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STMicroelectronics propels new era of ultra-wideband technology for automotive and smart device applications

- *Introducing the ST64UWB family: the first fully integrated ultra-wideband (UWB) solution supporting IEEE 802.15.4z and upcoming IEEE 802.15.4ab UWB standard with multi-millisecond ranging (MMS) including narrow-band assistance radio (NBA)*
- *ST64UWB family delivers industry-leading RF performance leveraging ST's 18 nm FD-SOI technology*
- *Best-in-class performance enables new use cases and enhances user experience for automotive, smart home and smart building applications*

Geneva, March 10, 2026 -- STMicroelectronics (NYSE: STM), a global semiconductor leader serving customers across the spectrum of electronics applications, introduces an ultra-wideband (UWB) chip family that comprehensively supports the next-generation wireless standard for localizing and tracking devices at distances up to several hundred meters. This [UWB chip family](#) combines extended range with greater processing power and robustness to enable new and improved automotive, consumer, and industrial use cases, including secure digital access control, presence and motion sensing, and precise approach detection.

“The ST64UWB family we announce today is an industry-first system-on-chip supporting the latest ultra-wideband specification, IEEE 802.15.4ab including narrow-band assistance radio, with ultra-precise ranging and sensing,” said Rias Al-Kadi, General Manager, Ranging and Connectivity Division, STMicroelectronics. *“These chips are tailored for automotive, consumer, and industrial applications, providing innovators with a powerful platform for the next wave of ultra-wideband use cases.”*

The emerging standard builds on the IEEE 802.15.4z UWB wireless technology in today's hands-free digital car keys that unlock a vehicle on approach. New technical enhancements enabled by multi-millisecond ranging (MMS) and narrowband assistance (NBA) extend operating range, strengthen connections with devices carried in bags or rear pockets, and enable direction finding at close range to better interpret user intent. [IEEE 802.15.4ab](#) also enhances radar mode, improving use cases such as child presence detection (CPD) in vehicles, a potentially life-saving feature recommended by Euro-NCAP, the independent vehicle safety assessment organization.

The devices are now sampling to major Tier 1s and original equipment manufacturers.

Why IEEE 802.15.4ab and ST64UWB matter

“IEEE 802.15.4ab is set to become the backbone of next-generation ultra-wideband,” said Andrew Zignani, Senior Research Director at ABI Research. *“By 2030, we expect the vast majority of ultra-wideband equipped vehicles to migrate to this new standard, leveraging a rapidly growing installed base of hundreds of millions of compatible smartphones. Meanwhile, backward compatibility with IEEE 802.15.4z allows the industry to adopt these enhancements quickly without disrupting existing deployments, while enabling valuable new user experiences and services across multiple end markets.”*

“IEEE 802.15.4ab is the foundation for enabling a new generation of key fobs as part of a digital key system,” said Daniel Siekmann, Head of Car Access HW D&D Team, Forvia Hella. *“It offers more than eight times the range of 802.15.4z and significantly better non-line-of-sight performance, which allows for key fob functionality to reliably perform from a back-pocket or inside a bag. With backward compatibility to 802.15.4z, it provides a practical path to replace legacy HF/LF key fobs with a modern ultra-wideband based architecture, a transition that is further enabled by STMicroelectronics’ new ST64UWB chips.”*

“By adopting 802.15.4ab, car access systems can simultaneously improve performance, cost efficiency, and robustness. The more than eightfold increase in range effectively mitigates back-pocket and other obstructed-signal conditions. At the same time, backward compatibility with 802.15.4z gives OEMs like LGIT the flexibility to either enhance reliability using their existing fixed reference points or reduce the number of reference points to lower overall system cost,” said William Jung, Team Leader, LG Innotek.

“With IEEE 802.15.4ab, the ability to drastically increase UWB performance, especially when the smartphone is left in the rear pocket, is highly appreciated,” said Bernd Bär, Expert Product Line Technology, Marquardt. *“At the same time, operating within tight global homologation limits while remaining backward compatible with existing IEEE 802.15.4z ecosystems tremendously extends the applicability of UWB systems.”*

“Over the last decade, Nuki has helped establish and shape the smart lock category in Europe. We firmly believe Ultra-Wideband is a transformative technology for precise, hands-free unlocking,” said Jürgen Pansi, Chief Innovation Officer, Nuki Home Solutions. *“Together with STMicroelectronics and their ST64UWB solution, we are showcasing how the IEEE 802.15.4ab standard can bring the power of Aliro and UWB to our region.”*

Further information for editors

The three SoCs introduced today (ST64UWB-A100, ST64UWB-A500, and ST64UWB-C100) are built on 18 nm FD-SOI process that boosts link budget by nearly 3dB versus standard bulk technologies, extending range by roughly 50% beyond the gains already delivered by the IEEE 802.15.4ab standard.

The ST64UWB-A series, designed for automotive applications and starting with the ST64UWB-A100 for use cases such as digital key and precise vehicle localization,

features an Arm® Cortex®-M85 core and supports ASIL A(B) automotive safety concept. The ST64UWB-A500 adds AI acceleration and digital signal processing to support edge AI-powered radar applications, including child presence detection (CPD), kick sensing, and outward-facing use cases, such as parking sensors and radar-based vehicle-sentinel mode. These radar capabilities benefit from the new 15.4ab Kaiser pulse shape and the upgraded 1.3 GHz bandwidth of UWB channel 11, resulting in twice the accuracy compared to 500 MHz channels.

The ST64UWB-C100, built on an Arm Cortex-M85 core, targets commercial and consumer applications, delivering best-in-class handsfree and tap free user experiences with full Aliro standard compatibility.

ST is accelerating next-generation UWB adoption with comprehensive development kit including UWB stack (PHY/MAC), radar toolbox, development boards, reference design for antennas, and application examples for both automotive and consumer markets.

Find out more on product specification and 802.15.4ab technology at www.st.com/uwb

About STMicroelectronics

At ST, we are 48,000 creators and makers of semiconductor technologies mastering the semiconductor supply chain with state-of-the-art manufacturing facilities. An integrated device manufacturer, we work with more than 200,000 customers and thousands of partners to design and build products, solutions, and ecosystems that address their challenges and opportunities, and the need to support a more sustainable world. Our technologies enable smarter mobility, more efficient power and energy management, and the wide-scale deployment of cloud-connected autonomous things. We are on track to be carbon neutral in all direct and indirect emissions (scopes 1 and 2), product transportation, business travel, and employee commuting emissions (our scope 3 focus), and to achieve our 100% renewable electricity sourcing goal by the end of 2027. Further information can be found at www.st.com

MEDIA RELATIONS

Alexis Breton

Corporate External Communications

Tel: + 33 6 59 16 79 08

alexis.breton@st.com

INVESTOR RELATIONS

Jérôme Ramel

EVP Corporate Development & Integrated External Communication

Tel: +41 22 929 59 20

jerome.ramel@st.com