

Dialog Semiconductor expands into Ultrabooks™ and all-in-one PCs with a new generation of multi-touch display sensor ICs

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Providing mass market medium and large size displays with highly responsive, low cost multi-touch gesture control, based on FlatFrog's PSD technology

Kirchheim/Teck, Germany 20th March 2013 – [Dialog Semiconductor plc](#) (FWB: [DLG](#)), a provider of highly integrated power management, audio and short range wireless technologies, today announced its move into touchscreen sensors with the launch of the SmartWave™ – part number DA8901 – Multi-Touch Integrated Circuit (MTIC™). The MTIC is the world's first chip to enable FlatFrog's¹ market proven Planar Scatter Detection (PSD) Touch in high volume consumer devices. Using in-lens infrared light, the FlatFrog PSD Touch system can detect and track multiple touches, gestures and pressures from gloved hands, stylus and other objects, providing a more natural true-touch user experience at performance levels surpassing the latest capacitance-based solutions, but at a fraction of the cost.

MTIC is suitable for today's, laptops, All-in-One PCs, Ultrabooks™ and monitors, and is optimized for display types between 11 and 36 inches. It is also designed to meet Microsoft Windows 8 and Intel's Ultrabook™ touch requirements.

Supporting up to 40 simultaneous touches, the MTIC uses the proven principles of FlatFrog's patented Planar Scatter Detection (PSD) Touch technology to detect changes in infrared light injected into the cover lens of the display. As users touch the glass surface, scattered light is detected by multiple infrared receivers. The resulting signals are received by the MTIC where they are amplified and pre-filtered before being converted to the digital domain. The data is then subjected to advanced signal processing using the MTIC's integrated detector engine – based on the ARM® Cortex™ M0 processor – which is then used as a basis to provide the touch co-ordinates to the main device processor.

A single MTIC can drive up to twelve infrared LED/emitter pairs directly. A typical Ultrabook, tablet or All-in-One PC would contain a number of MTICs configured in a master/slave arrangement catering for a flexible number of screen sizes up to 36 inches. PSD Touch works with any display type and with either a glass or plastic cover lens. Unlike projected capacitive (procap) touch technology, which is widely deployed today in smartphones and tablets, the system provides full edge-to-edge industrial design with 100% optical clarity because there are no expensive ITO layers to impede the light from the display reaching the eye. This also means the screen backlight does not need to be driven as hard to achieve the same brightness level, which will result in additional system power savings.

Mark Tyndall, VP Corporate Development and Strategy at Dialog Semiconductor commented, "The DA8901 MTIC promises to be a real game changer, providing uncompromised multi-touch at a price point affordable to mainstream Ultrabooks and a plethora of next generation touch-enabled display products. Unlike competing technologies, system cost scales linearly with screen size, meaning even the lowest priced mainstream All-In-One PCs and monitors can enjoy a premium multi-touch experience".

“We are excited to team with FlatFrog and look forward to continuing this collaboration.” added Tyndall.

Christer Fåhraeus, Co-founder and Chairman at FlatFrog Laboratories added, “Having perfected our technology over a number of years, we are proud to have an innovative company like Dialog bring our PSD technology to the high volume consumer market in such an optimised mixed signal IC and provide the industry with a lower cost alternative to competing touch sensor technologies.”

The DA8901 comes in a 59 pin, 5.7mm x 5.0mm QFN package. Its small footprint and minimal external bill of materials makes it ideal for mounting alongside the LED emitter and receiver components on a very thin low cost printed circuit board located around the edges of the display or mounted under the display to provide a bezel-less design. The low profile means the whole touch system is thinner than the display module meaning it adds no thickness to the end device.

The DA8901 MTIC will be available from Q3 2013.

Editor’s notes:

¹ FlatFrog Laboratories AB is based in Lund, Sweden and was founded in 2007. The company is revolutionizing the touch industry with its patented optical in-glass PSD technology, providing true multi-touch systems that allow a superior user experience. FlatFrog offers a uniquely smooth and precise touch control technology, supporting up to 40 simultaneous touches with pressure detection. Applications include digital signage, automotive, education, gaming and medical displays, as well as consumer electronic. FlatFrog investors include Invus, Sunstone Capital, Intel Capital and Fårö Capital.