolution display and a lenticular lens sheet to enable “Multi-view” natural viewing without 3D glasses, so the same image can be seen from multiple viewing points. Integral Imaging will be shown in a 21.0-inch Wide-XGA (1280 x 800) and 12.1-inch 466x350 technology demonstration. The second approach, Time Sequential, will be shown on two displays – a 3.0-inch Wide-QVGA (400 x 240) and an 8.0-inch Wide-VGA (800 x 480) 3D OCB panels – utilizing a backlight system incorporating a bi-directional lens sheet. The displays synchronize LED switching with left- and right-eye images to achieve stereoscopic (twin-eye 3D) viewing without special glasses while maintaining a fast response time and a wide viewing angle. This approach is 2D/3D switchable, and enables a thin, easy-to-assemble LCD panel utilizing its full native resolution without compromise.

**In-cell Technology**

TAEC will demonstrate two novel in-cell technologies enabled by LTPS technology. The first technology, in-cell touch, is based on capacitive coupling between the user’s finger and the detection electrode on the TFT substrate at a given point. This approach utilizes LTPS to integrate the capacitive sensors into multiple locations in the cell, and enables multi-touch operation with no touch force. The in-cell capacitive touch technology will be shown in a 7.0-inch Wide SVGA (1024 x 600) technology demonstration, and discussed in Seminar 43.4 on Thursday, May 19 at 10:00am in Petree Hall D. The second technology, in-cell write-erasable, is based on the integration of memory circuits and photo sensors into the display cell. This in-cell, write-erasable technology will be shown in a 7.0-inch QVGA (320 x 240) technology demonstration, and discussed in Seminar 50.3 on Thursday, May 19 at 11:20am in Petree Hall D.

**Displays for Mobile Phones and Portable Electronics**

The mobile section of the booth will feature high-resolution LTPS displays, up to 367ppi (pixels per inch) resolution density, in sizes ranging from 3.3-inch to 4.0-inch with resolution formats ranging from Wide VGA (480 x 864) to HD (720 x 1280). In addition, these displays will demonstrate advanced technologies such as high-contrast (up to 1,500:1), high-color (up to 92% NTSC), and wide viewing angle (up to H/V 176°/176°). The displays are just a few

representative examples of TMD's broad line of thin and light displays for mobile smartphones and other portable electronic devices.

### **Displays for Automotive Applications**

Innovative displays for automotive center information, navigation and entertainment applications are also featured this year. A high-resolution 9.0-inch Wide XGA (1280 x 720) TFT module for HDTV automotive entertainment applications is featured, along with a 7.0-inch Wide VGA (800 x 480) TFT module with wide viewing angle for center information or navigation applications will be shown. Also, three other displays – a 5.0-inch Wide QVGA (480x240), a 4.2-inch Wide-QVGA (400 x 240) and a 3.5-inch QVGA (240 x 320) – designed for high-reliability instrument cluster applications will be demonstrated. Lastly, a 3.3-inch Wide-QVGA display, designed for rearview mirror application, will be shown, too.

### **Displays for Industrial Applications**

A portion of TMD's lineup of color LTPS active-matrix thin-film transistor (TFT) LCD modules for industrial applications will be shown, which incorporate 100,000 hour MTBF LED backlighting systems designed to satisfy the requirements of a broad range of industrial applications, such as test and measurement equipment, medical equipment, and more. Each module shown has replaceable, mercury-free<sup>(2)</sup> LED-based backlighting systems with 100,000 hour MTBF, which far exceeds that of common TFT LCDs for industrial applications utilizing long-life cold cathode fluorescent lamp (CCFL) backlights. Additional modules include two 100,000 hour MTBF modules with resistive touch panels: 8.4-inch XGA (1024 x 768) and 10.4-inch XGA (1024 x 768) LCDs, with replaceable LED backlights.

### **About Toshiba Corp., TAEC and TMD**

Through proven commitment, lasting relationships and advanced, reliable electronic components, Toshiba enables its customers to create market-leading designs. Toshiba is the heartbeat within product breakthroughs from OEMs, ODMs, CMs, distributors and fabless chip companies worldwide. A committed electronic components leader, Toshiba designs and manufactures high-quality flash memory-based storage solutions, discrete devices, [displays](#), advanced materials, medical tubes, custom SoCs/ASICs, digital multimedia and imaging

products, microcontrollers and wireless components that make possible today's leading cell phones, MP3 players, cameras, medical devices, automotive electronics and more.

[Toshiba America Electronic Components, Inc.](http://www.toshiba.com/taec/) is an independent operating company owned by Toshiba America, Inc., a subsidiary of Toshiba Corporation, Japan's largest semiconductor manufacturer and the world's third largest semiconductor manufacturer (Gartner, 2010 WW Semiconductor Revenue, Jan. 2011). Toshiba was founded in 1875, and today operates a global network of more than 740 companies, with 204,000 employees worldwide and annual sales surpassing \$77 billion. For additional company and product information, please visit <http://www.toshiba.com/taec/>.

In April 2009, Toshiba Matsushita Display Technology Co., Ltd. became a wholly owned subsidiary of Toshiba Group when Toshiba acquired Panasonic's shares from a joint venture, and in May changed the company name to Toshiba Mobile Display Co., Ltd. Established in 2002, TMD is an industry leader in small- and medium-sized LCDs for application in such products as mobile phones and in-vehicle displays. For further information, please visit the TMD home page at [http://www.tmdisplay.com/tm\\_dsp/index.htm](http://www.tmdisplay.com/tm_dsp/index.htm).

<sup>(1)</sup>Based on MTBF statistical values. MTBF (Mean Time Between Failure) is not a guarantee or estimate of product life; it is a statistical value related to mean failure rates for a large number of products which may not accurately reflect actual operation. Actual operating life of the product may not resemble the MTBF.

<sup>(2)</sup>Mercury-Free: Toshiba Mobile Display Co., Ltd. defines "Mercury-Free" products as those containing no more than a maximum concentration value of 0.1 percent mercury(Hg) by weight in Homogeneous Materials<sup>(3)</sup>. This does not mean that Mercury-Free products are entirely free of mercury(Hg).

<sup>(3)</sup>Homogeneous Materials: Toshiba Mobile Display Co., Ltd. defines "Homogeneous Materials" to mean a material that cannot be mechanically disjointed into different materials. The term "homogeneous" is understood as "of uniform composition throughout," so examples of "Homogeneous Materials" would be individual types of plastics, ceramics, glass, metals, alloys, paper, board, resins and coatings. Toshiba Matsushita Display Technology Co., Ltd. defines the term "mechanically disjointed" to mean that the materials can, in principle, be separated by mechanical actions such as unscrewing, cutting, crushing, grinding or abrasive processes.

**Information in this press release, including product pricing and specifications, content of services and contact information, is current on the date of the announcement, but is subject to change without prior notice. Technical and application information contained here is subject to the most recent applicable TMD LCD product specifications. In developing designs, please ensure that TMD LCD products are used within specified operating ranges as set forth in the most recent TMD product specifications. This information is available from TAEC or from your TAEC representative.**

**All other trademarks and tradenames held within are the properties of their respective holders.**

**Editors Note:** Reader inquiries please publish: Tech.Questions@taec.toshiba.com.

###