

FRAUNHOFER INSTITUTE FOR INTEGRATED CIRCUITS IIS

# PRESS RELEASE

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## Fraunhofer Innovation Enables Cinema-Quality Surround Sound on Google Nexus Devices

### Fraunhofer Cingo brings unrivaled surround sound experience to Nexus 7 and Nexus 10 users

Theater quality surround sound in the palm of your hand is now a reality for Nexus 7 and Nexus 10 users thanks to Fraunhofer Cingo, the newest innovation from the world renowned experts in audio and multimedia technologies. Fraunhofer IIS developed Cingo to achieve significantly enhanced playback of stereo and surround sound on mobile devices. With Cingo, built-in stereo speakers or headphones will deliver the high-quality surround sound consumers have come to expect from their home theater systems. The first device to natively integrate Cingo is Nexus 7, announced earlier today at the Google press event. For the Nexus 10, Fraunhofer Cingo will be available through a software update.

Cingo dramatically improves the entertainment experience on mobile devices. It allows for a complete immersion into a film's sound in the same way that multi-channel audio systems do in cinemas. Furthermore, Cingo delivers natural and clear sound even in the noisiest environments.

"Owners of the Nexus 7 and Nexus 10 will be surprised that this improvement in quality was possible on handheld devices without compromises to the form factor and usability," said Harald Popp, head of the business department at the Audio and Multimedia division of Fraunhofer IIS. "When paired with HD video quality, Cingo transforms mobile devices into personal movie theatres that fit into a pocket."

The efficient delivery of surround sound to mobile devices is made possible by the High Efficiency AAC (HE-AAC) audio codec technology. HE-AAC was co-developed by Fraunhofer IIS and is today's most efficient high-quality surround and stereo audio codec. Android phones and tablets natively support HE-AAC Multichannel and in combination with Cingo, they become true entertainment centers while on the move or at home. To capitalize on the new capability, Google will now offer feature films with surround sound on the Nexus 7 using HE-AAC Multichannel. These titles can be played using Cingo via headphones, internal stereo speakers or with an HDMI output to home theater surround systems.

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Cingo is available from Fraunhofer as a product-ready software implementation for mobile device manufacturers, chip set vendors and providers of multimedia services. Fraunhofer IIS will demonstrate Cingo and HE-AAC on the Nexus 7 and Nexus 10 at IFA, hall 11.1, in Berlin, September 6 -11, and at IBC, booth 8.B80, in Amsterdam, September 13-17.

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For more information about Fraunhofer Cingo, please visit [www.fraunhofer-cingo.com](http://www.fraunhofer-cingo.com).

**About Cingo**

Fraunhofer Cingo creates a realistic surround sound impression when listening to surround content over stereo speakers or headphones. Based on the latest developments in audio technology, Fraunhofer Cingo contains a complete set of tools to deliver an exceptional level of audio quality, unmatched on mobile devices.

With the virtual surround sound mode each audio channel is presented as a virtual sound source in such a way that it is heard from a specific location and distance, for example a loudspeaker of a 5.1 surround setup in a living room. This enables the playback of stereo or surround sound over the built-in speakers or any type of headphones with an authentic surround effect.

The loudness optimization feature of Cingo delivers a natural and clear sound even in the most challenging situations. Together with the equalizing algorithm, which compensates for the common audio quality deficiencies often encountered with smartphones and tablets, Fraunhofer Cingo ensures significantly improved audio quality in any listening situation.

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**About Fraunhofer IIS**

The Fraunhofer IIS Audio and Multimedia division, based in Erlangen, Germany, has been working in compressed audio technology for more than 25 years and remains a leading innovator of technologies for cutting-edge multimedia systems. Fraunhofer IIS is universally credited with the development of mp3 and co-development of the AAC (Advanced Audio Coding) as well as technologies for the media world of tomorrow, including Fraunhofer Cingo for virtual surround, Fraunhofer Symphoria for automotive 3D audio, AAC-ELD for telephone calls with CD-like audio quality, and Dialog Enhancement to allow TV viewers to adjust dialog loudness as they desire.

Through the course of more than two decades, Fraunhofer IIS has licensed its audio codec software and application-specific customizations to at least 1,000 companies. Fraunhofer estimates that it has enabled more than 5 billion commercial products worldwide using its mp3, AAC and other media technologies.

The Fraunhofer IIS organization is part of Fraunhofer-Gesellschaft, based in Munich, Germany. Fraunhofer-Gesellschaft is Europe's largest applied research organization and is partly funded by the German government. With 22,000 employees worldwide, Fraunhofer-Gesellschaft is composed of 66 Institutes conducting research in a broad range of research areas.

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