



STM32L4 – Series Presentation

Revision 3.2



Hello, and welcome to the STM32L4 series introduction training session.
This presentation provides information about the various product lines available in the STM32L4 series.

STM32L4: Product lines 2

5 product lines

- The STM32L4 series is divided into product lines.
- Product lines are differentiated by key features:
 - Access, USB, USB+LCD, USB OTG, or USB OTG+LCD
 - Each product line has an option to include or not cryptographic features
- Product part numbers are differentiated by memory size (Flash, SRAM), sub-features and/or the maximum number of peripherals
- Note that STM32L476/486 devices are the first L4 products to be released while other devices are derivatives.
- Training presentations are primarily based on STM32L476/486 devices and differences with derivatives are often highlighted at the end of each module presentation.



The STM32L4 series is divided into product lines differentiated by key features. The product part numbers are differentiated by memory size, sub-features and/or the maximum number of peripherals as described in the following slides.

STM32L476/486 devices are the first products to be released while other devices are derivatives. This is why the training slides are primarily based on STM32L476/486 devices while differences among other derivatives are often highlighted at the end of each module presentation.

STM32L4: Product Lines

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5 product Lines

Access L4x1	USB L4x2	USB+LCD L4x3	USB OTG L4x5	USB OTG+LCD L4x6
				STM32L496 STM32L4A6
STM32L471			STM32L475	STM32L476 STM32L486
STM32L451	STM32L452 STM32L462			
STM32L431	STM32L432 STM32L442	STM32L433 STM32L443		
	STM32L412 STM32L422			



This table shows a list of all available product lines
The documentation provides a Reference Manual covering one or several Product Lines mentioning the differences for each product.
A Datasheet is available for each product reference in the table.

STM32L4: Features per devices 4

Wide range of features and memory size across products devices

This table shows the maximum Flash memory size and features for the given derivative. This may be less depending on the product line or product reference.

	Product Features								
	Memory		Digital		ADC	DAC	OPAMP	COMP	Common
	Flash	SRAM							
STM32L49x/L4Ax	1 M dual bank	320 KB	FSMC USB-OTG FS 2xUART, 1xSDIO 2xSAI, DFSDM 16xTimer, LCD, SWP	Camera Interface Chrome ART SHA-256 (*) 4xI2C, 3xSPI, 2xCAN	3	2	2	2	ARM Cortex-M4, 80MHz, MPU, FPU, ART Clk Recovery Syst.
STM32L47x/L48x		128 KB	16xTimer, LCD, SWP	3xI2C, 3xSPI, 1xCAN					
STM32L45x/L46x	512 KB single bank	160 KB	USB FS 1xUART, 1xSDIO 1xSAI, DFSDM 12xTimer	4xI2C, 3xSPI, 1xCAN	1	1	1	2	1xQUADSPI 1xLPUART 3xUSART 1xRTIM
STM32L43x/L44x	256 KB single bank	64 KB	USB FS 1xSAI, 1xSDIO 11xTimer, LCD, SWP	3xI2C, 3xSPI, 1xCAN	1	2	1	2	FireWall Touch Sense CRC TRNG AES(*)
STM32L41x/L42x	128 KB single bank	40 KB	USB FS 10xTimer	3xI2C, 2xSPI	2	0	0	0	

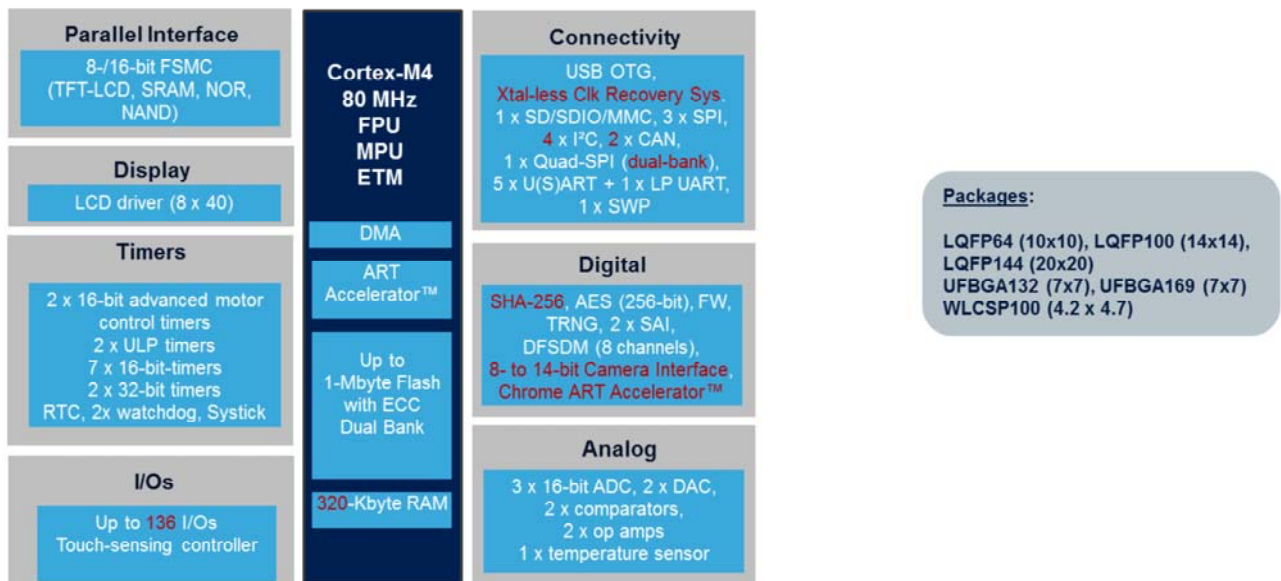


(*) AES is only available on STM32L4Ax, STM32L48x, STM32L46x, STM32L44x and STM32L42x
SHA-256 is only available on STM32L4Ax

This table list the key features per product devices.

STM32L49x/4Ax: block diagram

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This block diagram summarizes the key features and available packages for STM32L49x/4Ax devices and is provided here for reference.

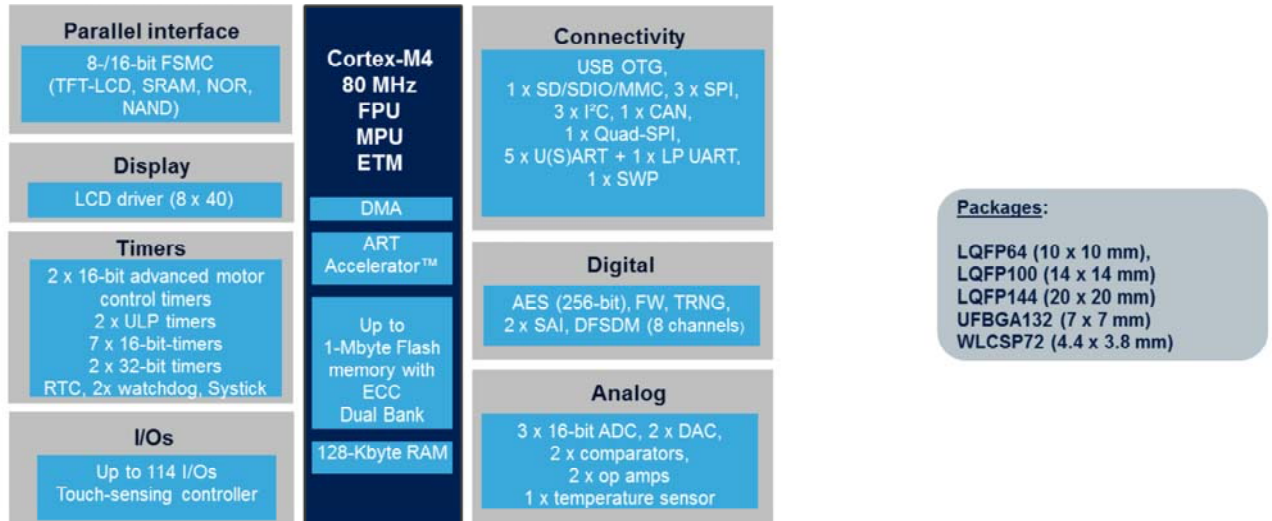
The differences with STM32L47x/48x devices are highlighted in red.

STM32L49x/4Ax devices have the largest memory footprint and graphical peripherals like parallel camera interface and Chrome ART accelerator™ for advanced graphics processing.

They also include a hash processor (supporting SHA-256 functions), a Clock Recovery System (CRS) allowing crystal-less operation of the USB, an additional I2C, an additional CAN, the support of dual-bank Quad-SPI Flash memory interface to improve bandwidth and finally the support of up to 136 GPIOs through the BGA169 package.

STM32L47x/48x block diagram

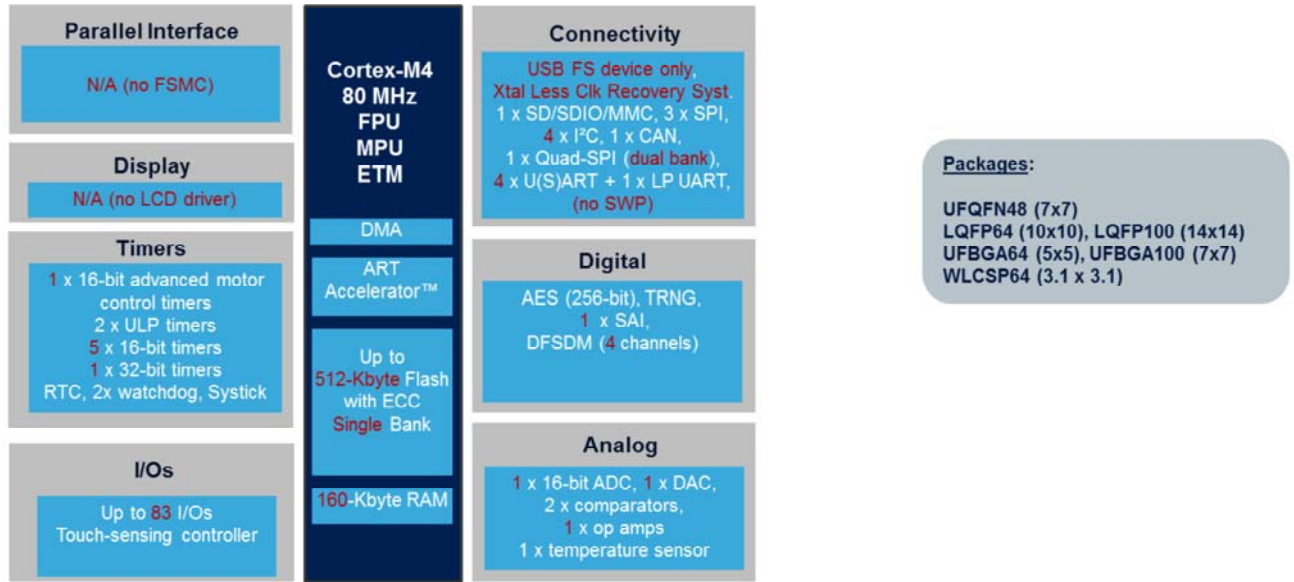
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This block diagram summarizes the key features and available packages for STM32L47x/48x devices and is provided here for reference.

STM32L47x/48x devices are the reference devices from which other products are derived.

STM32L45x/46x : Block Diagram 7

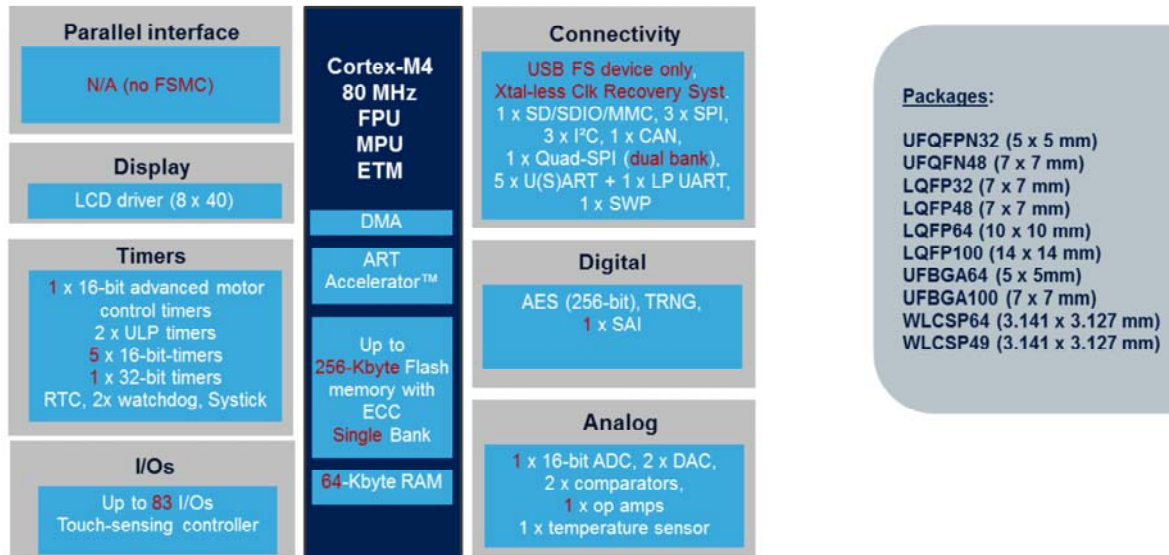


This block diagram summarizes the key features and available packages for STM32L45x/46x devices and is provided here for reference.

The differences with STM32L47x/48x devices are highlighted in red.

STM32L43x/44x block diagram

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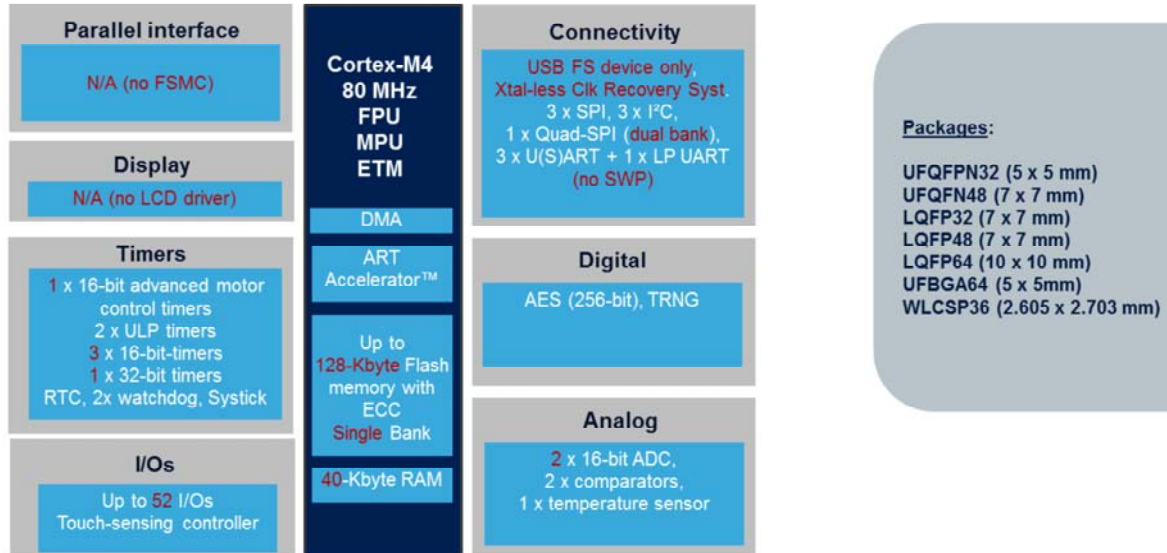


This block diagram summarizes the key features and available packages for STM32L43x/44x devices and is provided here for reference.

The differences with STM32L47x/48x devices are highlighted in red.

STM32L41x/42x block diagram

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This block diagram summarizes the key features and available packages for STM32L41x/42x devices and is provided here for reference.

The differences with STM32L47x/48x devices are highlighted in red.