1. Description

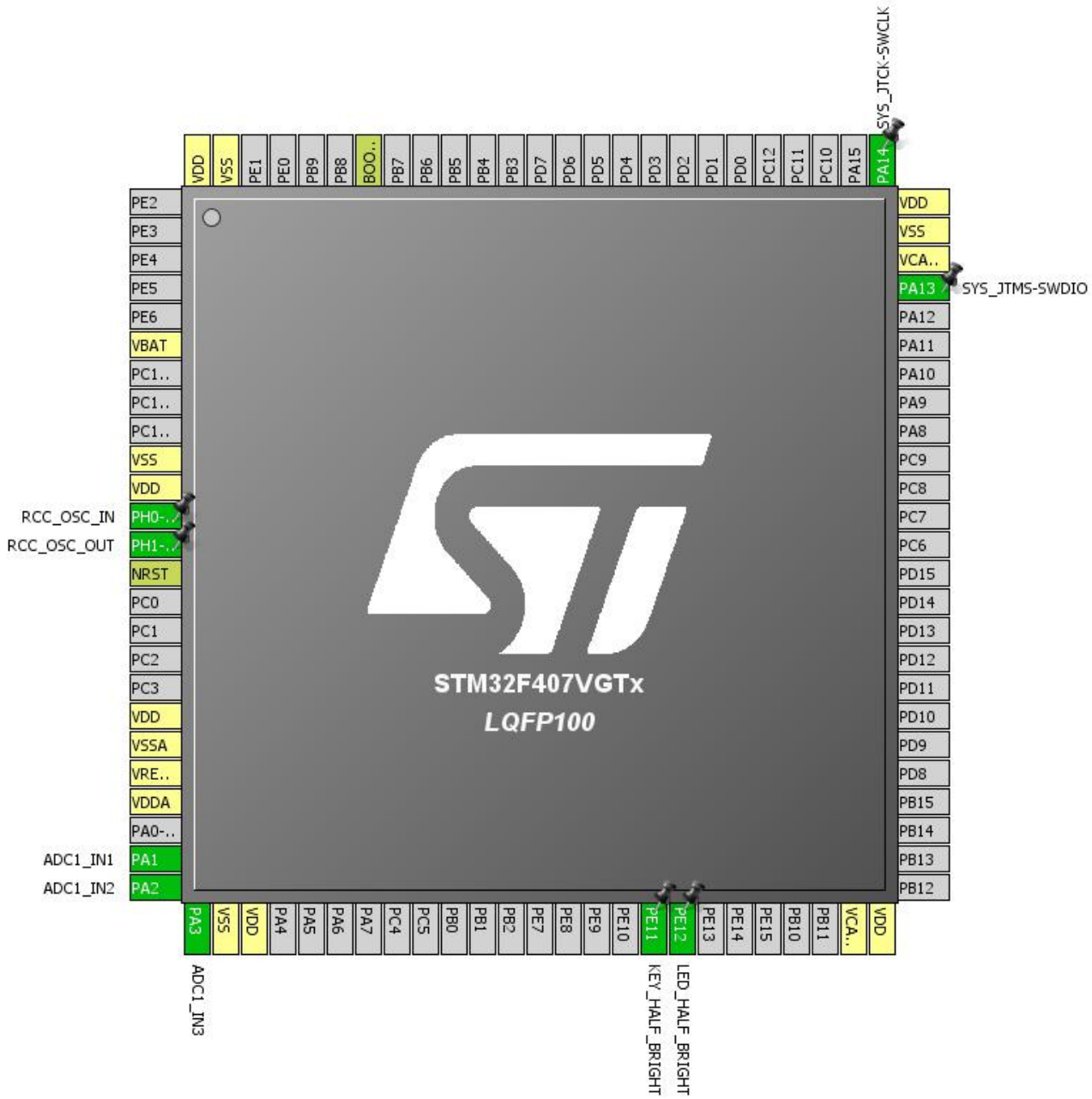
1.1. Project

Project Name	main_board
Board Name	main_board
Generated with:	STM32CubeMX 4.9.0
Date	09/25/2015

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
6	VBAT	Power		
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		
19	VDD	Power		
20	VSSA	Power		
21	VREF+	Power		
22	VDDA	Power		
24	PA1	I/O	ADC1_IN1	
25	PA2	I/O	ADC1_IN2	
26	PA3	I/O	ADC1_IN3	
27	VSS	Power		
28	VDD	Power		
42	PE11	I/O	GPIO_EXTI11	KEY_HALF_BRIGHT
43	PE12 *	I/O	GPIO_Output	LED_HALF_BRIGHT
49	VCAP_1	Power		
50	VDD	Power		
72	PA13	I/O	SYS_JTMS-SWDIO	
73	VCAP_2	Power		
74	VSS	Power		
75	VDD	Power		
76	PA14	I/O	SYS_JTCK-SWCLK	
94	BOOT0	Boot		
99	VSS	Power		
100	VDD	Power		

* The pin is affected with an I/O function

4. IPs and Middleware Configuration

4.1. ADC1

mode: IN1

mode: IN2

mode: IN3

ADCs_Common_Settings:

Mode	Independent mode

ADC_Settings:

Clock Prescaler	**PCLK2 divided by 8 ***
Resolution	12 bits (15 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 single channel conversion

ADCgroup:

Number Of Conversion	**3 ***
External Trigger Conversion Edge	None
Number Of Conversions	0
Number Of Conversion	**3 ***
External Trigger Conversion Edge	None
Number Of Conversion	**3 ***
External Trigger Conversion Edge	None
Number Of Conversion	**3 ***
External Trigger Conversion Edge	None

WatchDog:

Enable Analog WatchDog Mode	false

ADC_Regular_ConversionMode:

Rank	1
Channel	**Channel 1 ***
Sampling Time	**56 Cycles ***
Rank	**2 ***
Channel	**Channel 1 ***

Sampling Time	**56 Cycles ***
Rank	**3 ***
Channel	**Channel 3 ***
Sampling Time	**56 Cycles ***

4.2. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

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

Power Parameters:

Power Regulatror Voltage Scale	Power Regulator Voltage Scale 1

4.3. SYS

Debug: Serial Wire Debug (SWD)

*** User modified value**

5. System Configuration

5.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
ADC1	PA1	ADC1_IN1	Analog mode	No pull-up and no pull-down	n/a	
	PA2	ADC1_IN2	Analog mode	No pull-up and no pull-down	n/a	
	PA3	ADC1_IN3	Analog mode	No pull-up and no pull-down	n/a	
RCC	PH0-OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	
	PH1-OSC_OUT	RCC_OSC_OUT	n/a	n/a	n/a	
SYS	PA13	SYS_JTMS-SWDIO	n/a	n/a	n/a	
	PA14	SYS_JTCK-SWCLK	n/a	n/a	n/a	
GPIO	PE11	GPIO_EXTI11	**External Interrupt Mode with Rising/Falling edge**	No pull-up and no pull-down	n/a	KEY_HALF_BRIGHT
	PE12	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED_HALF_BRIGHT

5.2. DMA configuration

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

ADC1: DMA2_Stream0 DMA request Settings:

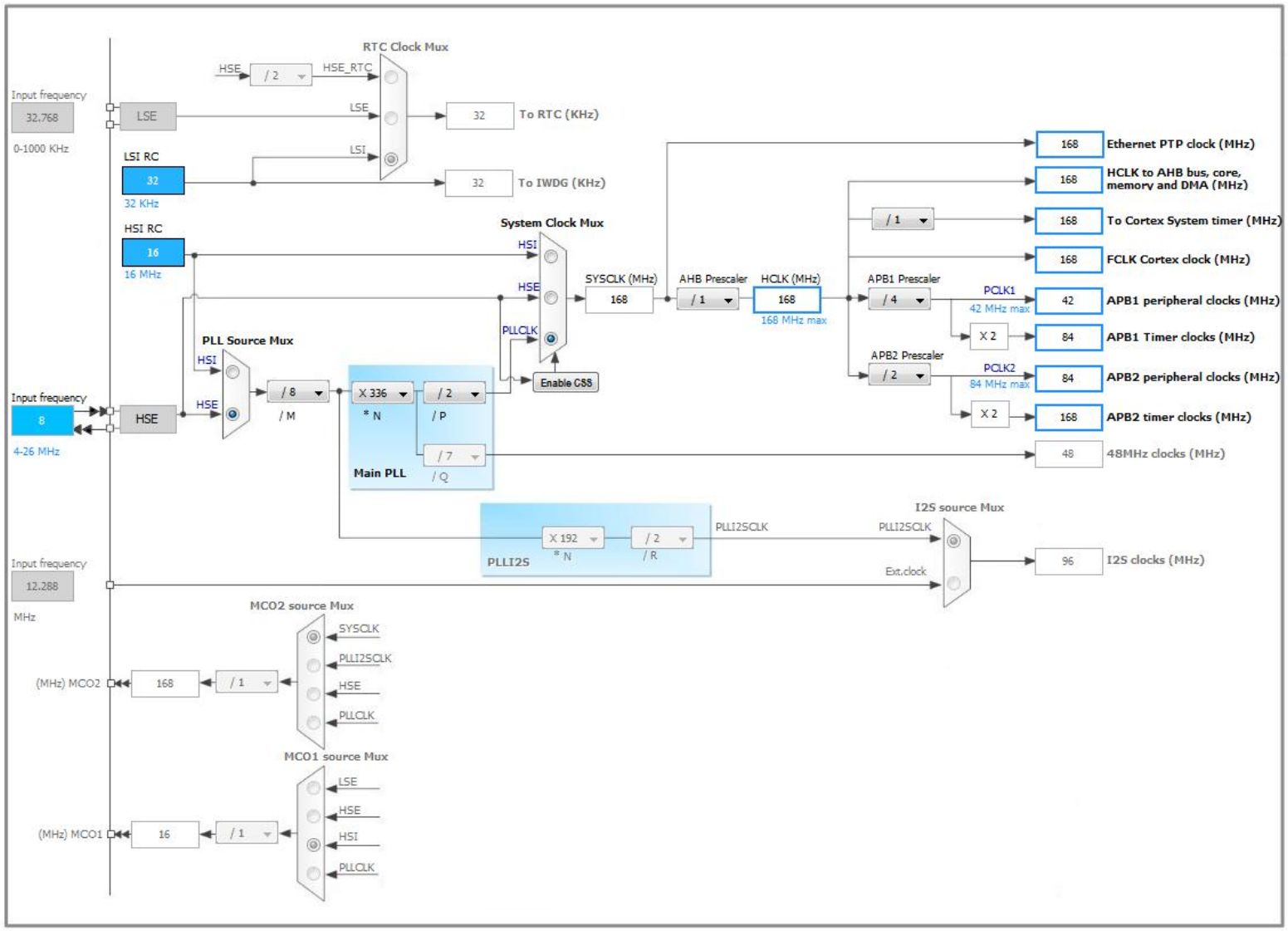
Mode:	Normal
Use fifo:	Disable
PeripheralIncrement:	Disable
MemoryIncrement:	Disable
Peripheral Data Width:	Byte

5.3. NVIC configuration

Interrupt Table	Enable	Preenmption Priority	SubPriority
System tick timer	true	0	0
EXTI Line[15:10] interrupts	true	0	0
DMA2 Stream0 global interrupt	true	0	0
Non Maskable Interrupt	unused		
Memory management fault	unused		
Pre-fetch fault, memory access fault	unused		
Undefined instruction or illegal state	unused		
Debug Monitor	unused		
RCC global interrupt	unused		
ADC1, ADC2 and ADC3 global interrupts	unused		

*** User modified value**

6. Clock Tree Configuration



7. Power Plugin report

7.1. Microcontroller Selection

Series	STM32F4
Line	STM32F407/417
MCU	STM32F407VGTx
Datasheet	022152_Rev5

7.2. Parameter Selection

Temperature	25
Vdd	3.3

8. Software Project

8.1. Project Settings

Name	Value
Project Name	main_board
Project Folder	D:\REPOSITORY\GIT\SnIpErLoCaToR\sl_altium\stm32\MAIN_BOARD\main_bo
Toolchain / IDE	EWARM
Firmware Package Name and Version	STM32Cube FW_F4 V1.7.0

8.2. Code Generation Settings

Name	Value
STM32Cube Firmware Library Package	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

8.3. Toolchains Settings

Name	Value
Compiler Optimizations	Balanced Size/Speed