STM32L0X0 VALUE LINE

Ultra-low-power MCUs

Simple, affordable ultra-low-power STM32 MCUs with an Arm® Cortex® -M0+ core

The ultra-low-power STM32L0 Value line incorporates the efficient 32-bit Arm® Cortex®-M0+ core operating at 32 MHz, embedded memories (128 Kbytes of Flash program memory, 512 bytes of data EEPROM and 20 Kbytes of RAM).
This STM32L0 Value line provides high power efficiency over a wide performance range.
This is achieved with a large choice of internal and external clock sources, internal voltage adaptation, and several low-power modes.

CORE
- From 32 kHz to 32 MHz
- 0.95 DMIPS/MHz

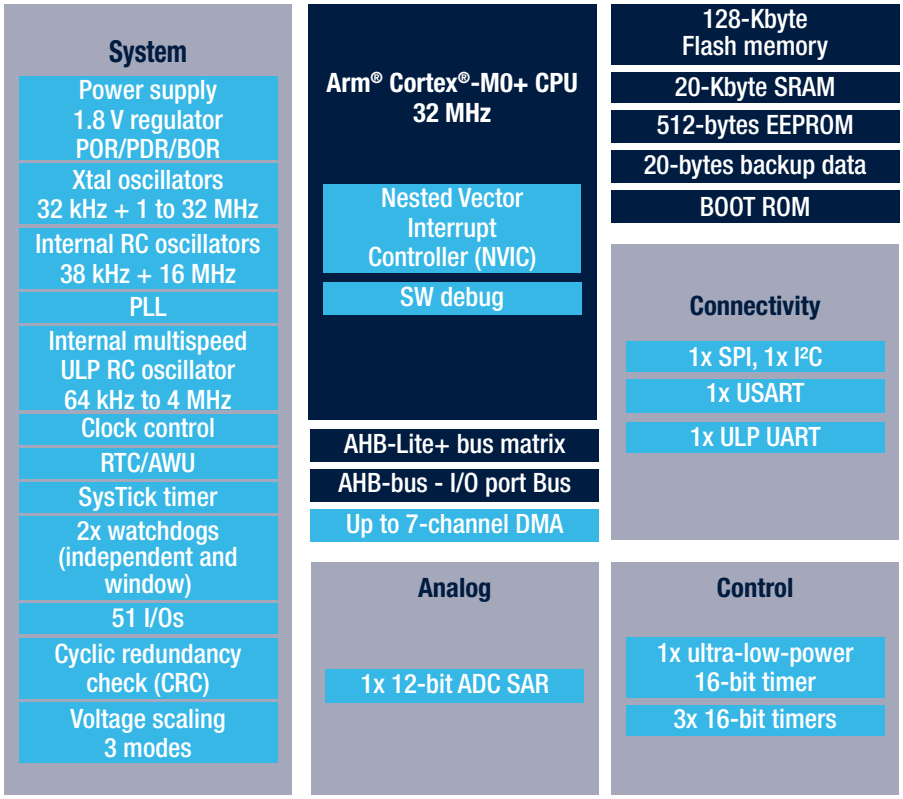
MEMORIES
- Up to 128 Kbytes of Flash memory
- Up to 20 Kbytes of RAM
- Up to 512 bytes of data EEPROM
- 20-byte backup register
- Sector protection against R/W operations

ULTRA-LOW-POWER PLATFORM
- 1.8 to 3.6 V power supply
- –40 to 85 °C temperature range
- Down to 0.23 µA Standby mode (2 wakeup pins)
- Down to 0.29 µA Stop mode (16 wakeup lines)
- 0.54 µA Stop mode + RTC + 2-Kbyte RAM retention
- Down to 49 µA/Mhz in Run mode (with external SMPS)
- 5 µs wakeup time (from Flash memory)
- 41 µA 12-bit ADC conversion at 10 ksps

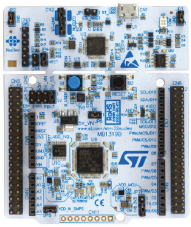
CLOCK SOURCES
- 0 to 32 MHz external clock
- 32 kHz oscillator for real-time-clock (RTC) with calibration
- High-speed internal 16 MHz factory-trimmed RC oscillator (±1%)
- Internal low-power 37 kHz RC oscillator
- Internal multispeed low-power 65 kHz to 4.2 MHz RC oscillator
- PLL for CPU clock

OTHER
- 7-channel DMA controller, supporting ADC, SPI, I2C, USART and timers
- 4x peripheral communication interfaces
- 1x USART (ISO 7816), 1x LPUART (low power)
- 1x SPI (16 Mbit/s)
- 1x I2C (SMBus/PMBus)
- 8x timers: 1x 16-bit with up to 4 channels, 2x 16-bit with up to 2 channels, 1x 16-bit ultra-low-power timer, 1x SysTick, 1x RTC and 2x watchdogs (independent/window)

STM32L010RB block diagram



Hardware tools



NUCLEO-L010RB
Nucleo-64 development board

Software development tools

STM32CubeMonitor helps to fine-tune and diagnose STM32 applications at run-time by reading and visualizing their variables in real-time.

STM32CubeMX enables fast development thanks to its MCU clock configurator, power consumption calculator and code generation tools.

STM32Cube MCUs Packages

The STM32CubeL0 package includes the STM32Cube HAL and low-layer (LL) APIs peripheral drivers, plus a consistent set of middleware components (RTOS, USB, FatFS, graphics and STM32 touch sensing).
All embedded software utilities come with a full set of examples running on STMicroelectronics boards.

ST COMMUNITY

Engage with the community of STM32 enthusiasts on **community.st.com/stm32**

STM32L010 value line portfolio