



Press release
Communiqué de presse
Comunicato stampa
新聞稿 / 新聞稿
プレスリリース
보도자료

P4519S

New STM32H5 MCU series from STMicroelectronics boosts performance and security for next-generation smart applications

- Features Arm's Cortex-M33 embedded microcontroller core running at 250MHz
- Contains STM32Trust TEE Secure Manager that makes stronger security simpler

Geneva, Switzerland, March 7, 2023 – STMicroelectronics (NYSE: STM), a global semiconductor leader serving customers across the spectrum of electronics applications, has introduced its new performance-oriented STM32H5 microcontroller (MCU) series with cutting-edge security provided by STM32Trust TEE Security Manager for smart, connected devices.

The new [STM32H5 MCUs](#) contain the embedded core from Arm®, the Cortex®-M33, which blends high performance with security, energy efficiency, and affordability, to best address the mid-range class of MCU-based applications. Indeed, it's the world's highest performing Cortex-M33 implementation, running at 250MHz and 375 DMIPS for an EEMBC CoreMark® industry-reference score of 1023.

The STM32H5 series is designed to accelerate innovation at scale for the coming generations of smart, connected devices, which provide more intelligence “in the edge” and also strengthens defenses against attacks on IoT assets. The Cortex-M33 core brings Arm's TrustZone® architecture. Building on this, ST adds a range of its own security features, including some developed with ST Authorized Partner, [ProvenRun](#).

The STM32H5 is the first MCU series to come with system-on-chip (SoC) security services accessed via an industry-standard API. This facility, called STM32Trust TEE Secure Manager, saves developers writing their own code while providing security services developed according to known best practice. It simplifies development while ensuring effective protection.

“Our connected world is ready for the enhancements coming with the STM32H5 series, to support advanced services while keeping users, assets, and data secure,” said Ricardo De Sa Earp, Executive Vice President General-Purpose Microcontroller Sub-Group, Microcontrollers and Digital ICs Group. *“We expect these new MCUs to become the preferred controllers making tomorrow's smart homes, factories, and cities intelligent, safe, and sustainable.”*

Challenging the perception that increased performance comes with power dissipation constraints for developers, the STM32H5 MCUs also improve energy efficiency by leveraging ST's advanced 40nm CMOS process technology and improved on-chip power-conversion circuits. With these MCUs, power dissipation is no longer a constraint when using a 250MHz device in harsh environments where the ambient temperature can reach 125°C. In addition, STM32H5 MCUs are SIL-ready for products that must meet an appropriate safety integrity level (SIL), thanks to native hardware features that address a wide range of industrial and medical applications.

Typical applications for the new MCUs include air conditioning systems, appliances, and alarm systems, industrial programmable logic controllers (PLCs), motor controls, industrial pumps, communication gateways, lighting controls, and energy conversion. They are also used in consumer products such as PC peripherals, smartphones, and accessories.

Further technical information:

ST has worked with highly regarded technology companies to achieve the significant improvements in performance and security now available with the STM32H5 series. The Company has been a lead development partner with Arm, supporting development of the Cortex-M33 core to comply with the PSA Certified Level 3 and GlobalPlatform SESIP3 security specifications. In addition, ST has collaborated with Microsoft Azure on middleware with strong security.

The STM32Trust TEE Secure Manager is developed with ProvenRun and powered by ProvenCore-M to ensure today's highest security-assurance levels. The SoC security services provided include isolation, cryptography, key storage, and initial attestation. To help users maximize its potential, ST has created dedicated development kits [NUCLEO-H503RB](#) for \$15, [NUCLEO-H563ZI](#) for \$29, and [STM32H573I-DK](#) for \$99 with examples showing how to use the security services and integrated all the necessary software tools and support in the [STM32Cube development ecosystem](#).

The new devices also provide in-ST factory pre-provisioning credentials for seamless registration to various cloud and OEM servers, multi-tenant IP protection, and remote pre-integrated 3rd party public key infrastructure (PKI) lifecycle management.

In addition, the [Kudelski IoT keySTREAM™](#) root of trust, from ST Authorized Partner Kudelski IoT, was pre-qualified on the STM32Trust TEE Secure Manager to allow remote credential lifecycle management services.

With its improved power-conversion circuits, the STM32H5 MCUs raise dynamic efficiency to 61µA/MHz in switched mode (SMPS) and 120µA/MHz running off the linear (LDO) converter (at VDD = 3.3V and 25°C) in Run mode with peripherals off. Consistent with other STM32 MCUs, ST's advanced peripherals are engineered for maximum efficiency, while precision power management lets developers optimize performance versus power consumption in all operating modes.

The product lines initially available include the STM32H503 product line with 128KB Flash, allowing 250MHz computing capability in space- and cost-constrained applications. Also, the STM32H562 and STM32H563 product lines have up to 2MB Flash, rich connectivity, and deliver 250MHz over the extended temperature range up to 125°C. The STM32H573 includes AES cryptographic acceleration and security services.

Prices at 10,000 units for the new MCUs start at \$1.44 with 128KB Flash in UFQFPN32 package. Devices with 2MB Flash size are priced-from \$2.93. Mass production is beginning now, starting with the STM32H503 and STM32H563. The full lineup and package choices will be introduced in June.

For further information please go to www.st.com/stm32h5.

STM32 is a registered and/or unregistered trademark of STMicroelectronics International NV or its affiliates in the EU and/or elsewhere. In particular, STM32 is registered in the US Patent and Trademark Office.

About STMicroelectronics

At ST, we are more than 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 the Internet of Things and connectivity. ST is committed to becoming carbon neutral by 2027. Further information can be found at www.st.com.

For Press Information Contact:

Michael Markowitz
STMicroelectronics
Tel: +1 781 591 0354
Email: michael.markowitz@st.com