

STM32L4 Series

Ultra-low-power and performance



STM32™ ultra-low-power at 100 DMIPS with DSP and FPU

ULTRA-LOW-POWER EXCELLENCE

The STM32L4 microcontroller is based on a new ultra-low-power platform featuring FlexPowerControl which extends flexibility to reach optimized power consumptions: With an EEMBC ULPBench score of 253 ULPBench™-CP, the STM32L4 outperforms the market in the ultra-low-power domain.

WITH PERFORMANCE

Offering up to 1 Mbyte of Flash (dual bank) memory and up to 320 Kbytes of SRAM, the STM32L4 unleashes the ARM® Cortex®-M4 power efficiency with floating point unit (FPU) and DSP instructions. It delivers 100 DMIPS / 273 CoreMark thanks to the ST ART Accelerator™ at 80 MHz. The entire system performance is optimized using a multi-AHB bus matrix and DMA controllers.

OUTSTANDING LOW-POWER MODES

Wake-up time	Mode	Power Consumption
250 μ s	VBAT	2 nA / 200 nA*
14 μ s	Shutdown	8 nA / 200 nA*
14 μ s	Standby	28 nA / 280 nA*
5 μ s	Standby + 16-Kbytes RAM	200 nA / 450 nA*
4 μ s	Stop 2 (full retention)	1.0 μ A / 1.28 μ A*
6 cycles	Stop 1 (full retention)	4.3 μ A / 4.7 μ A*
	Sleep	10 μ A / MHz**
	Run at 24 MHz	36 μ A / MHz**
	Run at 80 MHz	38 μ A / MHz**

* without RTC / with RTC

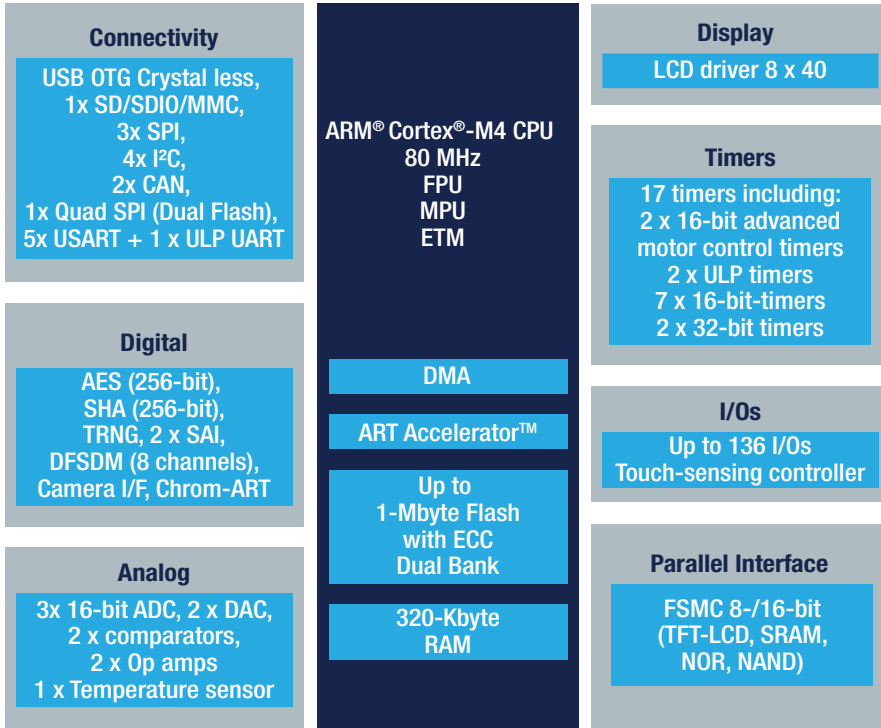
** ext SMPS



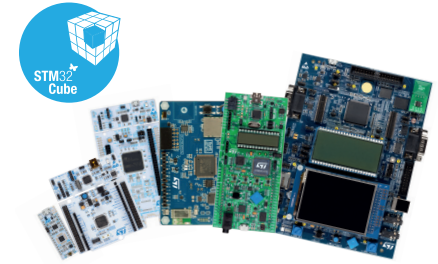
STM32L4 ON-LINE TRAINING

www.st.com/stm32l4-online-training

STM32L4A6 BLOCK DIAGRAM



HARDWARE TOOLS



A full set of evaluation boards enables flexible prototyping as well as full STM32L4 evaluation. Commercial part numbers: NUCLEO-L432KC (32 pins); NUCLEO-L476RG, NUCLEO-L452RE, NUCLEO-L452RE-P (64 pins); NUCLEO-L496ZG (144 pins), NUCLEO-L496ZG-P (144 pins) and STM32L496G-DISCO, STM32L476G-DISCO, B-L475E-IOT01A and STM32L476G-EVAL

SOFTWARE TOOLS

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

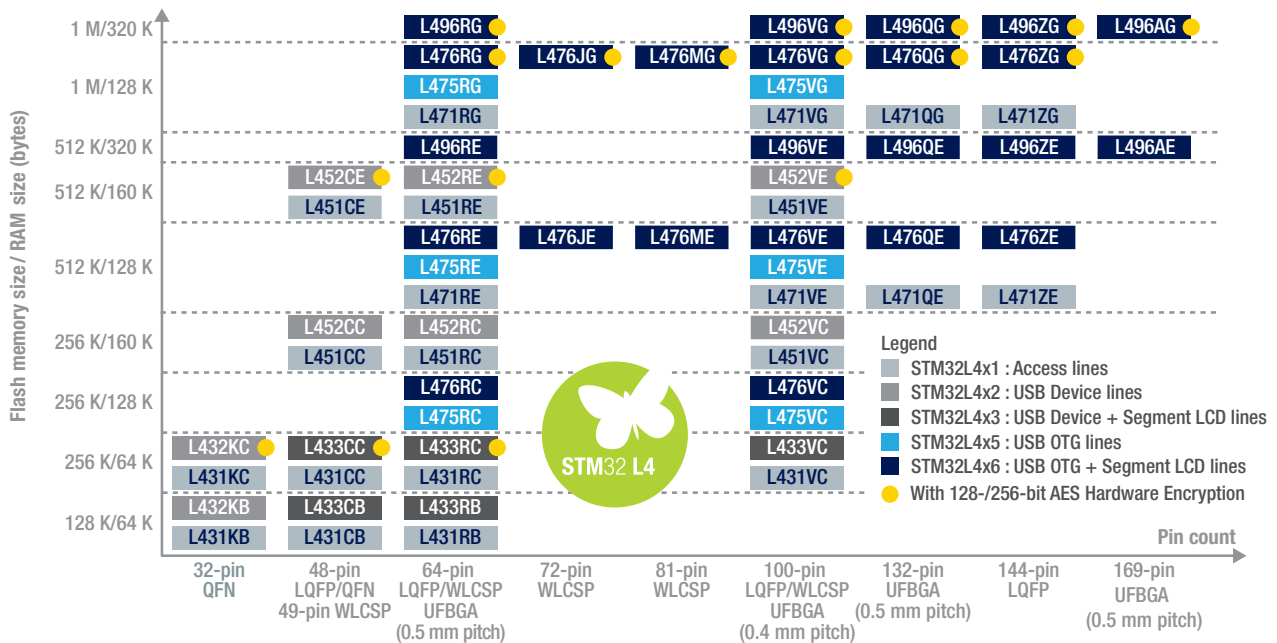
SMART PERIPHERALS

- Low-power UART and I2C communication interfaces
- Low-power time counter (16-bit low-power timers)
- Up to 7 SPIs including Quad-SPI supporting software execution
- Independent peripheral communication clock separate from main system clock
- Digital filters for sigma-delta modulators supporting digital microphone (PDM to PCM conversion w/ HW filter)

ST COMMUNITY

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

STM32L4 PORTFOLIO



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