

# PRESS RELEASE

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## LC3plus certified for the Hi-Res Audio Wireless Logo

Erlangen, Germany: Fraunhofer Institute for Integrated Circuits IIS is proud to announce that the LC3plus codec has received the highly valued Hi-Res Audio Wireless certification issued by the Japanese Audio Society.

The Hi-Res Audio Wireless logo issued by the Japanese Audio Society (JAS) is an internationally recognized seal of quality. Products that receive the certification meet strict technical requirements. They guarantee that sound is reproduced as accurately as possible, even when listening over a wireless connection like Bluetooth. Only devices that rely on suitable codecs ensuring the exact transport of audio meet the demanding standards of the Hi-Res Audio Wireless logo. This makes it a certificate highly valued by wireless headphone and loudspeaker manufacturers as well as by discerning users.

The LC3plus codec was developed as an open standard and is published as ETSI TS 103 634. It features a dedicated High-Resolution mode, which provides best-in-class Signal to Noise Ratio (SNR) and Total Harmonic Distortion plus Noise (THD+N) performance. The codec operates in its sweet spot between 125 and 250 kbps per channel while allowing seamless bitrate adaptation up to 500 kbps per channel. Other solutions require at least twice the bitrate of LC3plus High-Resolution to achieve a similar performance. This does not only mean a noticeably lower energy consumption, but also that LC3plus makes products very robust and less prone to errors that can occur in wireless environments. In environments with a high density of Bluetooth devices, for example in a crowded subway, the codec can be operated in a fallback mode at bitrates down to 64 kbps per channel while maintaining very high audio quality. The reduced bitrate makes packet losses less likely, which ensures an uninterrupted connection.

Following an extensive objective and subjective testing process, the Japanese Audio Society recently certified LC3plus High-Resolution and included it in the list of certified codecs. This shows that LC3plus High-Resolution meets the criteria set by JAS, in particular the support of a 96 kHz sampling rate, at least 24 bits per audio sample, and the ability to reproduce frequencies of 40 kHz and above.

Implementing LC3plus High-Resolution as the codec of choice for wireless transmission opens the door for device manufacturers to receiving the valuable logo from the Japanese Audio Society. The Fraunhofer IIS technology combines best-in-class performance at extremely low energy consumption with the benefits of an open audio standard.

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**Head of Corporate Communications**

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**Editorial notes**

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FRAUNHOFER INSTITUTE FOR INTEGRATED CIRCUITS IIS

“We are happy that LC3plus is certified for the Hi-Res Audio Wireless logo by the Japanese Audio Society,” says Manfred Lutzky, Head of Audio for Communications at Fraunhofer IIS. “True wireless stereo earbuds that can now be marked with the Hi-Res Audio Wireless logo are perfectly adapted to the use in Bluetooth LE Audio thanks to the low bitrates of LC3plus.”

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**Left: Fraunhofer's LC3plus trademark logo. © Fraunhofer IIS Right: Hi-Res Audio Wireless Logo of JAS © Japanese Audio Society | Picture in color and print quality: [www.iis.fraunhofer.de/en/pr](http://www.iis.fraunhofer.de/en/pr)**

The **Fraunhofer-Gesellschaft**, headquartered in Germany, is the world's leading applied research organization. Its research activities are conducted by 76 institutes and research units at locations throughout Germany. The Fraunhofer-Gesellschaft employs a staff of more than 30,000, who work with an annual research budget totaling more than 2.9 billion euros.

The **Fraunhofer Institute for Integrated Circuits IIS**, headquartered in Erlangen, Germany, conducts world-class research on microelectronic and IT system solutions and services. Today, it is the largest institute of the Fraunhofer-Gesellschaft. Research at Fraunhofer IIS revolves around two guiding topics:

For over 30 years, the institute's **Audio and Media Technologies division** has been shaping the globally deployed standards and technologies in the fields of audio and moving picture production. Starting with the creation of mp3 and continuing with the co-development of AAC and the Digital Cinema Initiative test plan, almost all consumer electronic devices, computers and mobile phones are equipped with systems and technologies from Erlangen today. Meanwhile, a new generation of best-in-class media technologies – such as MPEG-H Audio, xHE-AAC, EVS, LC3/LC3plus, Symphoria, Sonamic and upHear – is elevating the user experience to new heights. Always taking into account the demands of the market, Fraunhofer IIS develops technology that makes memorable moments.

More than 1100 employees conduct contract research for industry, the service sector and public authorities. Founded in 1985 in Erlangen, Fraunhofer IIS has now 14 locations in 10 cities: Erlangen (headquarters), Nuremberg, Fürth, Dresden, further in Ilmenau, Bamberg, Waischenfeld, Würzburg, Deggendorf and Passau. 75 percent of the budget of 191 million euros a year is financed by contract research projects. Approximately 25 percent is subsidized by federal and state funds as well as internal projects of the Fraunhofer-Gesellschaft. Detailed information on: [www.iis.fraunhofer.de/en](http://www.iis.fraunhofer.de/en)