

PRESS RELEASE

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Fraunhofer's mioty-LPWAN and IoT technology protocol integrated in the latest Silicon Labs Series 2 sub-GHZ SoC platform, EFR32FG23

Erlangen, Germany/Austin (TX), USA: The standardized Fraunhofer mioty protocol stack for Low Power Wide Area Networks (LPWAN) and IoT applications is implemented and tested in the newly introduced wireless bidirectional sub-GHZ SoC (System on Chip) Series 2 platform EFR32FG23 (FG23) from Silicon Labs. The single-die, multi-core solution presents extremely low transmit and receive radio power together with robust RF performance and deep indoor penetration.

The bidirectional chip enhances the efficiency and performance of a wide range of IoT applications. New functions such as configuration of device settings and message acknowledgements optimize processes in Building management, Smart City applications, and Industrial IoT implementations. The mioty protocol provides robustness based on its telegram splitting and energy-efficient communication. Mioty can be used in parallel to any other communication technology thanks to its interference-resistance.

The more IoT applications there are in the field, the higher the requirements for wireless connectivity. That means high ranges, high numbers of sensors for 'massive IoT', low energy consumption, reliable and robust transmission, even in challenging wireless environments. This is solved by the next generation IoT standard mioty and its Telegram splitting. Mioty as a software solution is now also available in the latest SoC from Silicon Labs.

Compelling results

First test measurements for real IoT applications demonstrate an extremely high receiver sensitivity especially for the downlink of the chipset. Compared to the predecessor chip EFR32FG14, a significant increase in sensitivity is achieved. Likewise, the transmit current is exceptionally very low: For a downlink receive sensitivity the FG23 implementations provide 5 dB more sensitivity compared to the predecessor chip, and it goes along with a reduction of the transmit current@14 dBm @3.3V of 30% less current draw. That will underline that with the mioty integration a powerful SoC technology can moreover be maxed out.

Head of Corporate Communications

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FRAUNHOFER INSTITUTE FOR INTEGRATED CIRCUITS IIS

"Due to the extremely high sensitivity, up to 80% more range is possible in Line-of-Sight conditions. Even remote sensors or actuators e.g. in basements or deep indoor applications can now be reached," explains Günter Rohmer, Head of the Fraunhofer IIS research division Positioning and Networks. "The low power consumption of mioty in a SoC solution also enables battery lifetimes of more than 10 years or reliable operation from energy harvesting".

For Silicon Labs, a member of the mioty alliance, the technological leap in their sub-GHz solutions naturally opens up new possibilities for IoT applications.

"The combination of mioty and our wireless hardware will enable high-performance and secure connectivity for IoT devices. The very compelling test results by Fraunhofer IIS, verifies how our FG23 platform enables IoT end nodes to achieve 1+ mile wireless range while operating on a coin cell battery for 10+ years," said Ross Sabolcik, VP/GM of Industrial & Commercial IoT Products, Silicon Labs. "Low-power, long range, and security are fundamental requirements in the rapidly expanding IoT deployments of Industrial IoT (IIoT), Smart Cities, and Smart Buildings."

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IN COOPERATION WITH



Fraunhofer's mioty - LPWAN and IoT technology protocol integrated in the latest Silicon Labs Series 2 sub-GHz SoC platform. © Fraunhofer IIS/Lisa Gauthier | Picture in color and print quality: www.iis.fraunhofer.de/en/pr

More information about mioty: <https://www.iis.fraunhofer.de/mioty>

More information about the SOC platform:
<https://www.silabs.com/wireless/proprietary/efr32fg23-sub-ghz-wireless-soc?source=Partner&detail=Mioty&cid=nat-new-prp-111821>

About Silicon Labs

Silicon Labs (NASDAQ: SLAB) is a leader in secure, intelligent wireless technology for a more connected world. The integrated hardware and software platform, intuitive development tools, unmatched ecosystem and robust support make us an ideal long-term partner in building advanced industrial, commercial, home and life applications. We make it easy for developers to solve complex wireless challenges throughout the product lifecycle and get to market quickly with innovative solutions that transform industries, grow economies, and improve lives. Visit [Silabs.com](https://www.silabs.com)

About the mioty standard

The ETSI-standardized (ETSI TS 103 357) miniaturized IoT technology mioty developed by Fraunhofer IIS sets new standards in the field of wireless data transmission in terms of cost efficiency, range, transmission reliability and battery life. The solution approach is an asymmetric transmission method with many simple sensor nodes as well as a complex receiver. The robust data transmission of around one million transmitters can be ensured with just one receiver. Mioty achieves ranges of several kilometers and is characterized by its energy efficiency.

The Fraunhofer-Gesellschaft, headquartered in Germany, is the world's leading applied research organization. Its research activities are conducted by 75 institutes and research units at locations throughout Germany. The Fraunhofer-Gesellschaft employs a staff of 29,000, who work with an annual research budget totaling more than 2.8 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:

In the area of **"Audio and Media Technologies"**, the institute has been shaping the digitalization of media for more than 30 years now.

Fraunhofer IIS was instrumental in the development of mp3 and AAC and played a significant role in the digitalization of the cinema. Current developments are opening up whole new sound worlds and are being used in virtual reality, automotive sound systems, mobile telephony, streaming and broadcasting.

In the context of **"cognitive sensor technologies"**, the institute researches technologies for sensor technology, data transmission technology, data analysis methods and the exploitation of data as part of data-driven services and their accompanying business models. This adds a cognitive component to the function of the conventional "smart" sensor.

More than 1100 employees conduct contract research for industry, the service sector and public authorities. Founded in 1985 in Erlangen, Fraunhofer IIS has now 16 locations in 12 cities: Erlangen (headquarters), Nuremberg, Fürth, Dresden, further in Ilmenau, Munich, Bamberg, Waischenfeld, Coburg, Würzburg, Deggendorf and Passau. The budget of 167.9 million euros is mainly financed by projects. 29 percent of the budget is subsidized by federal and state funds.

Detailed information on: www.iis.fraunhofer.de/en
