1. Description

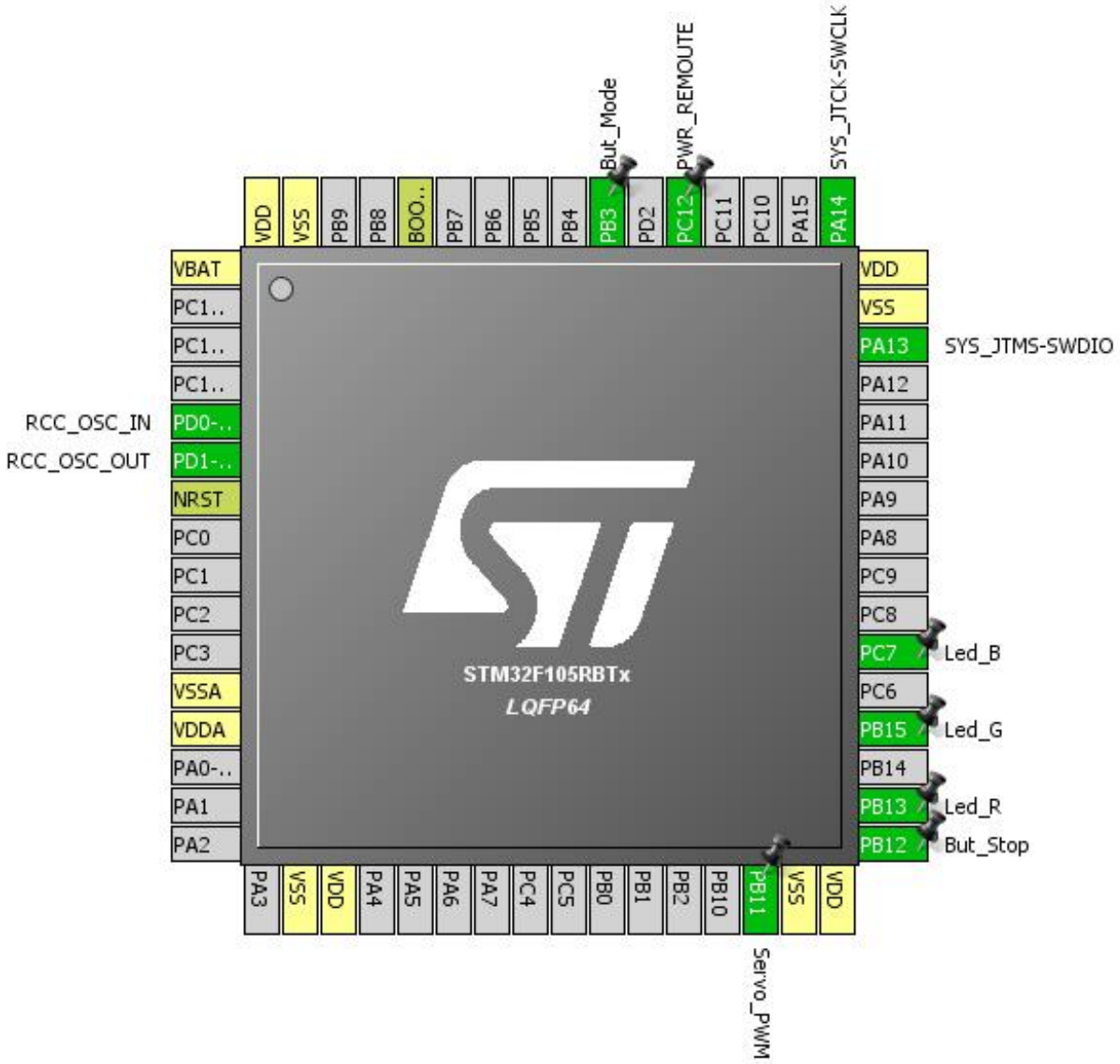
1.1. Project

Project Name	Servo_PWM
Board Name	Servo_PWM
Generated with:	STM32CubeMX 4.20.1
Date	04/25/2017

1.2. MCU

MCU Series	STM32F1
MCU Line	STM32F105/107
MCU name	STM32F105RBTx
MCU Package	LQFP64
MCU Pin number	64

2. Pinout Configuration

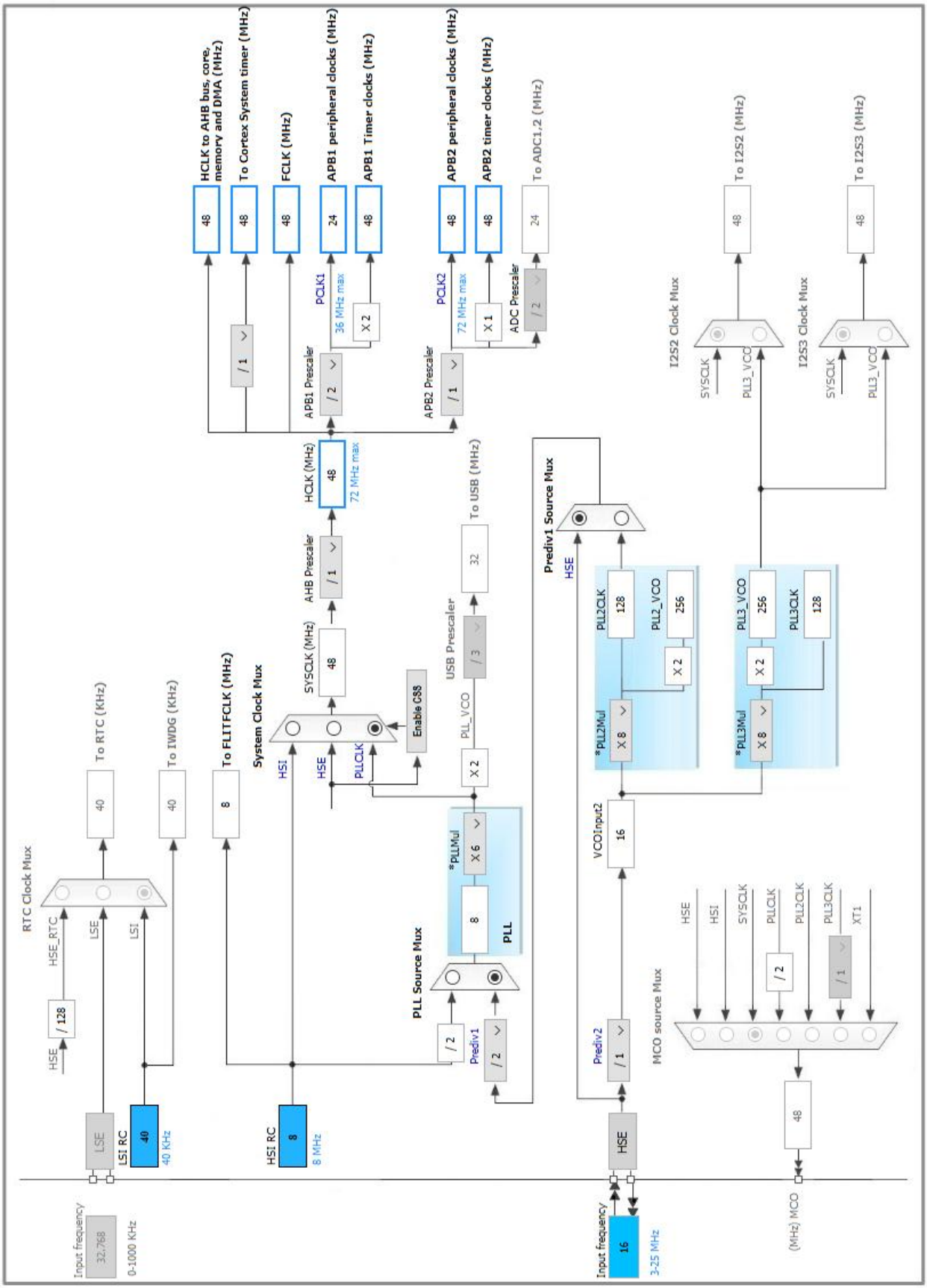


3. Pins Configuration

Pin Number LQFP64	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VBAT	Power		
5	PD0-OSC_IN	I/O	RCC_OSC_IN	
6	PD1-OSC_OUT	I/O	RCC_OSC_OUT	
7	NRST	Reset		
12	VSSA	Power		
13	VDDA	Power		
18	VSS	Power		
19	VDD	Power		
30	PB11	I/O	TIM2_CH4	Servo_PWM
31	VSS	Power		
32	VDD	Power		
33	PB12	I/O	GPIO_EXTI12	But_Stop
34	PB13 *	I/O	GPIO_Output	Led_R
36	PB15 *	I/O	GPIO_Output	Led_G
38	PC7 *	I/O	GPIO_Output	Led_B
46	PA13	I/O	SYS_JTMS-SWDIO	
47	VSS	Power		
48	VDD	Power		
49	PA14	I/O	SYS_JTCK-SWCLK	
53	PC12 *	I/O	GPIO_Output	PWR_REMOUTE
55	PB3	I/O	GPIO_EXTI3	But_Mode
60	BOOT0	Boot		
63	VSS	Power		
64	VDD	Power		

* The pin is affected with an I/O function

4. Clock Tree Configuration



5. IPs and Middleware Configuration

5.1. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

5.1.1. Parameter Settings:

System Parameters:

VDD voltage (V)	3.3
Instruction Cache	Enabled
Prefetch Buffer	Enabled
Data Cache	Enabled
Flash Latency(WS)	1 WS (2 CPU cycle)

RCC Parameters:

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

5.2. SYS

Debug: Serial Wire

Timebase Source: SysTick

5.3. TIM2

Clock Source : Internal Clock

Channel4: PWM Generation CH4

5.3.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**48 ***
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**20000 ***
Internal Clock Division (CKD)	No Division

Trigger Output (TRGO) Parameters:

Master/Slave Mode	Disable (no sync between this TIM (Master) and its Slaves

Trigger Event Selection	Reset (UG bit from TIMx_EGR)

PWM Generation Channel 4:

Mode	PWM mode 1
Pulse (16 bits value)	**1000 ***
Fast Mode	**Enable ***
CH Polarity	High

*** User modified value**

6. System Configuration

6.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
RCC	PD0-OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	
	PD1-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	
TIM2	PB11	TIM2_CH4	Alternate Function Push Pull	n/a	Low	Servo_PWM
GPIO	PB12	GPIO_EXTI12	External Interrupt Mode with Rising edge trigger detection	**Pull-up ***	n/a	But_Stop
	PB13	GPIO_Output	Output Push Pull	**n/a**	Low	Led_R
	PB15	GPIO_Output	Output Push Pull	**n/a**	Low	Led_G
	PC7	GPIO_Output	Output Push Pull	**n/a**	Low	Led_B
	PC12	GPIO_Output	Output Push Pull	**n/a**	Low	PWR_REMOUTE
	PB3	GPIO_EXTI3	External Interrupt Mode with Rising edge trigger detection	**Pull-up ***	n/a	But_Mode

6.2. DMA configuration

nothing configured in DMA service

6.3. 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
Prefetch 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	0	0
EXTI line3 interrupt	true	0	0
EXTI line[15:10] interrupts	true	0	0
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
TIM2 global interrupt	unused		

*** User modified value**

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32F1
Line	STM32F105/107
MCU	STM32F105RBTx
Datasheet	15274_Rev9

7.2. Parameter Selection

Temperature	25
Vdd	3.3

8. Software Project

8.1. Project Settings

Name	Value
Project Name	Servo_PWM
Project Folder	F:\WORK_Space\ \Servo\Servo_PWM_Proj\Servo_PWM
Toolchain / IDE	MDK-ARM V5
Firmware Package Name and Version	STM32Cube FW_F1 V1.4.0

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