

Sharp Free-Form Display to free up display designs

June 18 2014, by Nancy Owano



Sharp announced Wednesday that it has developed the Free-Form Display, which can free up new display designs for varied applications. Sharp released an illustration with its announcement showing an in-vehicle instrument panel that combines a speedometer and other monitors. The announcement said other display possibilities include wearable devices with elliptical displays, digital signage and other large

monitors. Sharp has been providing manufacturers with displays that carry features in demand: slim profiles, light weight and thin bezels. Continuing on a wave of newer innovations," the Free-Form Display can advance a wider range of shapes. Sharp's two keys to this technology are the incorporation of IGZO technology (IGZO stands for indium gallium zinc oxide), a semiconducting material, and proprietary circuit design methods. IGZO is a compound semiconductor.

According to Sharp "With electron mobility 20 to 50 times faster than that of amorphous silicon, what to date was impossible is now a reality in the form of revolutionary [display](#) possibilities." As for battery life Sharp said IGZO contributes to the dramatic leap in the energy efficiency of digital devices, resulting in substantially longer battery life for mobile users. When displaying still images, it achieves significant power savings by pausing the driving signals to maintain the same image.

The Free-Form Display announcement was received Wednesday as noteworthy for what it might mean to the electronics industry and mobile device marketplace, from in-vehicle instrumentation to big screens to wearables. The Verge said the screen could "radically change" the shape of our future electronics, as well as making it easier to come up with far more unique designs than was [possible](#). Similarly, The Next Web said the Free Form Display could help lift consumer technology devices out of "the rigid convention of using rectangular and square shaped [screens](#)."

The company announcement discussed why the Free-Form development changes options: "Conventional displays are rectangular because they require a minimal width for the bezel in order to accommodate the drive circuit, called the gate driver, around the perimeter of the screen's display area. With the Free-Form Display, the gate driver's function is dispersed throughout the pixels on the display area. This allows the bezel to be shrunk considerably, and it gives the freedom to design the LCD to match whatever shape the display area of the screen needs to be."



Free-Form Display (Prototype)

Sharp said it plans to enter the mass-production stage for the Free-Form Display "at the earliest possible date."

More information: Press release: sharp-world.com/corporate/news/140618.html

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