Panasonic Develops the World's Smallest 1080p Plasma Display Panel

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Prototype of 50-inch PDP unveiled at CEATEC JAPAN 2005

Panasonic today announced the company has developed a prototype of a 50-inch plasma display panel (PDP) with 1080p (progressive) resolution. The prototype is the world's smallest PDP that delivers more than two million pixels (1,920 × 1,080) and the same brightness as its current high definition (1,366 × 768) model TH-50PX500.

Panasonic unveiled the prototype at CEATEC JAPAN 2005 at the Makuhari Messe in Chiba Prefecture, east of Tokyo. The exhibition commenced today and will run until October 8.

Superior characteristics of the PDP such as true-to-life color reproduction, dynamic contrast, quick response to moving images and wide viewing angles make it an ideal device for TVs. In the past, technical challenges in securing brightness and stable discharge from tiny pixels prevented manufacturers from obtaining 1080p resolution for 50-inch and smaller PDPs.

A plasma screen consists of millions of pixels. Each pixel is made up of three different cells or sub-pixels, one for each color, red, green and blue. When charged with electrical voltage, each cell produces light independently. By controlling intensity of each sub-pixel color, hundreds of thousands of colors are created, expressing subtle nuances.

Panasonic has overcome the technical hurdles. The 50-inch 1080p PDP offers the same high aperture ratio and brightness as the current 50-inch HD model. To achieve the high aperture ratio and high-speed pixel drive, the company used its own technologies developed for the 65-inch 1080p PDP. Panasonic also established technologies to make ribs (a "rib" divides each gas cell and prevents interference between adjacent cells to produce clear images) thinner and phosphors tinier. The prototype displayed at CEATEC JAPAN 2005 incorporates a new drive circuit that enables stable light emission. These technologies will enable Panasonic to offer PDPs in many popular-sized large-screen flat-panel TVs without compromising accurate and high-quality images that only PDPs can deliver.

Most of the current terrestrial digital broadcasts in Japan are 1080i (interlaced, 1,440 × 1,080) resolution. As some of these broadcasts are converted from standard definition (720 × 480), the current HD panels are more than capable of reproducing those signals. As digital HD broadcasting services are spreading and improving in the world, higher quality images, exceeding the current HD broadcasts, are expected to air in the near future.

Anticipating the future progress and increasing demand for such HD content, Panasonic has pursued development of 1080p-capable PDPs and succeeded in commercially producing the 65-inch 1080p PDP TV (TH-65PX500). The model will be available in Japan from November 1, 2005.

Source: Panasonic