

STM32L15x vs STM32F10x



- STM32F-1系列和STM32L系列都内置ARM® Cortex™- M3的32位内核处理器，从ARM处理器从开发工具到软件方案的完整生态链获益。

STM32L vs STM32F —— 系统概览



	STM32F103 128K	STM32L152 128K	STM8L152 32K
工作电压	2V..3.6V	1.8V(1.65V)..3.6V	1.8V(1.65V)..3.6V
引脚封装	36/48/64/100	48/64/100	28/32/48
最高工作频率	72MHz	32MHz	16MHz
最大Ram容量	20K	16K	2K
最大Flash容量	128K	128K	32K
E ² PROM容量	模拟, 2KB (没有RWW功能)	4KB (没有RWW功能)	1KB (有RWW功能)
后备寄存器	20bytes	80 bytes	No (no standby)
Bootloader	USART	USART	USART
存储器保护	Level 1	Level 1 和 2 (JTAG熔断)	Level 1
MPU	No	Yes (8 regions)	No
存储器ECC校验	No	Yes	Yes
ETM (跟踪调试)	No	Yes	No

STM32L vs STM32F —— 固件库



- STM32L15x标准外设固件库使用和STM32F10x 固件库同样的软件架构，同样符合CMSIS标准。
- STM32L15x标准外设固件库和STM2F10x固件库在API上兼容。
- 由于架构的不同(系统部分)，两个固件库会有所区别。
- STM32 USB-FS-Device 固件库提供对STM32L15x USB 外设的支持。

STM32L vs STM32F —— 外设



		STM32F103 128K	STM32L152 128K
Shared Ips	EXTI	Full Compatible peripherals	
	CRC		
	DBGMCU		
	DMA		
	TIM		
	USART		
	I2C (*)		
	SPI		
	IWDG		
	WWDG		
	USB FS Device		
Modified Ips	ADC	Dual ADC 1&2	ADC with a new interface
	RTC		New RTC peripheral with hardware calendar support
	FLASH		New FLASH memory interface and organization
	GPIO		New GPIO interface peripheral with mux for Alternate functions
	RCC		Small modification for STM32L architecture
	SYSCFG		New Routing Interface
	PWR		New power control features
New Ips	DAC	Not Available	New STM32L152 128K peripherals
	COMP		
	LCD		
Not Available Ips	CAN		Not Available

STM32L vs STM32F —— 兼容性



- STM32L15xxx系列的所有芯片在功能，固件和引脚方面全部兼容
- STM32L15xxx系列与STM32F10xxx系列保证密切的兼容性
 - 电源和功能引脚兼容
- 从STM32F10xxx系列过度到STM32L15xxx系列非常简单，只有2个引脚会受影响。

STM32L vs STM32F —— 引脚兼容



引脚兼容性:

- 全兼容：电源和功能引脚在不同的封装上使用相同的引脚。

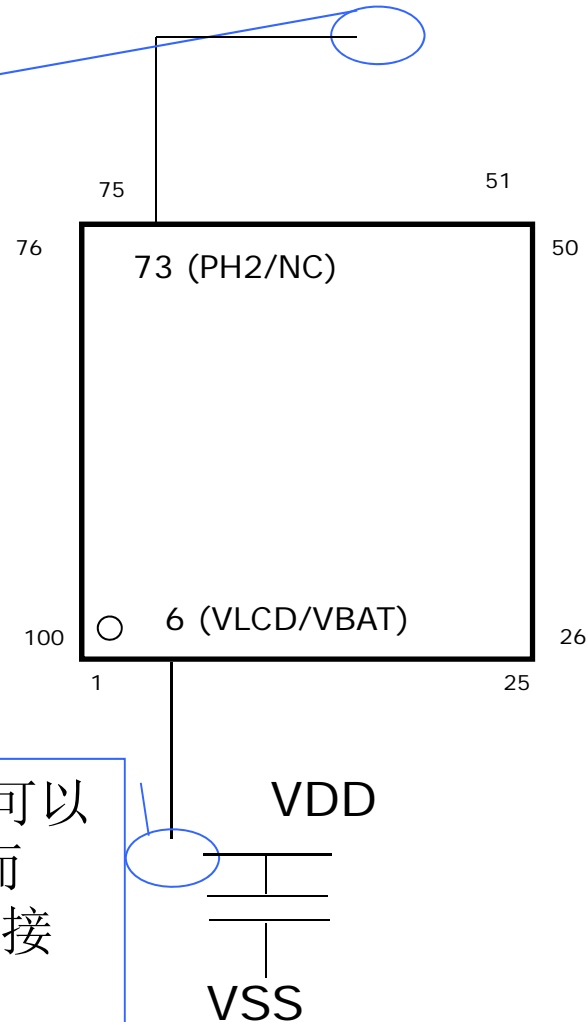
STM32L15x vs STM32F10x 不同的引脚:

- OSCIN/OSCOUT映射到GPIO_H，如果不使用HSE可以获得额外的2个GPIO口。
- V_{BAT} 由 V_{LCD} 替换，因此STM32L15x不支持VBAT功能。
- 1个额外的GPIO口：
 - 引脚73被映射到PF2

QFN36	LQFP48	LQFP64	LQFP100	STM32F10x	QFN36	LQFP48	LQFP64	LQFP100	STM32L15x
2	5	5	12	OSC_IN	2	5	5	12	PH0-OSC_IN
3	6	6	13	OSC_OUT	3	6	6	13	PH1-OSC_OUT
-	1	1	6	VBAT		1	1	6	VLCD
-	-	-	73	NC	-	-		73	PH2

STM32L vs STM32F —— LQFP 100兼容性设计

STM32F10x系列芯片
引脚73可以接0欧姆电阻



如果不使用VBAT功能，该引脚可以通过100nF电容连接到VDD，而VLCD同样需要通过1uF电容连接到VDD。

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