

# 3D display-on-mobile becomes reality

September 13 2005

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3D displays on mobile phones are set to become a reality with the development by Philips 3D Solutions of the IC3D display signal processing chip. 3D display on mobile provides a richer, more exciting, and more entertaining end-user experience. It creates an immediate wow effect, enhancing the user's experience of 3D games, interfaces, video, and photographs - all without the need for special viewing glasses.

The 3D display effect is generated by the combination of a special 3D display and advanced display signal processing. The combination ensures the highest possible picture quality. Philips 3D Solutions has developed multi-view 3D display solutions based on lenticular lens technology, the main element of which is an array of transparent lenses fixed on a standard LCD panel.

Another essential element of a 3D display is the real-time rendering and interweaving of 2D and depth information into a 3D image. Without this display signal processing, a 3D display can show only static, pre-rendered content such as pictures and logos. General-purpose processors cannot perform the complex task of real-time rendering and interweaving. Therefore, Philips 3D Solutions has integrated real-time 3D display signal processing into a programmable hardware engine: the IC3D chip.

The Philips IC3D is a flexible companion chip that provides full control over the quality and depth-effect characteristics of the 3D picture. It is especially suitable for performing pixel-based processing such as 3D rendering and interweaving. It can also be used for color processing,

scaling, and real-time depth calculation for 2D content. With its flexible SIMD architecture, IC3D performs 3D rendering in real time.

The IC3D has been developed with mobile devices in mind. Power consumption and flexibility were challenges that the IC3D overcame. A single interface in 2D-plus-depth format serves the 3D display module. As a result, the IC3D chip allows handset makers to use one type of image content for all their products.

The Philips IC3D display signal processing chip can be integrated into the display module of a handset or in the back end of a handset's application engine. It is also possible to integrate the same functionality as an IP block into a multimedia application engine.

Engineering samples of the IC3D chip will be available later this year. Volume shipments to selected customers will start early next year.

Citation: 3D display-on-mobile becomes reality (2005, September 13) retrieved 20 April 2024 from <https://phys.org/news/2005-09-3d-display-on-mobile-reality.html>

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