Backlight-free thin-film-transistor LCD

TMDISPLAY

www.tmdisplay.com

Following the proposed investment of ¥30 billion ($270 million) in a new production line of low-temperature poly-silicon LCD panels in its Ishikawa Works in Japan, Toshiba Matsushita Display Technology is now gearing up for mass production of monochrome LCDs. The device in question is a high-resolution, 16-level greyscale, high-reflective, 5-inch VGA monochrome thin-film-transistor LCD. According to the company, the recently developed thin-film-transistor LCD adopts a new, highly efficient reflective surface and internal-reflection technology to maximize its optical performance in ambient light and to make small, well-defined characters easy to read. The technology also eliminates the use of a backlight, enabling a low-power system design and ensuring longer battery-powered operation, which is an important requirement for portable devices, such as electronic dictionaries. The panel has a native resolution of 640 × 480 pixels (VGA), a contrast ratio of 12:1 and a response time of 20 ms. It consumes about 4 mW when being used in binary mode, and 20 mW in 16-greyscale representation. The combined features of high resolution and high reflectance make the display particularly suitable for use in electronic dictionaries, electronic books and office equipment, such as printers, scanners and facsimile machines.

Microprojector boasts near-to-eye ultrahigh performance

www.holoeyesystems.com

HOLOEYE Systems, Westlake Village, California, has produced a near-to-eye microscale liquid-crystal-on-silicon (LCoS) projection module. The microprojector offers high-brightness, full-colour and high-resolution SVGA images thanks to the use of the Z86D-3 LCoS microdisplay by Brillian, a manufacturer of mirodisplays for the high-definition television market. It has a resolution as high as 800 × 600 pixels, a contrast ratio of 80:1 and suits both colour and monochrome applications. Weighing just 23 g and having dimensions of 44.36 × 21.8 × 28.16 mm, the projection module is compact and mobile. Images generated can yield a brightness up to 1,800 fL (6,167 cd m^{-2}) in red-green-blue mode. HOLOEYE claims that its fill factor of greater than 93% is able to deliver smooth, high-quality 9.6 × 7.2 mm (12-mm-diagonal) images without any pixelation. According to HOLOEYE, other benefits include a generous field of view, long eye relief, a large eyebox and low distortion. Equipped with liquid-crystal technology and a non-organic light-emitting diode, this device features a long lifetime and can operate in a wide range of temperatures (from –20 °C to 60 °C).

LCD televisions reach record size

SHARP

www.sharp-world.com

Sharp, a worldwide leader in flat-panel LCD televisions, unveiled a prototype of a 108-inch LCD television at the Consumer Electronics Show held in January 2007 in Las Vegas. With dimensions of 2,386 (height) × 1,344 (width) mm, Sharp claims that this is the world's largest LCD television so far (as of 8 January 2007). The previous record was the 102-inch plasma model introduced by Samsung Electronics last year. The giant television features a Black Advanced Super View Full-Spec High-Definition LCD panel made at Sharp's eighth-generation glass-substrate production plant in Kameyama, Japan. It offers a high-quality image with 4,096 × 2,160 pixel resolution (four times higher than that of current high-definition televisions) and the world's highest contrast ratio of 1,000,000:1. This television is further complemented by the ability to process fast-motion images thanks to a 120 Hz frame-rate conversion and a pixel response time of 4 ms. The latest news means that Sharp has now demonstrated its ability to produce LCD televisions in sizes ranging from 13 inches to 108 inches, and its mission in meeting the growing demands of LCD high-definition televisions.

Display driver cuts power consumption by 35%

www.samsung.com

Samsung Electronics has announced plans to mass-produce its 256-channel display-driver integrated circuit (DDI) for plasma display panels (PDP). This new DDI is based on Samsung's unique power-saving technology — an energy-recovery circuit. According to the company, apart from providing greater high-definition clarity for plasma screens, the device is also able to reduce the DDI power consumption of a conventional PDP television by over 35%, enabling a slimmer and lighter television module. The new DDI also offers greater cost efficiencies as the number of DDIs per panel can be reduced. For example, the sixteen 192-channel DDIs previously needed in a full high-definition 40-inch PDP can now be replaced by twelve 256-channel DDIs. The introduction of this DDI will help meet the high demand for 40-inch, and larger, PDP screens, which is expected to reach 18.84 million units in 2010, according to DisplaySearch, a market forecast firm.

Projector offers 10,000 lumen output

www.panasonic.com

Panasonic Projector Systems Company, a division of Panasonic Corporation of North America, is launching two new three-chip, digital-light-processing (DLP) projectors for use in the commercial digital-cinema, rental, staging and higher-education markets. The two models, PT-D10000U (1,400 × 1,050 pixels) and PT-DW10000U (1,920 × 1,080 pixels), both provide bright, professional-quality images and improved reliability features. High brightness is guaranteed by Panasonic's four-lamp system, which delivers 10,000 lumens, while their dynamic iris technology achieves an outstanding contrast ratio of 5,000:1. With a three-dimensional colour-management function, the projectors are able to deliver approximately 1.07 billion colours. Equipped with an automatic filter-cleaning system, each model can be used for about 2,000 hours without the need for filter maintenance. Panasonic says that another attractive feature is support for connection to a wired local-area network, which allows remote-control, monitoring and e-mail-alert messaging functions through a standard web browser. The company claims PT-D10000U is now among the world's smallest DLP projectors with a brightness of at least 10,000 lumens.