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STMicroelectronics reveals high-performance, state-of-the-art wireless microcontrollers ready for incoming cyber-protection regulations

Highly integrated chips support multiple wireless technologies and latest security standards, perfectly addressing requirements for smart industrial, medical, and consumer devices

Geneva, Switzerland, March 5, 2024 – STMicroelectronics (NYSE: STM), a global semiconductor leader serving customers across the spectrum of electronics applications, has revealed the next generation of its short-range wireless microcontrollers. These innovative, all-in-one components enable wearables and smart objects including smart home devices, health monitors, and smart appliances to become ever more miniaturized, easy to use, secure and affordable.

Short-range wireless technologies like Bluetooth® LE, Zigbee® and Thread (popular in smart meters and smart buildings) are the fabric connecting smart devices to home bridges, gateways, and controllers including smartphones. As we all seek solutions for making life more economical, sustainable, and comfortable, vendors are looking to bring creative and high-performing new solutions to market more quickly, within tight cost constraints. They need to be stylish, too: tiny, low-profile, or even embedded out of sight in other equipment, such as in smart bulbs. Going wireless is a part of this trend, for freedom, flexibility, and fashion.

Wireless microcontrollers like ST's new STM32WBA5 product line allow a one-chip solution that's extremely compact, reduces the bill of materials, and shortens the time to market by relieving wireless design challenges. Also, being compatible with the development tools and software packs of the STM32 microcontroller development ecosystem, the new line simplifies migrating existing products designed for wired connections.

Commented [PD1]: Trying not to be too harsh about horrible old wires, as we still have lots of products that support wired connections

The new series' flagship STM32WBA55 microcontroller can communicate using multiple wireless standards concurrently, including low-energy Bluetooth LE 5.4, Zigbee, Thread, and Matter (Thread RCP). Matter border router is a perfect match with the STM32WBA5 for this new open-source connectivity standard for smart-home and IoT (Internet of Things) devices. In this way, the STM32WBA55 supports a great user experience while simplifying hardware and software engineers' development journey, aiding affordability and time to market for the new product.

With this new generation, ST has also introduced support for the recently completed Bluetooth LE Audio specifications that enable exciting and innovative new products for richer listening and hearing experiences. These include the new Bluetooth Auracast™ feature, which opens the door to a new world of audio broadcasting applications.

"*Lead customers are already appreciating the enhanced wireless performance, flexibility, and security of our latest STM32WBA wireless microcontrollers. They are creating diverse products including smart thermostats, tracking devices, smart chargers, headsets, power tools, and smart meters*," said Benoit Rodrigues, Wireless MCU Division General Manager, STMicroelectronics. "*The extensive software ecosystem that provides communication stacks, microcontroller-specific software packs, sample code, and tools helps developers bring new products to market based on these MCUs quickly and efficiently.*"

The STM32WBA series is the first wireless MCU in the market to achieve the important SESIP (Security Evaluation Standard for IoT Platforms) Level 3 security certification. With this, smart devices containing STM32WBA microcontrollers are ready to satisfy the US Cyber Trust Mark and EU Radio Equipment Directive (RED) regulations due to become mandatory in 2025.

"We work with smart asset tracking devices which are connected through Bluetooth to mobiles and through mobile apps to the cloud, enabling us to deliver complete asset tracking management for our customers. ST's microcontrollers bring wireless connectivity to our multi-mode trackers," said Olivier Hersent, CEO, Abeeway (Actility Group). *"We have selected the new wireless connectivity product, STM32WBA5, for its enhanced performance with ultra-low power radio capabilities, which is key for our battery powered devices. They ensure stable connectivity in the harsh industrial environment where we operate, combined with security that meets the highest industry standards."*

"We believe that gaming peripherals should be as unique and accessible as the gaming community itself," said Tom Roberts, CTO, Performance Designed Products (PDP). *"ST and PDP have worked together through several Video Game generations, and we have used STM8 and STM32 devices for many years. ST products consistently provide the features we need in our highly competitive market segment. We recently selected ST's short-range wireless connectivity product, the STM32WBA5, based on the integrated MCU and Bluetooth low-energy technology, as the right solution for a new, groundbreaking game controller. The STM32WBA offered us an ideal combination of performance, peripherals, cost efficiency and ecosystem support that enabled simple and fast development."*

The new STM32WBA5 product line will be available on st.com on March 12. Sample requests and pricing information are available from local ST sales offices. ST will introduce a ready-to-use module containing the STM32WBA, integrated with necessary external components including power-supply and antenna-balancing circuitry, in June 2024.

Technical Notes to Editors:
The new wireless microcontrollers (MCUs) introduced today, the STM32WBA54 and STM32WBA55, contain a 100MHz Arm® Cortex®-M33 core that brings latest-generation performance and Arm TrustZone architecture isolating secure processes and storage. With up to 1MB of Flash memory, they provide generous code and data storage. They also have inherently low power consumption, incorporating background autonomous mode, flexible power-saving states, and analog and digital peripherals proven in ST's STM32U5 ultra-low-power MCUs.

ST's latest 2.4GHz radio, integrated alongside the MCU, is the first to let the application control the RF output power. The adjustment range allows up to +10dB to ensure reliable wireless connections even in difficult operating conditions.

The new wireless MCUs also support the latest Zigbee standards including Release 22 and Release 23, which significantly extends the Zigbee core stack for greater security, reliability, and usability.

By supporting LE Audio, designed for the Bluetooth Low Energy radio, the STM32WBA series enhances flexibility to optimize audio quality and power consumption. Moreover, the latest use

cases coming with LE Audio expand opportunities to create imaginative new products leveraging capabilities such as broadcast and multicast audio.

The new MCUs are fully supported in the STM32 ecosystem, with dedicated software packages and tools for configuring the hardware and testing the wireless performance, as well as evaluation kits and rich online support. These include wireless protocol stacks and code examples, prototype boards and expansion cards, a developer's wiki, and more online including ST's STM32 github repository and the STM32 developer community.

For more information, please go to www.st.com/stm32wba

About STMicroelectronics

At ST, we are over 50,000 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 committed to achieving our goal to become carbon neutral on scope 1 and 2 and partially scope 3 by 2027. Further information can be found at www.st.com.

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