STPMIC1

High-performance power management IC for STM32MP1 MPUs

A fully integrated solution for applications with advanced microprocessor units

The **STPMIC1** stands out as a comprehensive power management integrated circuit (PMIC), engineered for applications that incorporate advanced microprocessors with stringent low power and high-efficiency demands.

This IC is fully programmable and serves as the perfect companion chip for the **STM32MP1** microprocessor units (MPUs) providing a complete power supply solution.

KEY FEATURES & BENEFITS

- Input voltage range from 2.8 to 5.5 V
- 4 adjustable general-purpose LDOs
- 1 LDO for DDR termination (sink-source), bypass mode for low power DDR or as general-purpose LDO
- 1 LDO for USB PHY supply with automatic power source detection
- 1 reference voltage LDO for DDR memory
- 4 adjustable adaptive constant on-time (COT) buck SMPS converters
- 5.2 V / 1.1 A boost DC/DC converter with bypass mode for 5 V input or battery input
- 1 power switch 500 mA USB OTG compliant
- 1 general-purpose 500/1000 mA power switch.
- User programmable non-volatile memory (NVM), enabling scalability to support a wide range of applications
- I²C bus and digital IO control interface

KEY APPLICATIONS

- Power management companion chip for STM32MP1 MPUs
- Industrial applications
- Networking/Telecom infrastructure
- Home/office automation
- Medical monitoring equipment
- Portable devices

STPMIC1 description

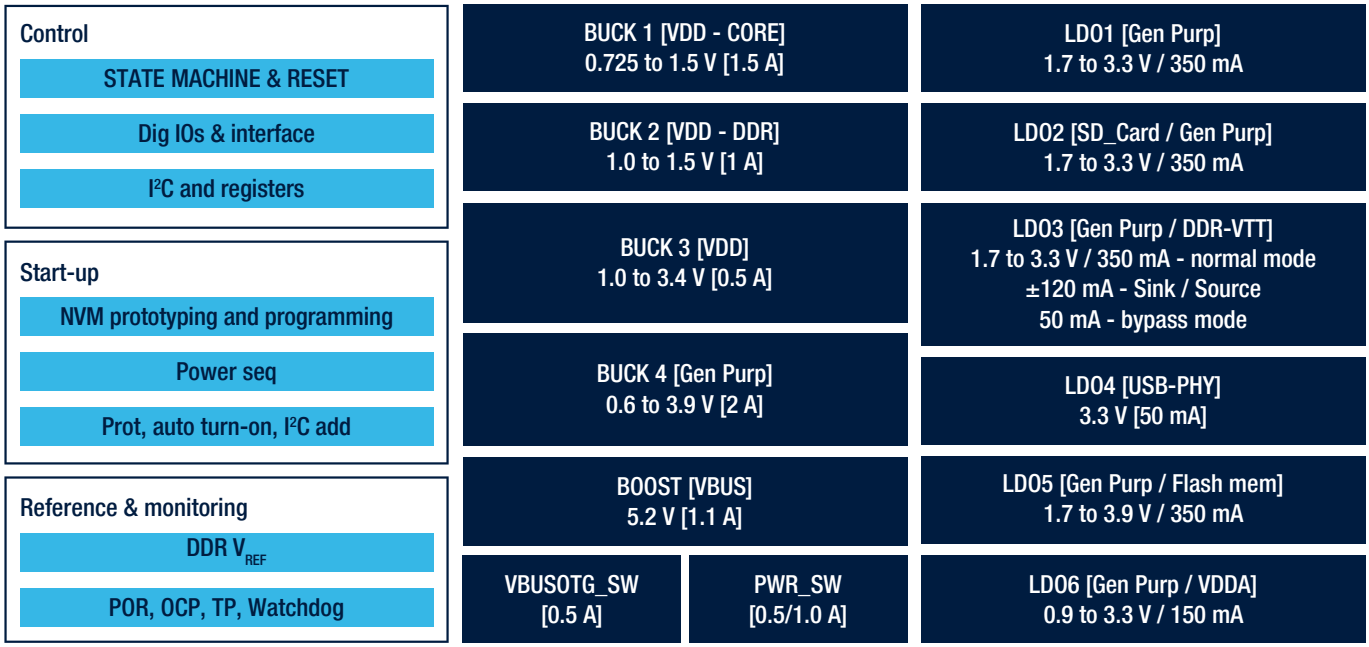
Equipped with innovative low-power attributes manageable by the host processor through I²C and I/O interfaces, the STPMIC1 minimizes power loss and enhances battery longevity in mobile devices. It boasts an embedded non-volatile memory (NVM) for dynamic programming, power sequencing, and status reporting, ensuring adaptability across diverse applications.

The STPMIC1 offers 14 power rails with overcurrent protection (OCP) and overvoltage protection (OVP), addressing the power requirements of MPUs and a wide array of peripherals.

Available in five pre-programmed versions to suit different I/O voltage needs, each version can be customized during the design phase for reprogrammable I/O voltage levels, providing exceptional versatility.

Additionally, an evaluation board (**STEVAL-PMIC1K1**) and a user-friendly graphical interface (GUI) software (**STSW-PMIC1GUI**) are available for real-time monitoring and configuration of the STPMIC1's principal functions.

STPMIC1 block diagram



STPMIC1 product table

Order Code	Target application	Package	Evaluation board and software tool
STPMIC1APQR / STPMIC1DPQR	Factory pre-programmed to support VIO at 3.3 V, VIN 5 V power supply	WFQFN 44L [5x6x0.8]	STEVAL-PMIC1K1 STSW-PMIC1GUI*
STPMIC1BPQR / STPMIC1EPQR	Factory pre-programmed to support VIO at 1.8 V, VIN supplied by battery pack		
STPMIC1CPQR	Not factory pre-programmed		

* Configuration GUI for the STEVAL-PMIC1K1 evaluation board of the STPMIC1