

STM32F1与STM32F2 之间的兼容性



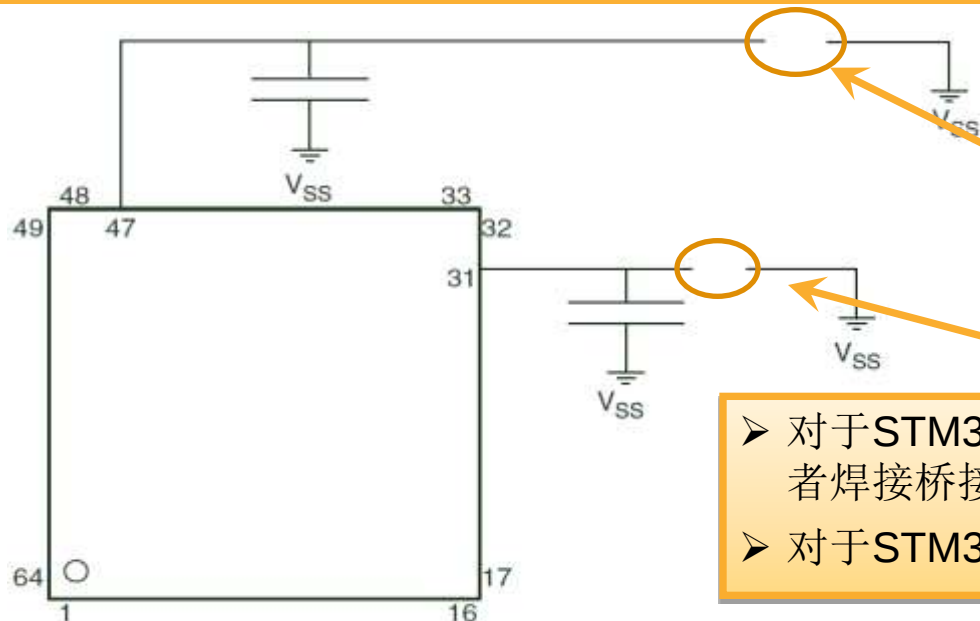
保持了最大程度的兼容性



- 功能引脚pin-to-pin兼容
- 电源引脚有少许差别，如下表

引脚名称		QFP64		QFP100		QFP144	
F10x	F20x	F10x	F20x	F10x	F20x	F10x	F20x
PD0 - OSC_IN	PH0 - OSC_IN	5	5	12	12	23	23
PD1 - OSC_OUT	PH1 - OSC_OUT	6	6	13	13	24	24
VSSA	VDD	12		19	19	30	30
VREF-	VSSA		12	20	20	31	31
VSS_1	VCAP1	31	31	49	49	71	71
NC	VCAP2		47	73	73	106	106
VSS_2	VSS_2	47		74	74	107	107
VSS_3	VSS_3	63	63	99		143	

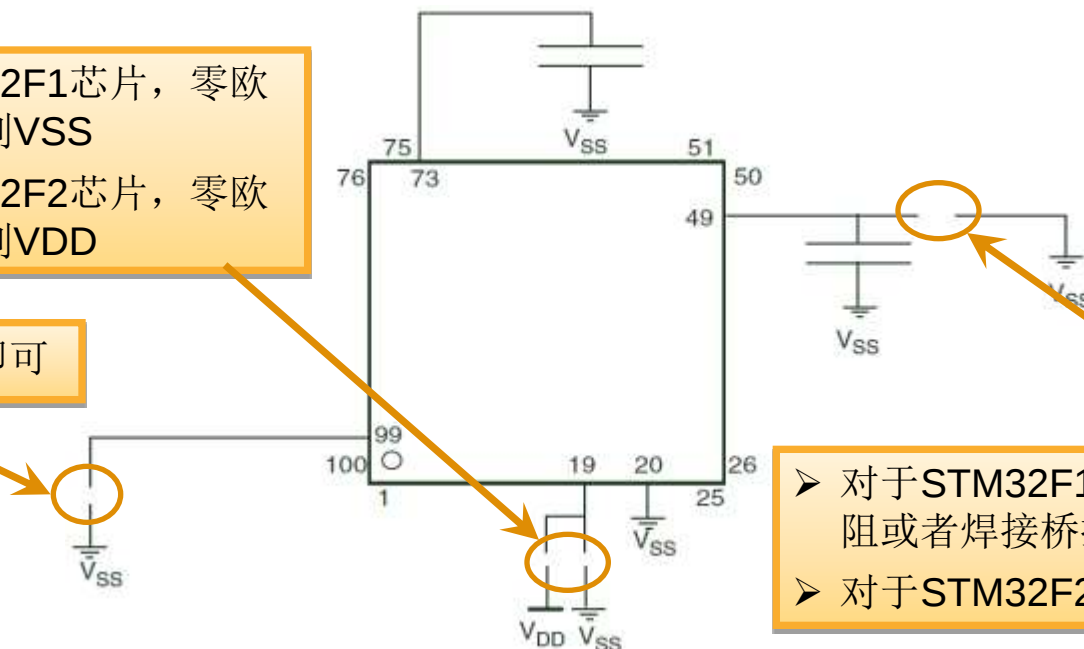
LQFP64封装兼容板



- 对于STM32F1芯片，这里放置零欧姆电阻或者焊接桥接通
- 对于STM32F2芯片，这里直接断开即可

引脚名称		QFP64	
STM32F10x	STM32F20x	F10x	F20x
PD0 - OSC_IN	PH0 - OSC_IN	5	5
PD1 - OSC_OUT	PH1 - OSC_OUT	6	6
VSS_1	VCAP1	31	31
VSS_2	VCAP2	47	47

- 直接接地即可



- 对于**STM32F1**芯片，这里放置零欧姆电阻或者焊接桥接通；
- 对于**STM32F2**芯片，这里直接断开即可

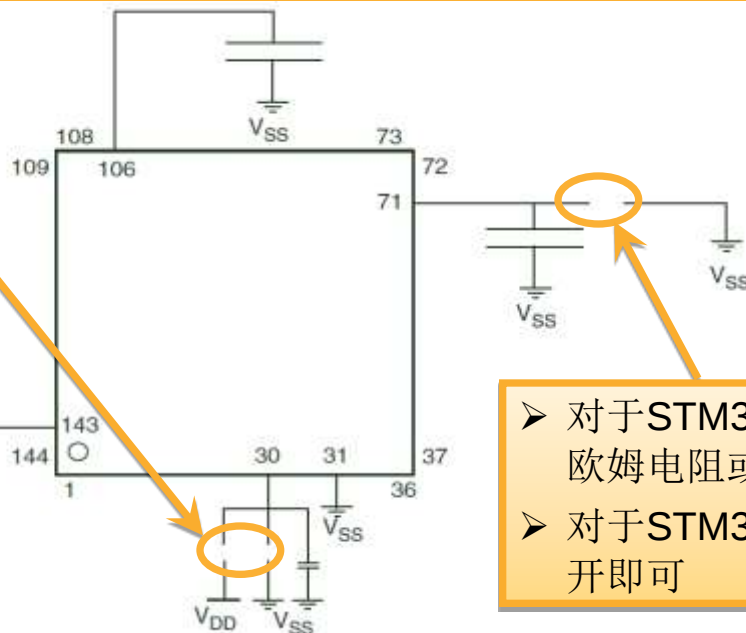
引脚名称		QFP100	
STM32F10x	STM32F20x	F10x	F20x
PD0 - OSC_IN	PH0 - OSC_IN	12	12
PD1 - OSC_OUT	PH1 - OSC_OUT	13	13
VSSA	VDD	19	19
VSS_1	VCAP1	49	49
VSS_3	Reserve	99	99

LQFP144封装兼容板



- 对于STM32F1芯片，零欧姆电阻连到VSS
- 对于STM32F2芯片，零欧姆电阻连到VDD，同时并联10nF去藕电阻

➤ 直接接地即可



- 对于STM32F1芯片，这里放置零欧姆电阻或者焊接桥接通；
- 对于STM32F2芯片，这里直接断开即可

引脚名称		QFP144	
STM32F10x	STM32F20x	F10x	F20x
PD0 - OSC_IN	PH0 - OSC_IN	23	23
PD1 - OSC_OUT	PH1 - OSC_OUT	24	24
VSSA	VDD	30	30
VSS_1	VCAP1	71	71
VSS_3	Reserve	143	143

STM32F1和STM32F2的系统级区别总览



	STM32F10x系列	STM32F2xx系列
工作电压	2.0V ~ 3.6V	1.8V(1.65V) ~ 3.6V
CPU最高工作频率	72MHz	120MHz
片上SRAM容量	高达96K字节	高达128K字节
片上闪存容量	高达1M字节	高达1M字节
外部存储器接口(FSMC)	100引脚及以上封装有	100引脚及以上封装有
备份SRAM	无	有4K字节
备份寄存器	20字节、84字节 ⁽¹⁾	80字节
启动代码接口	USART、CAN、USB ⁽²⁾	USART、CAN、USB
闪存读保护	单级读保护	双级读保护，支持JTAG熔断
存储器保护单元(MPU)	无	有 (可以保护8个区域)
ETM (Trace)	无	有

(1) 互联性产品105/107的备份寄存器是84字节

(2) 互联性产品105/107的启动代码支持USART、CAN和USB三种接口，其余芯片只支持USART接口

STM32F1和STM32F2的外设区别总览



		STM32F1系列产品	STM32F2系列产品
定时器	用于马达控制的高级定时器	2	2
	4通道通用定时器	4	4, 其中2个是32位定时器
	无通道的基本定时器	2	2
	2通道通用定时器	2	2
	1通道通用定时器	4	4
RTC		基本计数器	带硬件日历信息
IWDG/WWDG		有	有
通信接口	SPI (I2S)	3 (2)	3 (2)
	最大工作频率	18M比特/秒	30M或者15M比特/秒
	支持的音频采样率	8K~96KHz	8K~192KHz
	I2C	2	3
	最大工作频率	400KHz	400KHz
	USART	3	4
	UART	2	2
	最大工作频率	2.25或4.5M/秒	3.75或7.5M/秒
	USB	全速OTG(device、host)	全速OTG或者高速OTG(device、host)
	CAN	2	2
	SDIO	1	1
	CEC	有	无
	以太网	有	有

STM32F1和STM32F2的外设区别总览



	STM32F1系列产品	STM32F2系列产品
GPIO	51/80/112	51/82/114/140
12位ADC	3	3
最大采样率	1M	2M
通道数目	16个	24个
12位DAC	2	2
最大采样率	1M	2M
通道数目	2	2
DCMI	无	有
随机数产生器（RNG）	无	有
硬件加密模块	无	DES、3DES、AES SHA-1和M5哈希处理器

CONFIDENTIALITY OBLIGATIONS:

THIS DOCUMENT CONTAINS SENSITIVE INFORMATION.

IT IS CLASSIFIED "MICROCONTROLLERS, MEMORIES & SECURE MCUs (MMS) RESTRICTED AND ITS DISTRIBUTION IS SUBMITTED TO ST/MMS AUTHORIZATION

AT ALL TIMES YOU SHOULD COMPLY WITH THE FOLLOWING SECURITY RULES:

- DO NOT COPY OR REPRODUCE ALL OR PART OF THIS DOCUMENT
- KEEP THIS DOCUMENT LOCKED AWAY
- FURTHER COPIES CAN BE PROVIDED ON A "NEED TO KNOW BASIS", PLEASE CONTACT YOUR LOCAL ST SALES OFFICE OR DOCUMENT WRITTER.

Information furnished is believed to be accurate and reliable. However, STMicroelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

The ST logo is registered trademark of STMicroelectronics
All other names are the property of their respective owners

© 2015 STMicroelectronics - All Rights Reserved

STMicroelectronics group of companies Australia - Brazil - Canada - China - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States.

www.st.com