life.augmented

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

STM32™ Ultra-low-power

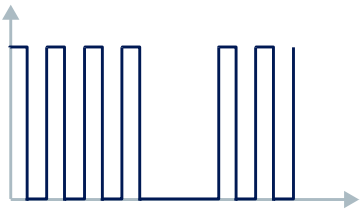
STM32 Ultra-low-power DNA ARM® Cortex®-M0+

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 low-power 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.

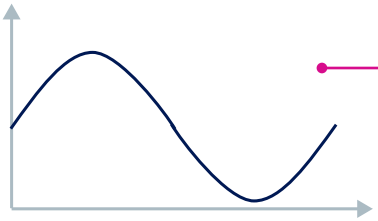
- 1.65 to 3.6 V VDD range
- Down to 49 µA/MHz Run mode at 4MHz
- 340 nA Stop mode + Full RAM
- 3.5 µs wakeup to Run
- -40 to +125°C operating range

- 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

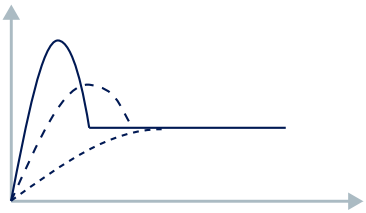
- USB 2.0 FS Certified
  - Crystal-less
  - Battery Charger Detection



- **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

STM32L0 ECOSYSTEM

Hardware tools

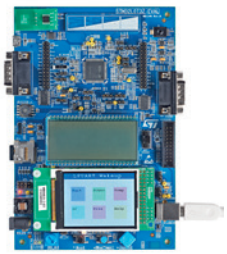
STM32 Nucleo board

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

Discovery kit

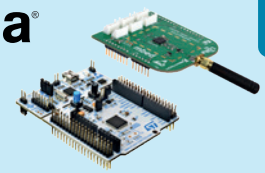
Creative demos
STM32L0538-DISCO

Evaluation board

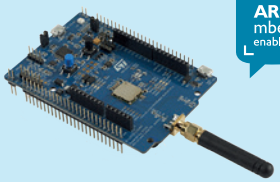


Full-feature evaluation
STM32L073Z-EVAL

Nucleo pack
P/N: P-NUCLEO-LRWAN1
(ST and Semtech)



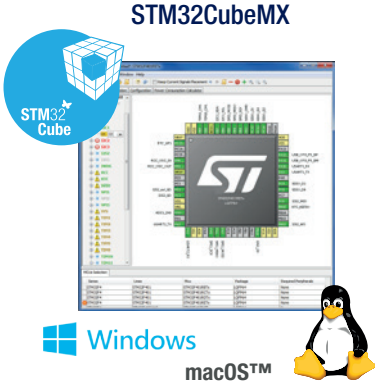
Discovery kit
P/N: B-L072Z-LRWAN1
(ST and Murata)



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

Software tools

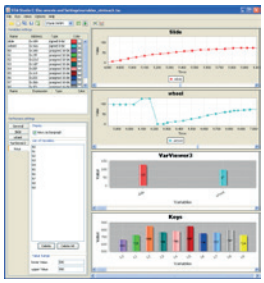
STM32CubeMX



Partners IDEs

Free IDE

STMStudio



Configure and generate code | Compile and debug | Monitor

Embedded Software

STM32Snippets	STM32CubeLL	STM32Cube and Std Libraries	CMSIS and Mbed SDK	Virtual machines and models
www.st.com/stm32snippets		www.st.com/stm32cube	www.mbed.org	www.st.com/stm32
High optimization low portability		Average optimization STM32 portability	Low optimization ARM portability	Low optimization large portability

ST COMMUNITY
Ask, learn, share, discuss, become famous and engage with the community of STM32 enthusiasts on community.st.com

UP TO THREE LINES FOR MORE FLEXIBILITY

ARM® Cortex®-M0+ (32 MHz with MPU)

- Low voltage 1.65 to 3.6V
- - 40 to 125°C oper. temp.
- 14 to 100 pins
- Dynamic voltage scaling
- 5 clock sources
- Advanced RTC w/ calibration
- Multiple USART, SPI, I²C
- Multiple 16-bit timers
- 5V tolerant I/Os
- 2 watchdogs
- Programmable voltage detector (PVD)
- Reset circuitry POR/PDR
- Brown-out Reset
- DMA
- Comparators
- Temperature sensor
- AES-128

STM32 L0 Product	Flash (KB)	RAM (KB)	EEPROM (KB)	12-bit ADC 1.14 MSPS	LP[1] UART	LP[1] 16-bit timer	12-bit DAC	Touch sense	True RNG	USB 2.0 FS Crystal-less	Segment LCD Driver
STM32L0x1 Access	Up to 192	Up to 20	Up to 6	•	•	•					
STM32L0x2 USB	Up to 192	Up to 20	Up to 6	•	•	•	•	•	•	•	
STM32L0x3 USB & LCD	Up to 192	Up to 20	Up to 6	•	•	•	•	•	•	•	Up to 4x52 or 8x48

VARIOUS PACKAGES OPTIONS TO FIT ANY APPLICATION CHALLENGE

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

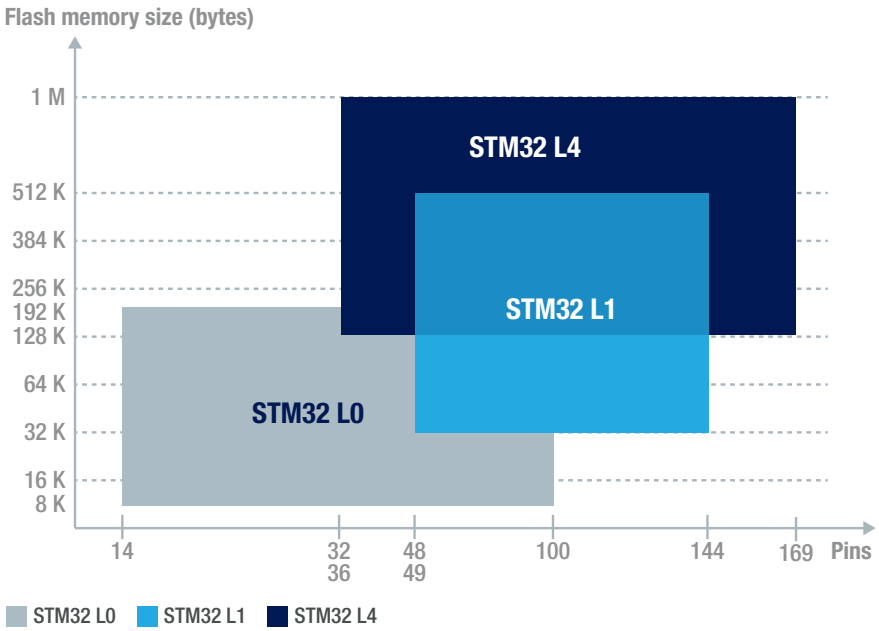
QFN
QFN28 (4x4 mm)
QFN32 (5x5 mm)

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)

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

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