

STMicroelectronics launches highly-integrated power-management IC for its latest microprocessors

Optimum, integrated power, with protection, for MPU and peripherals

GENEVA, SWITZERLAND, September 19, 2024 /EINPresswire.com/ -- The [STPMIC25](#) power-management IC for STMicroelectronics' STM32MP2 microprocessors is now available, with 16 channels to supply all the MPU power rails as well as system peripherals in one convenient package. Completing the hardware design requires only a small number of external components to provide filtering and stabilization and the [STEVAL-PMIC25V1](#) evaluation board is available now to start development immediately.

The IC contains seven DC/DC buck converters and eight low-dropout (LDO) regulators, with an additional LDO to provide the reference voltage (Vref) for system DDR3 and DDR4 DRAMs. Among the eight LDOs is a dedicated 3.3V channel to supply USB High-speed and Type-C PHY ICs. There are also general-purpose LDOs that can be assigned to power circuitry such as memory card interfaces and Ethernet ports.

The buck converters are optimized to power the MPU's CPU, core circuitry, GPU, I/O and analog domains, with additional channels for DDR RAM supply and a general-purpose auxiliary output. The converters are designed with fast transient response and low ripple across a wide range of operating conditions, to meet specific demands of the MPU's power domains. All converters use adaptive constant on-time control for high efficiency, with spread-spectrum frequency modulation and phase-shifted switching with an advanced synchronization technique to minimize EMI. In addition, each converter can operate in high-power or low-power mode, controlled by the application software, allowing the host system to enhance energy savings by minimizing converter quiescent currents. All bucks and LDOs can be enabled and disabled independently.

With non-volatile memory (NVM) on-chip and an I2C interface, the STPMIC25 allows flexibility to support a wide range of uses. Settings such as output voltages and power-up and power-down sequencing can be programmed or configured dynamically through software. Safety features including thermal protection and overcurrent protection for each output are built in.

The STPMIC25 is in production now, packaged in a 6.5mm x 6.5mm 56-lead WFQFN just 0.9mm high. Pricing starts from \$3.38 for orders of 1000 pieces and free samples are available from ST

eStore. The STEVAL-PMIC25V1 is available in the eStore or through distributors.

Please visit www.st.com/STPMIC25 for more information.

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