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STMicroelectronics powers up the intelligent edge with second-generation STM32 microprocessors, bringing performance boost and industrial resilience

- ❖ *New STM32MP2 MPUs with 64-bit processing and edge AI acceleration*
- ❖ *Built for speed, security, and reliability*
- ❖ *Leverage STM32 ecosystem for rapid development and secure provisioning*

Geneva, Switzerland, March 7, 2024 – STMicroelectronics (NYSE: STM), a global semiconductor leader serving customers across the spectrum of electronics applications, is releasing new devices from the second generation of its industrial microprocessors (MPUs), the STM32MP2 series, to drive future progress in smart factories, smart healthcare, smart buildings, and smart infrastructure.

Digital transformation is happening everywhere, driving improvements including greater business productivity, better healthcare, and enhanced safety and energy management throughout buildings, utilities, and transport networks. Critical enabling technologies include cloud computing, data analytics, artificial intelligence (AI), and the Internet of Things (IoT). ST's new STM32MP2 MPUs will power the next generations of equipment that create the fabric of this evolving digital world. These include industrial controllers and machine-vision systems, scanners, medical wearables, data aggregators, network gateways, smart appliances, and industrial and domestic robots.

“Our embedded MPUs address the trend that’s pushing more workloads and greater demands to smart devices, often deployed at the IoT edge, for faster response and increased efficiency,” said Stephane Henry, General Purpose MPU Division General Manager, STMicroelectronics, STMicroelectronics. *“The new STM32MP2 devices we are announcing today extend the performance trajectory, introducing our most powerful processing engine, now adding edge AI, and supported by the STM32 ecosystem to accelerate product development.”*

Architected for demanding and time-sensitive workloads, AI inferencing, and communication, and featuring state-of-the-art cyber security, the STM32MP2 MPUs are built to withstand up to 10-years' continuous operation.

State-of-the-art security of the new STM32MP2 devices leverages ST's proprietary secure hardware, anti-tamper controls, protected firmware, and secure provisioning, working with Arm®'s TrustZone® architecture, to keep sensitive data and keys secret. Certified to SESIP Level 3, the leading security test methodology for IoT devices and compliance, STM32MP2 MPUs can satisfy forthcoming tougher cyber-protection requirements in key territories worldwide. These include the US CyberTrust mark and stipulations in the EU's Radio Equipment Directive that are due to become mandatory in 2025.

“Together with ST, we tackled the challenge of connecting our devices to the cloud. From opening locks remotely to granting new access rights, our products are shaping the future of access management,” said Marco Temporiti, R&D Software Manager, ISEO. *“Thanks to the STM32MP2 microprocessor with its strong encryption capabilities, we are able to build an industrial-grade gateway with unmatched reliability and security. The seamless integration with Yocto Linux has streamlined our development process, allowing us to innovate with ease. And, ST’s 10-year longevity program also ensures a long product lifecycle at reduced cost, setting a new standard in the industry.”*

“We worked with ST to build a 2-channel network audio adapter, leveraging the STM32MP1 series microprocessors to handle tasks like converting network digital audio signals for transmission and reception. The robust processing power, Ethernet connectivity and adaptable audio output interfaces were key considerations in choosing the STM32MP1 series for integration into our products,” said Yue XIONG, CEO, S-TRACK. *“Now, we’re enthusiastic about the possibilities presented by ST’s latest MPUs, particularly the STM32MP2 series, which deliver improved power efficiency, enabling us to minimize cooling requirements in our enclosed casings. Additionally, the integrated Cortex-M co-processor eliminates the need for a separate microcontroller, and support for Gigabit Ethernet with precision time protocol (PTP) enables accurate data transfer and synchronization among devices. With this advanced technology, our goal is to broaden our product range to include 16-channel offerings.”*

The first STM32MP2 MPUs are scheduled to enter volume production in June 2024. Sample requests and pricing information are available from local ST sales offices.

Technical notes for editors:

These are ST’s first MPUs to contain a 64-bit central processing unit (CPU), the Arm Cortex®-A35, which runs up to 1.5GHz to raise the main processing capability compared to the first-generation STM32MP1 devices.

The CPU is the center of a true heterogeneous processing engine that also contains a Cortex-M33 core. In addition, there is a graphics processor (GPU), neural processor (NPU), and a video processor (VPU). AI workloads can run on the CPU, GPU, or NPU depending on processor loading and application demands, for optimal performance and energy efficiency. In fact, the high efficiency of these MPUs permits system designs to go without active cooling, gaining advantages such as smaller size, silent operation, greater reliability, and reduced power consumption.

The 3D GPU supports up to 1080p displays and the powerful multimedia features also include a full-HD video pipeline with parallel LVDS and DSI interfaces. Together with a MIPI CSI-2 camera interface with ISP, these enhance support for cutting-edge machine-vision applications. There are further powerful industrial interfaces, including up to three Gigabit Ethernet ports with a 2-port switch and support for Ethernet time-sensitive networking (TSN). There are also PCIe Gen2, USB 3.0, and three CAN-FD interfaces that ease integration in a wide variety of communication and control applications.

The devices are fully supported with STM32 development resources that are familiar to engineers working with ST’s STM32 microcontrollers (MCUs) and STM32 microprocessors. The STM32Cube ecosystem provides tools and dedicated MPU software packs including OpenSTLinux and OpenSTDroid for Android support. There are also evaluation boards that provide further help to simplify development and accelerate project completion.

For more information, please go to <https://www.st.com/en/microcontrollers-microprocessors/stm32-arm-cortex-mpus.html>.

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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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