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STMicroelectronics Boosts Performance While Enhancing Ecosystem on STM32 Microprocessors

Geneva, February 25, 2020 – STMicroelectronics (NYSE:STM), a global semiconductor leader serving customers across the spectrum of electronics applications, is expanding its STM32MP1 microprocessor (MPU) offering with the addition of new authorized partners, new software functionalities, and a significant performance bump by increasing the clock speed to 800MHz, maintaining software and pin-to-pin compatibility with the 650MHz devices.

The new STM32MP1 MPUs, now running dual Arm® Cortex®-A7 application processor cores at 800MHz and the Cortex-M4 core at 209MHz, deliver more performance in Voice and Audio Processing, up to HD Video Decoding quality, more powerful AI (Artificial Intelligence) capabilities in Neural-Network and Machine-Learning applications, and better user experience in Android systems. The devices feature compute and 3D graphics accelerators combined with power-efficient real-time control and high feature integration.

"The popular HMI toolkit Qt and its QML-based GUI applications can be deployed on STM32 MCUs as well as on the STM32MP1 platform, thereby drastically reducing development costs while accelerating customer product delivery," said Petteri Holländer, SVP, The Qt Company. *"The scalability provided by both ST & Qt tools suite can easily leverage the resources of the STM32MP1, especially the 3D HW GPU accelerator to optimize a smooth rendering for HMI Industrial / IoT applications."*

Capitalizing on the flexible STM32MP1 architecture, the security has been enhanced to protect the customer's code through features like secure boot by authentication, available One-Time Programmable fuses for customers, and a secure operating system (OP-TEE: Trusted Execution Environment). A complete security toolset including Keys Generator, Signing Tools, STM32CubeProgrammer, and Hardware Security Module (STM32HSM) allows secure provisioning of the customers' secrets into the device.

The OpenSTLinux Distribution as a mainlined open-source Linux with all the essential building blocks for running software on the application-processor cores is now supplemented with Android developer packages and Cloud support to accelerate customer development. ST continues to actively participate in the Linux community with its strong mainlining strategy.

"ST's active participation to the Linux kernel community always impressed us. The simultaneous Linux & STM32MP1 availability made this launch attractive," said Michael Opdenacker, CEO of Bootlin. *"In our opinion, ST understood what the customer's interests are: mainline versions support of open-source projects, freedom to upgrade to newer versions, zero-cost availability of security updates, community support and security of their long-term investments. By sharing the same open-source DNA, Bootlin is proud to be an ST Authorized Partner and to offer to worldwide customers its engineering and training services on this platform."*

On top of the strong software tool offer including STM32CubeMX and STM32CubeProgrammer, the STM32CubeIDE debugger is now available on Cortex M-4 core.

Fast growth in the number of authorized partners greatly expands the customers' capabilities and speeds their development progress using the STM32MP1 series MPUs. In addition to Embedded Software and Software Development tools, partners can contribute expertise in Training and Engineering Services. ST works with multiple System-on-Module makers, including Phytec, when local support and system flexibility is required.

"By using the extensive graphics capabilities and the numerous interface sets of the STM32MP1 growing family, Phytec's phyCORE-STM32MP1 System-on-Module design with industrial-grade peripheral components is the optimal choice for a wide variety of applications requiring HMI needs as well as real-time interaction with other systems," said Yves Astein, Product Manager at Phytec. *"This PhyCore SOM can reduce complexity in any Embedded Design with long-term maintenance strategies while the excellent relationship with ST team allowed to make the SOM available on time to secure customer design."*

ST also works with System-in-Package maker Octavo Systems for space-constrained application designs.

We, at Octavo immediately knew we had to build an STM32MP1 based System-in-Package. It was designed to simplify the adoption of a microprocessor by leveraging

ST's long successful history of Cortex-M devices. Our OSD32MP1 SiP integrates the STM32MP1, STPMIC1, DDR3, Oscillator and Passives into a tiny 18mm x 18mm package, making the use of a microprocessor as easy and familiar as a microcontroller," said Greg Sheridan, VP Strategy at Octavo Systems. *"Combining OSD32MP1 SiP with the support from the ST Authorized Partner program enables customers to quickly develop products leveraging a powerful microprocessor."*

STM32MP1 MPUs are industrial-qualified with a junction temperature from -40°C to 125°C combined with 100% activity rate during 10 years. STM32MP1 part numbers supporting Cortex-A7 at 800MHz are in production now, priced starting at $4.83 for orders of 10,000 pieces. Other pricing options are available.

You can also read our blogpost at https://blog.st.com/mpu-stm32mp1/

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ST is a global semiconductor leader delivering intelligent and energy-efficient products and solutions that power the electronics at the heart of everyday life. ST's products are found everywhere today, and together with our customers, we are enabling smarter driving and smarter factories, cities and homes, along with the next generation of mobile and Internet of Things devices.

By getting more from technology to get more from life, ST stands for life.augmented. In 2019, the Company's net revenues were $9.56 billion, serving more than 100,000 customers worldwide. Further information can be found at www.st.com.

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