

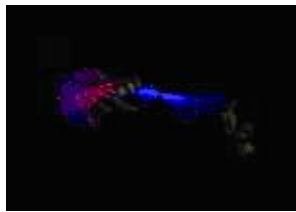
3D Displays: Tease the eyes, fool the brain

Julien Happich

Our visual perception in 3D comes from our capability to combine slightly offset perspective views from each of our eyes, into one three-dimensional picture. Until recently, virtual 3D imaging was only achieved using special goggles, controlling each eye's image input, based on the filtering or synchronisation of display information. But the future may well belong to auto-stereoscopic displays, requiring no special accessories while offering the same 3D impression to multiple viewers.

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Holografika...



The Hungarian firm Holografika E.C markets the HoloVizio 128w, a 32" display featuring 10 million pixels, 24-bit colour resolution and a 50Hz refresh rate. The HoloVizio technology is based on hologram optical geometry principles. Thanks to a specially arranged array counting many spatial light modulators and optical mirrors, each volumetric pixel of the holographic screen is able to emit up to 60 light beams of different colour and intensity in a 50° angular viewing zone, corresponding to a real object perception as the viewers move in front of the screen. Proper software control makes the light beams leaving the various pixels to propagate in multiple directions, as if they were emitted from a common object

point behind the screen, or the beams can cross each other in front of the screen. In this way, viewers will perceive the points as objects behind the screen or floating in the air in front of the screen, respectively, providing the depth and occlusion effect of holograms, with horizontal-only parallax. The system reconstructs the key elements of spatial vision, similarly to holographic stereograms, hence eliminating the need of handling enormous amounts of redundant information associated with purely holographic systems (that typically compute light interference fringe and diffraction patterns from 3D ray tracing).