STM32L5 series

life.augmented

Excellence in ultra-low power with more security



First STM32 MCU based on Arm® Cortex®-M33 and TrustZone® technology

The STM32L5 series is the answer for embedded applications requiring more security and a lower power consumption. It adds more security with Arm® Cortex®-M33 and its TrustZone® technology as well as ST's security implementation while using our best-in-class ultra-low power technology.

Offering up to 512 Kbytes of Flash (dual bank) memory and 256 Kbytes of SRAM, the STM32L5 reaches an upgraded level of performance

The STM32L5 offers a large portfolio with 7 packages (from 48 to 144 pins) and supports up to 125°C ambient temperature.

POWER CONSUMPTION

- EEMBC ULPBench®: 370 ULPMark-CP score
- Embedded SMPS step-down converter (optional)
- Best power consumption with full flexibility:
  - 17 nA in shutdown mode
  - 3 µA in stop mode with full SRAM and peripheral states retention and with 5 µs wake-up time

A FULL SET OF SECURITY FEATURES

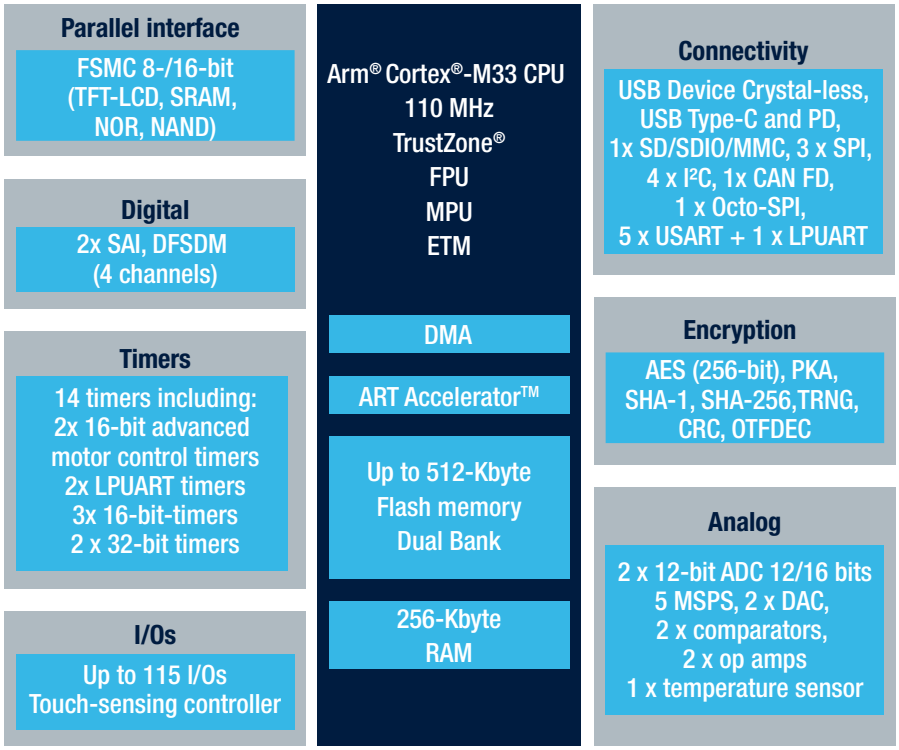
- Flexible hardware and software secure isolations with TrustZone®
- Enhanced security services:
  - Dedicated secure user memory space for secure boot and root of trust
  - Symmetric and asymmetric crypto accelerations
  - Memory and IP protection
  - Independent read-out protection between secure / non secure domains
  - Active IO tamper detection
  - Cryptographic firmware library
  - Secure Firmware Install to protect code and control the number of products manufactured

INTEGRATION, SIZE, PERFORMANCE

- Better application responsiveness:
  - Performance: +20% versus Cortex®-M4
  - New ART Accelerator™: now supporting also external memory
- Achieving 165 DMIPS, 442 CoreMark scores and 370 ULPMark-CP
- High integration and innovation: large memory, USB Type-C™ with Power Delivery controller, CAN FD

www.st.com/stm32l5

STM32L562 block diagram



Hardware tools

Evaluation board

Full feature development plaform



STM32L552E-EV

Discovery kit

Flexible prototyping with on-board Energy meter



STM32L562E-DK

STM32 Nucleo-144 development board

An affordable and flexible way to try out new concepts



NUCLEO-L552ZE-Q (SMPS version)

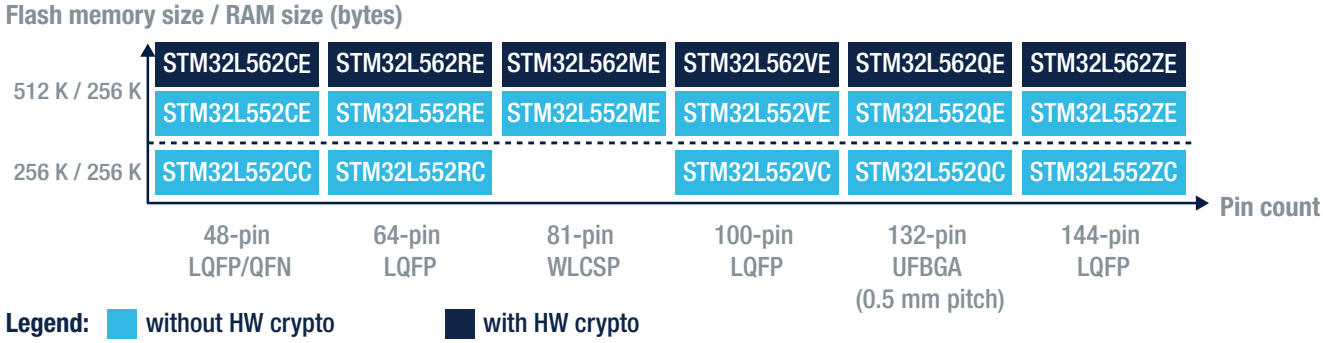
STM32Cube Ecosystem

Full set of software tools including STM32CubeMX to configure, generate code, calculate power consumption; STM32CubeIDE to configure, develop, compile and debug; STM32CubeProgrammer to program internal or external memories through JTAG or bootloader interfaces; and STM32CubeMonitor-Power to display power consumption.

One-stop-shop STM32Cube embedded software package with user-friendly license terms including MCU drivers, middleware (USB, TLS, Crypto, touch sensing, file system, TF-M and RTOS), project examples for IAR, Keil and STM32CubeIDE IDEs. TF-M is an open-source reference code to implement a Trusted Execution Environment (TEE) as specified in Arm PSA.

The STM32Trust ecosystem combines knowledge, design tools, and ready-to-use original ST software to build strong cyber-protection into new IoT devices, leveraging industry best-practices.
www.st.com/stm32trust

STM32L5 Portfolio



STM32L5 ON-LINE TRAINING
www.st.com/stm32l5-online-training

ST COMMUNITY
community.st.com/stm32

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