



1. Description

1.1. Project

Project Name	F303_Epaper_SPI
Board Name	custom
Generated with:	STM32CubeMX 6.5.0
Date	06/03/2022

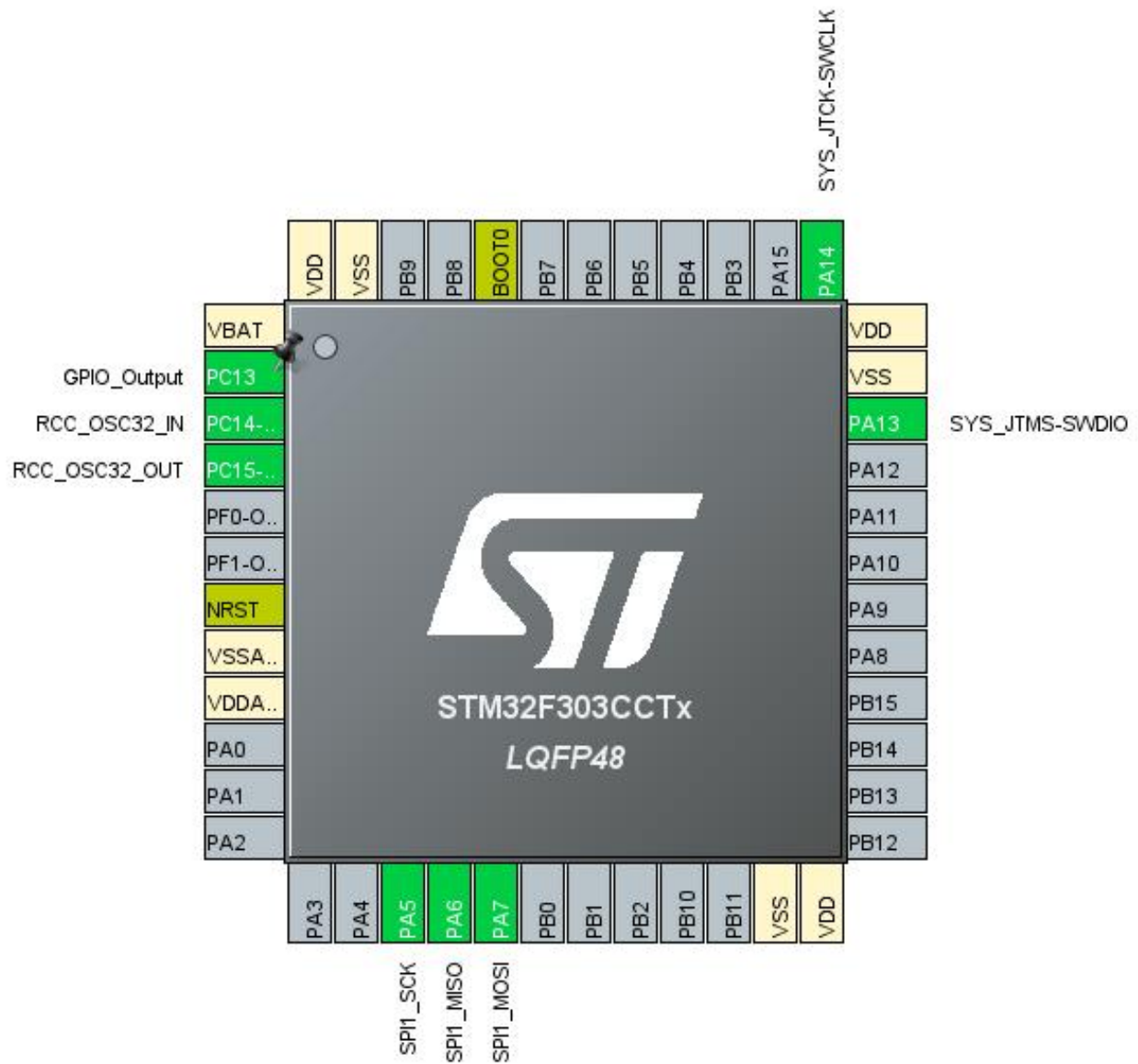
1.2. MCU

MCU Series	STM32F3
MCU Line	STM32F303
MCU name	STM32F303CCTx
MCU Package	LQFP48
MCU Pin number	48

1.3. Core(s) information

Core(s)	Arm Cortex-M4
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2. Pinout Configuration



3. Pins Configuration

Pin Number LQFP48	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VBAT	Power		
2	PC13 *	I/O	GPIO_Output	
3	PC14-OSC32_IN	I/O	RCC_OSC32_IN	
4	PC15-OSC32_OUT	I/O	RCC_OSC32_OUT	
7	NRST	Reset		
8	VSSA/VREF-	Power		
9	VDDA/VREF+	Power		
15	PA5	I/O	SPI1_SCK	
16	PA6	I/O	SPI1_MISO	
17	PA7	I/O	SPI1_MOSI	
23	VSS	Power		
24	VDD	Power		
34	PA13	I/O	SYS_JTMS-SWDIO	
35	VSS	Power		
36	VDD	Power		
37	PA14	I/O	SYS_JTCK-SWCLK	
44	BOOT0	Boot		
47	VSS	Power		
48	VDD	Power		

* The pin is affected with an I/O function

5. Software Project

5.1. Project Settings

Name	Value
Project Name	F303_Epaper_SPI
Project Folder	C:\Users\javi_\Git\Hub\STM32_Other\F303_Epaper_SPI
Toolchain / IDE	STM32CubeIDE
Firmware Package Name and Version	STM32Cube FW_F3 V1.11.3
Application Structure	Advanced
Generate Under Root	Yes
Do not generate the main()	No
Minimum Heap Size	0x200
Minimum Stack Size	0x400

5.2. Code Generation Settings

Name	Value
STM32Cube MCU packages and embedded software	Copy only the necessary library files
Generate peripheral initialization as a pair of '.c/.h' files	No
Backup previously generated files when re-generating	No
Keep User Code when re-generating	Yes
Delete previously generated files when not re-generated	Yes
Set all free pins as analog (to optimize the power consumption)	No
Enable Full Assert	No

5.3. Advanced Settings - Generated Function Calls

Rank	Function Name	Peripheral Instance Name
1	SystemClock_Config	RCC
2	MX_GPIO_Init	GPIO
3	MX_SPI1_Init	SPI1

6. Power Consumption Calculator report

6.1. Microcontroller Selection

Series	STM32F3
Line	STM32F303
MCU	STM32F303CCTx
Datasheet	DS9118_Rev13

6.2. Parameter Selection

Temperature	25
Vdd	3.6

6.3. Battery Selection

Battery	Li-SOCL2(A3400)
Capacity	3400.0 mAh
Self Discharge	0.08 %/month
Nominal Voltage	3.6 V
Max Cont Current	100.0 mA
Max Pulse Current	200.0 mA
Cells in series	1
Cells in parallel	1

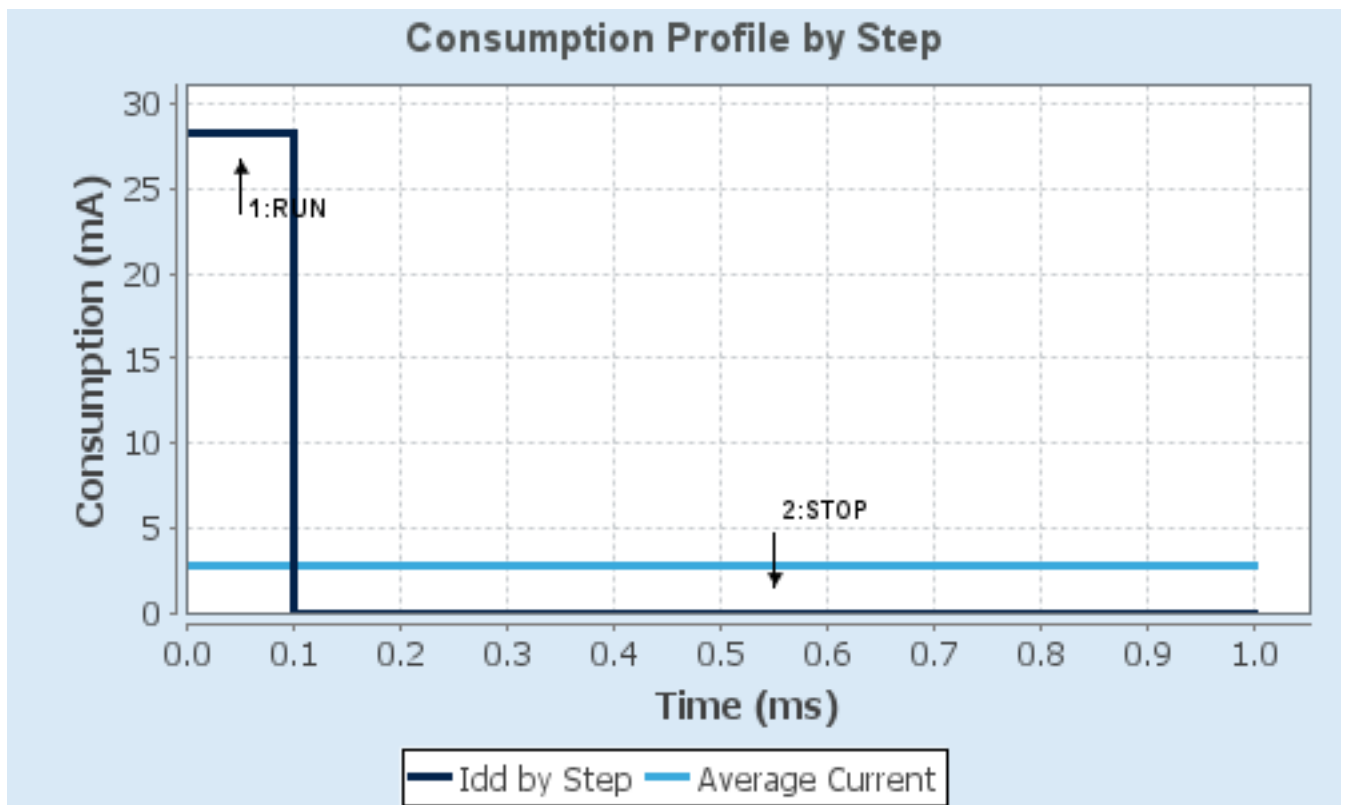
6.4. Sequence

Step	Step1	Step2
Mode	RUN	STOP
Vdd	3.6	3.6
Voltage Source	Battery	Battery
Range	No Scale	No Scale
Fetch Type	FLASH	n/a
CPU Frequency	72 MHz	0 Hz
Clock Configuration	HSE PLL	Regulator LP
Clock Source Frequency	8 MHz	0 Hz
Peripherals		
Additional Cons.	0 mA	0 mA
Average Current	28.24 mA	10.85 μ A
Duration	0.1 ms	0.9 ms
DMIPS	63.0	0.0
Ta Max	99.41	105
Category	In DS Table	In DS Table

6.5. Results

Sequence Time	1 ms	Average Current	2.83 mA
Battery Life	1 month, 19 days, 12 hours	Average DMIPS	63.0 DMIPS

6.6. Chart



7. Peripherals and Middlewares Configuration

7.1. RCC

Low Speed Clock (LSE) : Crystal/Ceramic Resonator

7.1.1. Parameter Settings:

System Parameters:

VDD voltage (V)	3.3
Prefetch Buffer	Enabled
Flash Latency(WS)	0 WS (1 CPU cycle)

RCC Parameters:

HSI Calibration Value	16
HSE Startup Timeout Value (ms)	100
LSE Startup Timeout Value (ms)	5000

7.2. SPI1

Mode: Full-Duplex Master

7.2.1. Parameter Settings:

Basic Parameters:

Frame Format	Motorola
Data Size	8 Bits *
First Bit	MSB First

Clock Parameters:

Prescaler (for Baud Rate)	64 *
Baud Rate	375.0 KBits/s *
Clock Polarity (CPOL)	Low
Clock Phase (CPHA)	1 Edge

Advanced Parameters:

CRC Calculation	Disabled
NSSP Mode	Enabled
NSS Signal Type	Software

7.3. SYS

Debug: Serial Wire

Timebase Source: SysTick

*** User modified value**

8. System Configuration

8.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
RCC	PC14-OSC32_IN	RCC_OSC32_IN	n/a	n/a	n/a	
	PC15-OSC32_OUT	RCC_OSC32_OUT	n/a	n/a	n/a	
SPI1	PA5	SPI1_SCK	Alternate Function Push Pull	No pull-up and no pull-down	High *	
	PA6	SPI1_MISO	Alternate Function Push Pull	No pull-up and no pull-down	High *	
	PA7	SPI1_MOSI	Alternate Function Push Pull	No pull-up and no pull-down	High *	
SYS	PA13	SYS_JTMS-SWDIO	n/a	n/a	n/a	
	PA14	SYS_JTCK-SWCLK	n/a	n/a	n/a	
GPIO	PC13	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	

8.2. DMA configuration

nothing configured in DMA service

8.3. NVIC configuration

8.3.1. NVIC

Interrupt Table	Enable	Preenmption Priority	SubPriority
Non maskable interrupt	true	0	0
Hard fault interrupt	true	0	0
Memory management fault	true	0	0
Pre-fetch fault, memory access fault	true	0	0
Undefined instruction or illegal state	true	0	0
System service call via SWI instruction	true	0	0
Debug monitor	true	0	0
Pendable request for system service	true	0	0
System tick timer	true	15	0
PVD interrupt through EXTI line16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
SPI1 global interrupt	unused		
Floating point unit interrupt	unused		

8.3.2. NVIC Code generation

Enabled interrupt Table	Select for init sequence ordering	Generate IRQ handler	Call HAL handler
Non maskable interrupt	false	true	false
Hard fault interrupt	false	true	false
Memory management fault	false	true	false
Pre-fetch fault, memory access fault	false	true	false
Undefined instruction or illegal state	false	true	false
System service call via SWI instruction	false	true	false
Debug monitor	false	true	false
Pendable request for system service	false	true	false
System tick timer	false	true	true

* User modified value

9. System Views

9.1. Category view

9.1.1. Current

Middleware

System Core	Analog	Timers	Connectivity	Multimedia	Computing
DMA			SPI1		
GPIO					
IIVIC					
RCC					
SYS					

10. Docs & Resources

Type	Link
Presentations	https://www.st.com/resource/en/product_presentation/stm32-stm8_embedded_software_solutions.pdf
Presentations	https://www.st.com/resource/en/product_presentation/stm32_eval-tools_portfolio.pdf
Presentations	https://www.st.com/resource/en/product_presentation/stm32_stm8_functional-safety-packages.pdf
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