life.augmented

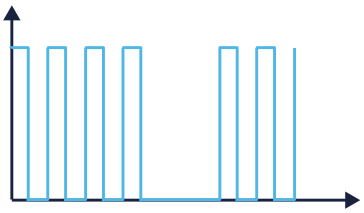
STM32L0 Series
Ultra-low-power MCUs
Tailored to your needs

STM32
Ultra-low-power

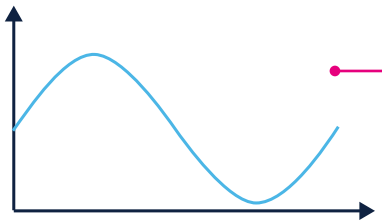
- 1.65 to 3.6 V VDD range
- Down to 49 µA/MHz Run mode at 4 MHz (with external DC/DC)
- 340 nA Stop mode + Full RAM
- 3.5 µs wakeup to Run
- -40 to +125°C operating range

- Full Flash protection
- Sector Flash protection
- AES hardware encryption
- True random number generator
- 96-bit unique ID
- Class B electromagnetic compatibility
- Built-in error correction code

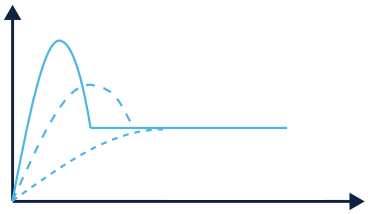
- USB 2.0 FS Certified
  - Crystal-less
  - Battery Charger Detection



- **Ultra-low-power time counter** with 16-bit low-power timer
- **Low-power UART** for communication up to 9600 baud in Stop mode



- Ultra-low-power ADC
  - 12-/16-bit resolution down to 1.65 V



- Adaptive inrush current

STM32 ULTRA-LOW-POWER DNA ARM® CORTEX®-M0+

The STM32L0 is the best match for energy harvesting, coin-cell battery or energy sensitive applications.

Combining a genuine ultra-low-power architecture with low-current analog peripherals and four lowpower modes, the STM32L0 is ideal for applications such as mice, keyboards, gas/water meters, building automation, alarm detectors and health care or fitness applications.

For applications that require a 15- to 20-year life duration or need to run in extermly high temperature conditions, the STM32L0 is the best choice thanks to ST's CMOS process technology.

STM32L0 ECOSYSTEM

Hardware tools

STM32 Nucleo boards

Flexibility prototype
NUCLEO-L010RB - NUCLEO-L011K4
NUCLEO-L031K6 - NUCLEO-L053R8
NUCLEO-L073RZ

Discovery kits

Creative demos
STM32L0538-DISCO

P/N: B-L072Z-LRWAN1
(ST and Murata)

Evaluation board

Full-feature evaluation
STM32L073Z-EVAL

Expansion board
P/N: I-NUCLEO-LRWAN1
(ST and USI®)

ST COMMUNITY

Ask, learn, share, discuss, become famous and engage with the community of STM32 enthusiasts on **community.st.com/stm32**

SOFTWARE TOOLS

STM32 CubeMX

Free IDE's

STM32 CubeProgrammer

STVP | STM Studio | ST-Link Utility | MCU Finder

Configure & Generate Code → Compile and Debug IDEs → Monitor, Program & Utilities

EMBEDDED SOFTWARE

STM32 Cube

STM32 Snippets L0	STM32Cube LL (low-layer APIs)	STM32Cube HAL and middleware	CMSIS and mbed SDK
Optimize your code	High optimization low portability	Average optimization STM32 portability	Low optimization Arm portability

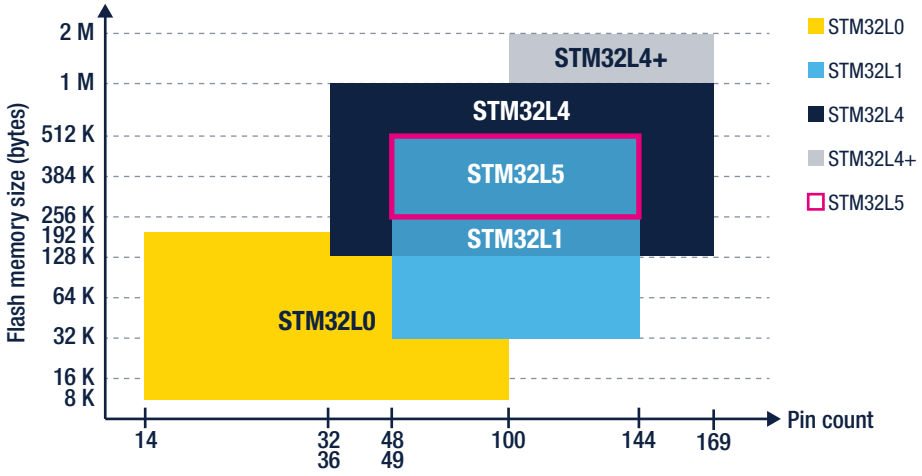
STM32L0 MCU SERIES 32-BIT ARM® CORTEX®-M0+ – 32 MHZ WITH MPU

- Ultra low leakage process
- Dynamic voltage scaling
- 14 to 100-pin
- 5 clock sources
- Advanced RTC w/ calibration
- 12-bit ADC 1.14 Msps
- Multiple USART, SPI, I²C
- Multiple 16-bit timers
- LP UART1
- LP Timers1
- 2 watchdogs
- Reset circuitry POR/PDR
- Brown-out Reset
- DMA
- AES-128

Product line	Flash (KB)	RAM (KB)	EEPROM (Bytes)	Power supply	PVD[2]	TEMP sensor	2x ULP COMP	2x 12-bit DAC	Touch sense	TRNG	USB 2.0 FS Crys-tal-less	Segment LCD Driver
STM32L0x0 Value line	Up to 128	Up to 20	Up to 512	Down to 1.8V								
STM32L0x1 Access	Up to 192	Up to 20	Up to 6K	Down to 1.65V	•	•	•					
STM32L0x2 USB	Up to 192	Up to 20	Up to 6K	Down to 1.65V	•	•	•	•	•	•	•	
STM32L0x3 USB & LCD	Up to 192	Up to 20	Up to 6K	Down to 1.65V	•	•	•	•	•	•	•	Up to 4x52 or 8x48

Note 1: Low-power peripherals available in ultra-low-power modes
Note 2: PVD = Programmable voltage detector

WIDE PORTFOLIO DESIGNED TO SAVE YOUR ENERGY



ST MCU FINDER

Free Android application to find the right STM32 MCU

MCU Finder

www.st.com/stmcufinder

VARIOUS PACKAGES OPTIONS TO FIT ANY APPLICATION CHALLENGE

WLCSP
WLCSP25 (~2x2 mm)
WLCSP36 (~2x3 mm)
WLCSP49 (~3x3 mm)

QFN
QFN28 (4x4 mm)
QFN32 (5x5 mm)
QFN48 (7x7 mm)

BGA
BGA64 (5x5 mm)
BGA100 (7x7 mm)

TSSOP
TSSOP14 (4.4x4.1 mm)
TSSOP20 (4.4x6.6 mm)

LQFP
LQFP32 (7x7 mm)
LQFP48 (7X7 mm)
LQFP64 (10X10 mm)
LQFP100 (14X14 mm)

MIX
Paper from responsible sources
FSC® C003379

Order code: BRSTM32L00520

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