1. Description

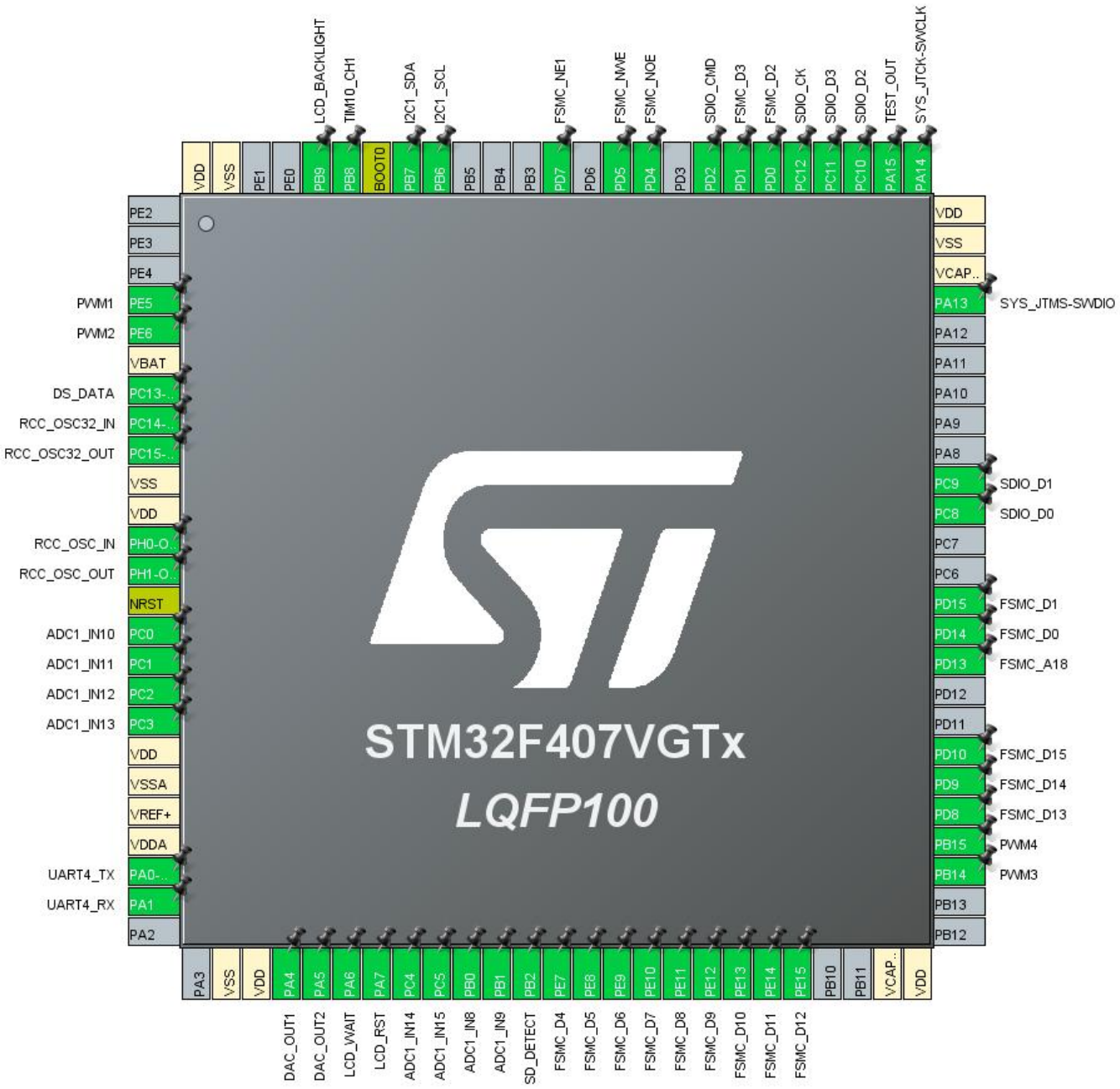
1.1. Project

Project Name	RA8875_test
Board Name	nextion_hmi
Generated with:	STM32CubeMX 5.6.0
Date	04/13/2020

1.2. MCU

MCU Series	STM32F4
MCU Line	STM32F407/417
MCU name	STM32F407VGTx
MCU Package	LQFP100
MCU Pin number	100

2. Pinout Configuration



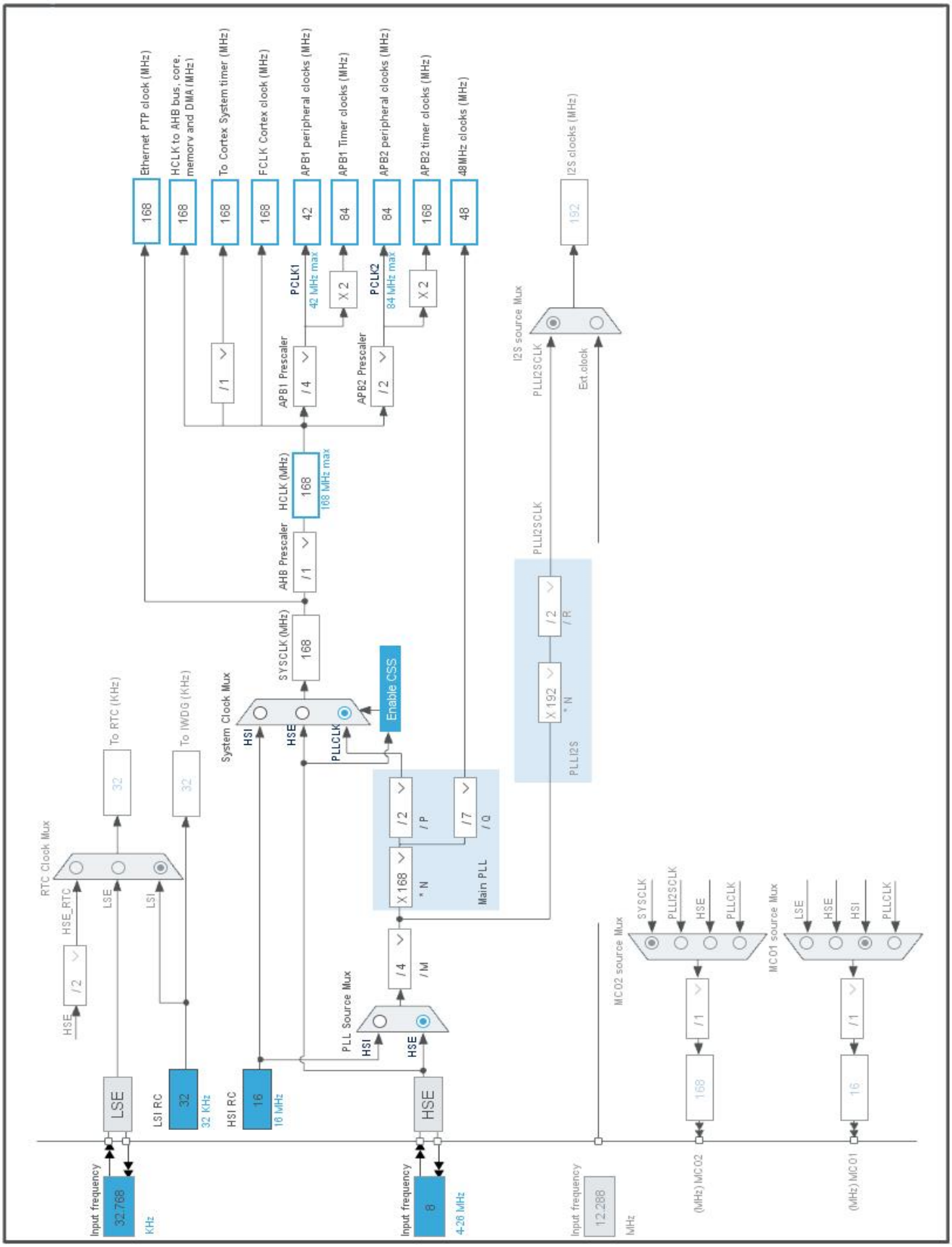
3. Pins Configuration

Pin Number LQFP100	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
4	PE5	I/O	TIM9_CH1	PWM1
5	PE6	I/O	TIM9_CH2	PWM2
6	VBAT	Power		
7	PC13-ANTI_TAMP *	I/O	GPIO_Input	DS_DATA
8	PC14-OSC32_IN	I/O	RCC_OSC32_IN	
9	PC15-OSC32_OUT	I/O	RCC_OSC32_OUT	
10	VSS	Power		
11	VDD	Power		
12	PH0-OSC_IN	I/O	RCC_OSC_IN	
13	PH1-OSC_OUT	I/O	RCC_OSC_OUT	
14	NRST	Reset		
15	PC0	I/O	ADC1_IN10	
16	PC1	I/O	ADC1_IN11	
17	PC2	I/O	ADC1_IN12	
18	PC3	I/O	ADC1_IN13	
19	VDD	Power		
20	VSSA	Power		
21	VREF+	Power		
22	VDDA	Power		
23	PA0-WKUP	I/O	UART4_TX	
24	PA1	I/O	UART4_RX	
27	VSS	Power		
28	VDD	Power		
29	PA4	I/O	DAC_OUT1	
30	PA5	I/O	DAC_OUT2	
31	PA6 *	I/O	GPIO_Input	LCD_WAIT
32	PA7 *	I/O	GPIO_Output	LCD_RST
33	PC4	I/O	ADC1_IN14	
34	PC5	I/O	ADC1_IN15	
35	PB0	I/O	ADC1_IN8	
36	PB1	I/O	ADC1_IN9	
37	PB2 *	I/O	GPIO_Input	SD_DETECT
38	PE7	I/O	FSMC_D4	
39	PE8	I/O	FSMC_D5	
40	PE9	I/O	FSMC_D6	
41	PE10	I/O	FSMC_D7	

Pin Number LQFP100	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
42	PE11	I/O	FSMC_D8	
43	PE12	I/O	FSMC_D9	
44	PE13	I/O	FSMC_D10	
45	PE14	I/O	FSMC_D11	
46	PE15	I/O	FSMC_D12	
49	VCAP_1	Power		
50	VDD	Power		
53	PB14	I/O	TIM12_CH1	PWM3
54	PB15	I/O	TIM12_CH2	PWM4
55	PD8	I/O	FSMC_D13	
56	PD9	I/O	FSMC_D14	
57	PD10	I/O	FSMC_D15	
60	PD13	I/O	FSMC_A18	
61	PD14	I/O	FSMC_D0	
62	PD15	I/O	FSMC_D1	
65	PC8	I/O	SDIO_D0	
66	PC9	I/O	SDIO_D1	
72	PA13	I/O	SYS_JTMS-SWDIO	
73	VCAP_2	Power		
74	VSS	Power		
75	VDD	Power		
76	PA14	I/O	SYS_JTCK-SWCLK	
77	PA15 *	I/O	GPIO_Output	TEST_OUT
78	PC10	I/O	SDIO_D2	
79	PC11	I/O	SDIO_D3	
80	PC12	I/O	SDIO_CK	
81	PD0	I/O	FSMC_D2	
82	PD1	I/O	FSMC_D3	
83	PD2	I/O	SDIO_CMD	
85	PD4	I/O	FSMC_NOE	
86	PD5	I/O	FSMC_NWE	
88	PD7	I/O	FSMC_NE1	
92	PB6	I/O	I2C1_SCL	
93	PB7	I/O	I2C1_SDA	
94	BOOT0	Boot		
95	PB8	I/O	TIM10_CH1	
96	PB9	I/O	TIM11_CH1	LCD_BACKLIGHT
99	VSS	Power		
100	VDD	Power		

* The pin is affected with an I/O function

4. Clock Tree Configuration



5. Software Project

5.1. Project Settings

Name	Value
Project Name	RA8875_test
Project Folder	E:\Projects\RA8875_test
Toolchain / IDE	Other Toolchains (GPDSC)
Firmware Package Name and Version	STM32Cube FW_F4 V1.25.0

5.2. Code Generation Settings

Name	Value
STM32Cube MCU packages and embedded software	Copy all used libraries into the project folder
Generate peripheral initialization as a pair of '.c/.h' files	No
Backup previously generated files when re-generating	No
Delete previously generated files when not re-generated	Yes
Set all free pins as analog (to optimize the power consumption)	No

6. Power Consumption Calculator report

6.1. Microcontroller Selection

Series	STM32F4
Line	STM32F407/417
MCU	STM32F407VGTx
Datasheet	022152_Rev8

6.2. Parameter Selection

Temperature	25
Vdd	3.3

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

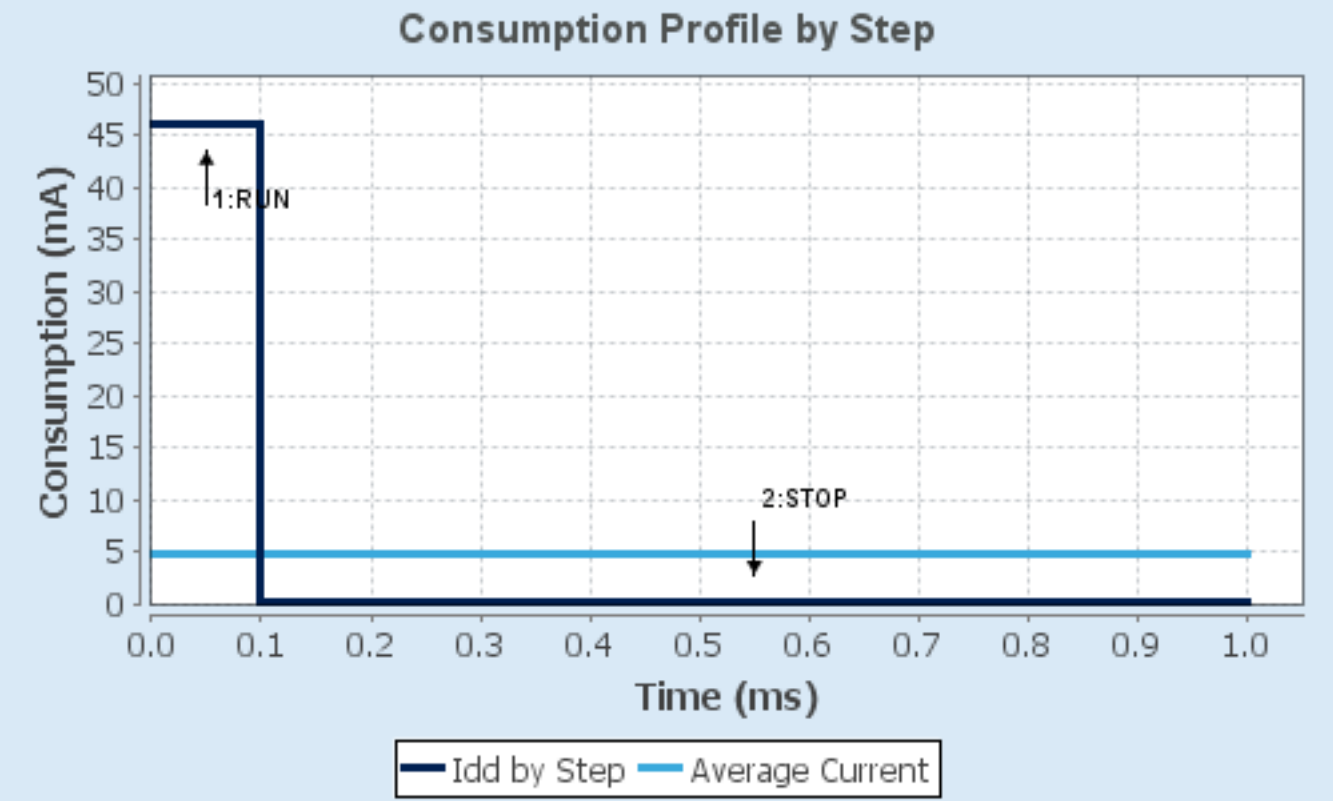
6.4. Sequence

Step	Step1	Step2
Mode	RUN	STOP
Vdd	3.3	3.3
Voltage Source	Battery	Battery
Range	Scale1-High	No Scale
Fetch Type	FLASH	n/a
CPU Frequency	168 MHz	0 Hz
Clock Configuration	HSE PLL	Regulator_LP Flash-PwrDwn
Clock Source Frequency	4 MHz	0 Hz
Peripherals		
Additional Cons.	0 mA	0 mA
Average Current	46 mA	280 µA
Duration	0.1 ms	0.9 ms
DMIPS	210.0	0.0
Ta Max	98.47	104.96
Category	In DS Table	In DS Table

6.5. RESULTS

Sequence Time	1 ms	Average Current	4.85 mA
Battery Life	29 days, 4 hours	Average DMIPS	210.0 DMIPS

6.6. Chart


Consumption Profile by Step
Consumption (mA)
50
45
40
35
30
25
20
15
10
5
0
1:RUN
2:STOP
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Time (ms)
Idd by Step
Average Current

7. IPs and Middleware Configuration

7.1. ADC1

mode: IN8

mode: IN9

mode: IN10

mode: IN11

mode: IN12

mode: IN13

mode: IN14

mode: IN15

mode: Temperature Sensor Channel

mode: Vrefint Channel

7.1.1. Parameter Settings:

ADCs_Common_Settings:

Mode	Independent mode

ADC_Settings:

Clock Prescaler	PCLK2 divided by 4
Resolution	**10 bits (13 ADC Clock cycles) ***
Data Alignment	Right alignment
Scan Conversion Mode	Enabled
Continuous Conversion Mode	**Enabled ***
Discontinuous Conversion Mode	Disabled
DMA Continuous Requests	**Enabled ***
End Of Conversion Selection	**EOC flag at the end of all conversions ***

ADC_Regular_ConversionMode:

Number Of Conversion	**10 ***
External Trigger Conversion Source	Regular Conversion launched by software
External Trigger Conversion Edge	None
Rank	1
Channel	Channel 8
Sampling Time	**480 Cycles ***
Rank	**2 ***
Channel	**Channel 9 ***
Sampling Time	**480 Cycles ***
Rank	**3 ***
Channel	**Channel 10 ***

Sampling Time	**480 Cycles ***
Rank	**4 ***
Channel	**Channel 11 ***
Sampling Time	**480 Cycles ***
Rank	**5 ***
Channel	**Channel 12 ***
Sampling Time	**480 Cycles ***
Rank	**6 ***
Channel	**Channel 13 ***
Sampling Time	**480 Cycles ***
Rank	**7 ***
Channel	**Channel 14 ***
Sampling Time	**480 Cycles ***
Rank	**8 ***
Channel	**Channel 15 ***
Sampling Time	**480 Cycles ***
Rank	**9 ***
Channel	**Channel Vrefint ***
Sampling Time	**480 Cycles ***
Rank	**10 ***
Channel	**Channel Temperature Sensor ***
Sampling Time	**480 Cycles ***
ADC_Injected_ConversionMode:	
Number Of Conversions	0
WatchDog:	
Enable Analog WatchDog Mode	false

7.2. CRC

mode: Activated

7.3. DAC

mode: OUT1 Configuration

mode: OUT2 Configuration

7.3.1. Parameter Settings:

DAC Out1 Settings:

Output Buffer	Enable
Trigger	None

DAC Out2 Settings:

Output Buffer	Enable
Trigger	None

7.4. FSMC

NOR Flash/PSRAM/SRAM/ROM/LCD 1

Chip Select: set

Memory type: LCD Interface

LCD Register Select: A18

Data: 16 bits

7.4.1. NOR/PSRAM 1:

NOR/PSRAM control:

Memory type	LCD Interface
Bank	Bank 1 NOR/PSRAM 1
Write operation	Enabled
Extended mode	Disabled

NOR/PSRAM timing:

Address setup time in HCLK clock cycles	**5 ***
Data setup time in HCLK clock cycles	**9 ***
Bus turn around time in HCLK clock cycles	**0 ***

7.5. GPIO

7.6. I2C1

I2C: I2C

7.6.1. Parameter Settings:

Master Features:

I2C Speed Mode	Standard Mode
I2C Clock Speed (Hz)	100000

Slave Features:

Clock No Stretch Mode	Disabled
Primary Address Length selection	7-bit
Dual Address Acknowledged	Disabled
Primary slave address	0
General Call address detection	Disabled

7.7. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

Low Speed Clock (LSE) : Crystal/Ceramic Resonator

7.7.1. Parameter Settings:

System Parameters:

VDD voltage (V)	3.3
Instruction Cache	Enabled
Prefetch Buffer	Enabled
Data Cache	Enabled
Flash Latency(WS)	5 WS (6 CPU cycle)

RCC Parameters:

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

Power Parameters:

Power Regulator Voltage Scale	Power Regulator Voltage Scale 1

7.8. SDIO

Mode: SD 4 bits Wide bus

7.8.1. Parameter Settings:

SDIO parameters:

Clock transition on which the bit capture is made	Rising transition
SDIO Clock divider bypass	Disable
SDIO Clock output enable when the bus is idle	Disable the power save for the clock
SDIO hardware flow control	The hardware control flow is disabled
SDIOCLK clock divide factor	0

7.9. SYS

Debug: Serial Wire

Timebase Source: TIM6

7.10. TIM7

mode: Activated

7.10.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**84 ***
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**65535 ***
auto-reload preload	Disable

Trigger Output (TRGO) Parameters:

Trigger Event Selection	Reset (UG bit from TIMx_EGR)

7.11. TIM9

mode: Clock Source

Channel1: PWM Generation CH1

Channel2: PWM Generation CH2

7.11.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**16800 ***
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**100 ***
Internal Clock Division (CKD)	No Division
auto-reload preload	Disable

PWM Generation Channel 1:

Mode	PWM mode 1
Pulse (16 bits value)	0
Output compare preload	Enable
Fast Mode	Disable
CH Polarity	High

PWM Generation Channel 2:

Mode	PWM mode 1
Pulse (16 bits value)	0
Output compare preload	Enable
Fast Mode	Disable
CH Polarity	High

7.12. TIM10

mode: Activated

Channel1: PWM Generation CH1

7.12.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**1200 ***
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**100 ***
Internal Clock Division (CKD)	No Division
auto-reload preload	Disable

PWM Generation Channel 1:

Mode	PWM mode 1
Pulse (16 bits value)	**50 ***
Output compare preload	Enable
Fast Mode	Disable
CH Polarity	High

7.13. TIM11

mode: Activated

Channel1: PWM Generation CH1

7.13.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**16800 ***
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**100 ***
Internal Clock Division (CKD)	No Division
auto-reload preload	Disable

PWM Generation Channel 1:

Mode	PWM mode 1
Pulse (16 bits value)	**50 ***
Output compare preload	Enable
Fast Mode	Disable
CH Polarity	High

7.14. TIM12

mode: Clock Source

Channel1: PWM Generation CH1

Channel2: PWM Generation CH2

7.14.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**16800 ***
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**100 ***
Internal Clock Division (CKD)	No Division
auto-reload preload	Disable

PWM Generation Channel 1:

Mode	PWM mode 1
Pulse (16 bits value)	0
Output compare preload	Enable
Fast Mode	Disable
CH Polarity	High

PWM Generation Channel 2:

Mode	PWM mode 1
Pulse (16 bits value)	0
Output compare preload	Enable
Fast Mode	Disable
CH Polarity	High

7.15. UART4

Mode: Asynchronous

7.15.1. Parameter Settings:

Basic Parameters:

Baud Rate	115200
Word Length	8 Bits (including Parity)
Parity	None
Stop Bits	1

Advanced Parameters:

Data Direction	Receive and Transmit
Over Sampling	16 Samples

7.16. FATFS

mode: SD Card

7.16.1. Set Defines:

Version:

FATFS version	R0.12c

Function Parameters:

FS_READONLY (Read-only mode)	Disabled
FS_MINIMIZE (Minimization level)	Disabled
USE_STRFUNC (String functions)	Enabled with LF -> CRLF conversion
USE_FIND (Find functions)	Disabled
USE_MKFS (Make filesystem function)	Enabled
USE_FASTSEEK (Fast seek function)	Enabled
USE_EXPAND (Use f_expand function)	Disabled
USE_CHMOD (Change attributes function)	Disabled
USE_LABEL (Volume label functions)	Disabled
USE_FORWARD (Forward function)	Disabled

Locale and Namespace Parameters:

CODE_PAGE (Code page on target)	Latin 1
USE_LFN (Use Long Filename)	Disabled
MAX_LFN (Max Long Filename)	255
LFN_UNICODE (Enable Unicode)	ANSI/OEM
STRF_ENCODE (Character encoding)	UTF-8
FS_RPATH (Relative Path)	Disabled

Physical Drive Parameters:

VOLUMES (Logical drives)	1
MAX_SS (Maximum Sector Size)	512
MIN_SS (Minimum Sector Size)	512
MULTI_PARTITION (Volume partitions feature)	Disabled
USE_TRIM (Erase feature)	Disabled
FS_NOFSINFO (Force full FAT scan)	0

System Parameters:

FS_TINY (Tiny mode)	Disabled
FS_EXFAT (Support of exFAT file system)	Disabled
FS_NORTC (Timestamp feature)	Dynamic timestamp
FS_REENTRANT (Re-Entrancy)	Enabled
FS_TIMEOUT (Timeout ticks)	1000
USE_MUTEX	Disabled
SYNC_t (O/S sync object)	osSemaphoreId
FS_LOCK (Number of files opened simultaneously)	2

7.16.2. Advanced Settings:

SDIO/SDMMC:

SDIO instance	SDIO
Use dma template	Enabled
BSP code for SD	Generic

7.17. FREERTOS

Interface: CMSIS_V1

7.17.1. Config parameters:

API:

FreeRTOS API	CMSIS v1

Versions:

FreeRTOS version	10.2.1
CMSIS-RTOS version	1.02

MPU/FPU:

ENABLE_MPU	Disabled
ENABLE_FPU	Disabled

Kernel settings:

USE_PREEMPTION	Enabled
CPU_CLOCK_HZ	SystemCoreClock
TICK_RATE_HZ	1000
MAX_PRIORITIES	7
MINIMAL_STACK_SIZE	128
MAX_TASK_NAME_LEN	16
USE_16_BIT_TICKS	Disabled
IDLE_SHOULD_YIELD	Enabled
USE_MUTEXES	Enabled

USE_RECURSIVE_MUTEXES	Disabled
USE_COUNTING_SEMAPHORES	Disabled
QUEUE_REGISTRY_SIZE	8
USE_APPLICATION_TASK_TAG	Disabled
ENABLE_BACKWARD_COMPATIBILITY	Enabled
USE_PORT_OPTIMISED_TASK_SELECTION	Enabled
USE_TICKLESS_IDLE	Disabled
USE_TASK_NOTIFICATIONS	Enabled
RECORD_STACK_HIGH_ADDRESS	Disabled

Memory management settings:

Memory Allocation	Dynamic / Static
TOTAL_HEAP_SIZE	15360
Memory Management scheme	heap_4

Hook function related definitions:

USE_IDLE_HOOK	Disabled
USE_TICK_HOOK	Disabled
USE_MALLOC_FAILED_HOOK	Disabled
USE_DAEMON_TASK_STARTUP_HOOK	Disabled
CHECK_FOR_STACK_OVERFLOW	Disabled

Run time and task stats gathering related definitions:

GENERATE_RUN_TIME_STATS	Disabled
USE_TRACE_FACILITY	Disabled
USE_STATS_FORMATTING_FUNCTIONS	Disabled

Co-routine related definitions:

USE_CO_ROUTINES	Disabled
MAX_CO_ROUTINE_PRIORITIES	2

Software timer definitions:

USE_TIMERS	**Enabled ***
TIMER_TASK_PRIORITY	2
TIMER_QUEUE_LENGTH	10
TIMER_TASK_STACK_DEPTH	256

Interrupt nesting behaviour configuration:

LIBRARY_LOWEST_INTERRUPT_PRIORITY	15
LIBRARY_MAX_SYSCALL_INTERRUPT_PRIORITY	5

Added with 10.2.1 support:

MESSAGE_BUFFER_LENGTH_TYPE	size_t
USE_POSIX_ERRNO	Disabled

7.17.2. Include parameters:

Include definitions:

vTaskPrioritySet	Enabled
uxTaskPriorityGet	Enabled
vTaskDelete	Enabled
vTaskCleanUpResources	Disabled
vTaskSuspend	Enabled
vTaskDelayUntil	Disabled
vTaskDelay	Enabled
xTaskGetSchedulerState	Enabled
xTaskResumeFromISR	Enabled
xQueueGetMutexHolder	Disabled
xSemaphoreGetMutexHolder	Disabled
pcTaskGetTaskName	Disabled
uxTaskGetStackHighWaterMark	Disabled
xTaskGetCurrentTaskHandle	Disabled
eTaskGetState	Disabled
xEventGroupSetBitFromISR	Disabled
xTimerPendFunctionCall	Disabled
xTaskAbortDelay	Disabled
xTaskGetHandle	Disabled
uxTaskGetStackHighWaterMark2	Disabled

7.17.3. Advanced settings:

Newlib settings (see parameter description first):

USE_NEWLIB_REENTRANT	Disabled

Project settings (see parameter description first):

Use FW pack heap file	Enabled

*** User modified value**

8. System Configuration

8.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
ADC1	PC0	ADC1_IN10	Analog mode	No pull-up and no pull-down	n/a	
	PC1	ADC1_IN11	Analog mode	No pull-up and no pull-down	n/a	
	PC2	ADC1_IN12	Analog mode	No pull-up and no pull-down	n/a	
	PC3	ADC1_IN13	Analog mode	No pull-up and no pull-down	n/a	
	PC4	ADC1_IN14	Analog mode	No pull-up and no pull-down	n/a	
	PC5	ADC1_IN15	Analog mode	No pull-up and no pull-down	n/a	
	PB0	ADC1_IN8	Analog mode	No pull-up and no pull-down	n/a	
	PB1	ADC1_IN9	Analog mode	No pull-up and no pull-down	n/a	
DAC	PA4	DAC_OUT1	Analog mode	No pull-up and no pull-down	n/a	
	PA5	DAC_OUT2	Analog mode	No pull-up and no pull-down	n/a	
FSMC	PE7	FSMC_D4	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PE8	FSMC_D5	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PE9	FSMC_D6	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PE10	FSMC_D7	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PE11	FSMC_D8	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PE12	FSMC_D9	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PE13	FSMC_D10	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PE14	FSMC_D11	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PE15	FSMC_D12	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PD8	FSMC_D13	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PD9	FSMC_D14	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PD10	FSMC_D15	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PD13	FSMC_A18	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PD14	FSMC_D0	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PD15	FSMC_D1	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PD0	FSMC_D2	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PD1	FSMC_D3	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PD4	FSMC_NOE	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PD5	FSMC_NWE	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PD7	FSMC_NE1	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
I2C1	PB6	I2C1_SCL	Alternate Function Open Drain	Pull-up	**High ***	
	PB7	I2C1_SDA	Alternate Function Open Drain	Pull-up	**High ***	
RCC	PC14-OSC32_IN	RCC_OSC32_IN	n/a	n/a	n/a	

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
	PC15-OSC32_OUT	RCC_OSC32_OUT	n/a	n/a	n/a	
	PH0-OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	
	PH1-OSC_OUT	RCC_OSC_OUT	n/a	n/a	n/a	
SDIO	PC8	SDIO_D0	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PC9	SDIO_D1	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PC10	SDIO_D2	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PC11	SDIO_D3	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PC12	SDIO_CK	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PD2	SDIO_CMD	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
SYS	PA13	SYS_JTMS-SWDIO	n/a	n/a	n/a	
	PA14	SYS_JTCK-SWCLK	n/a	n/a	n/a	
TIM9	PE5	TIM9_CH1	Alternate Function Push Pull	No pull-up and no pull-down	Low	PWM1
	PE6	TIM9_CH2	Alternate Function Push Pull	No pull-up and no pull-down	Low	PWM2
TIM10	PB8	TIM10_CH1	Alternate Function Push Pull	No pull-up and no pull-down	Low	
TIM11	PB9	TIM11_CH1	Alternate Function Push Pull	No pull-up and no pull-down	Low	LCD_BACKLIGHT
TIM12	PB14	TIM12_CH1	Alternate Function Push Pull	No pull-up and no pull-down	Low	PWM3
	PB15	TIM12_CH2	Alternate Function Push Pull	No pull-up and no pull-down	Low	PWM4
UART4	PA0-WKUP	UART4_TX	Alternate Function Push Pull	Pull-up	**Very High ***	
	PA1	UART4_RX	Alternate Function Push Pull	Pull-up	**Very High ***	
GPIO	PC13-ANTI_TAMP	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	DS_DATA
	PA6	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	LCD_WAIT
	PA7	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LCD_RST
	PB2	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	SD_DETECT
	PA15	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	TEST_OUT

8.2. DMA configuration

DMA request	Stream	Direction	Priority
ADC1	DMA2_Stream0	Peripheral To Memory	**Medium ***

ADC1: DMA2_Stream0 DMA request Settings:

Mode:	**Circular ***
Use fifo:	Disable
Peripheral Increment:	Disable
Memory Increment:	**Enable ***
Peripheral Data Width:	Half Word
Memory Data Width:	Half Word

8.3. NVIC configuration

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	15	0
System tick timer	true	15	0
TIM6 global interrupt, DAC1 and DAC2 underrun error interrupts	true	0	0
DMA2 stream0 global interrupt	true	5	0
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
ADC1, ADC2 and ADC3 global interrupts	unused		
TIM1 break interrupt and TIM9 global interrupt	unused		
TIM1 update interrupt and TIM10 global interrupt	unused		
TIM1 trigger and commutation interrupts and TIM11 global interrupt	unused		
I2C1 event interrupt	unused		
I2C1 error interrupt	unused		
TIM8 break interrupt and TIM12 global interrupt	unused		
SDIO global interrupt	unused		
UART4 global interrupt	unused		
TIM7 global interrupt	unused		
FPU global interrupt	unused		

*** User modified value**

9. Predefined Views - Category view : Current

10. Software Pack Report

10.1. Software Pack selected

Vendor	Name	Version	Component
STMicroelectronics	FreeRTOS	0.0.1	Class : CMSIS Group : RTOS SubGroup : FreeRTOS Version : 10.2.0 Class : RTOS Group : Core Version : 10.2.0