1. Description

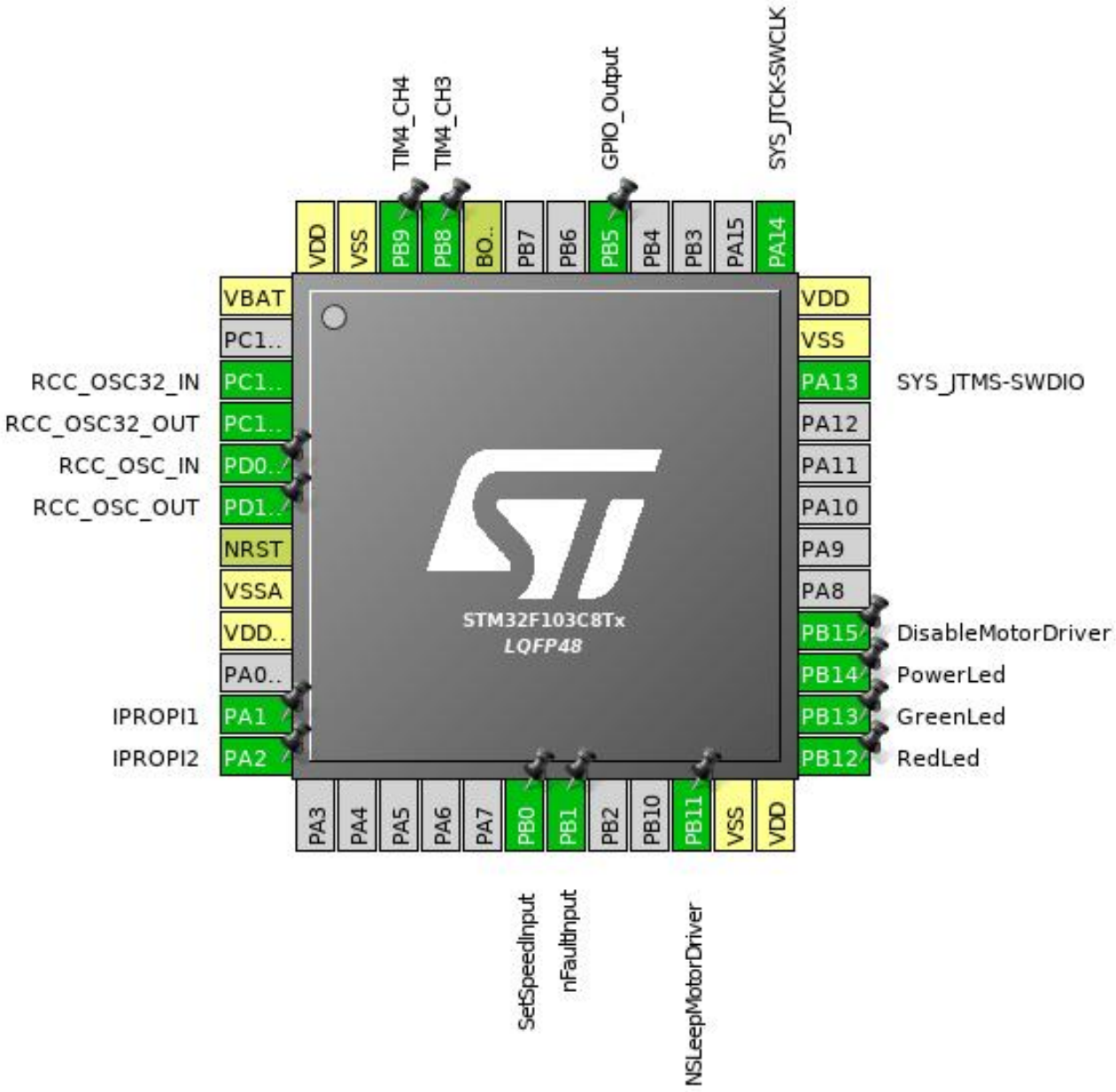
1.1. Project

Project Name	stmf1
Board Name	custom
Generated with:	STM32CubeMX 4.26.1
Date	05/25/2019

1.2. MCU

MCU Series	STM32F1
MCU Line	STM32F103
MCU name	STM32F103C8Tx
MCU Package	LQFP48
MCU Pin number	48

2. Pinout Configuration

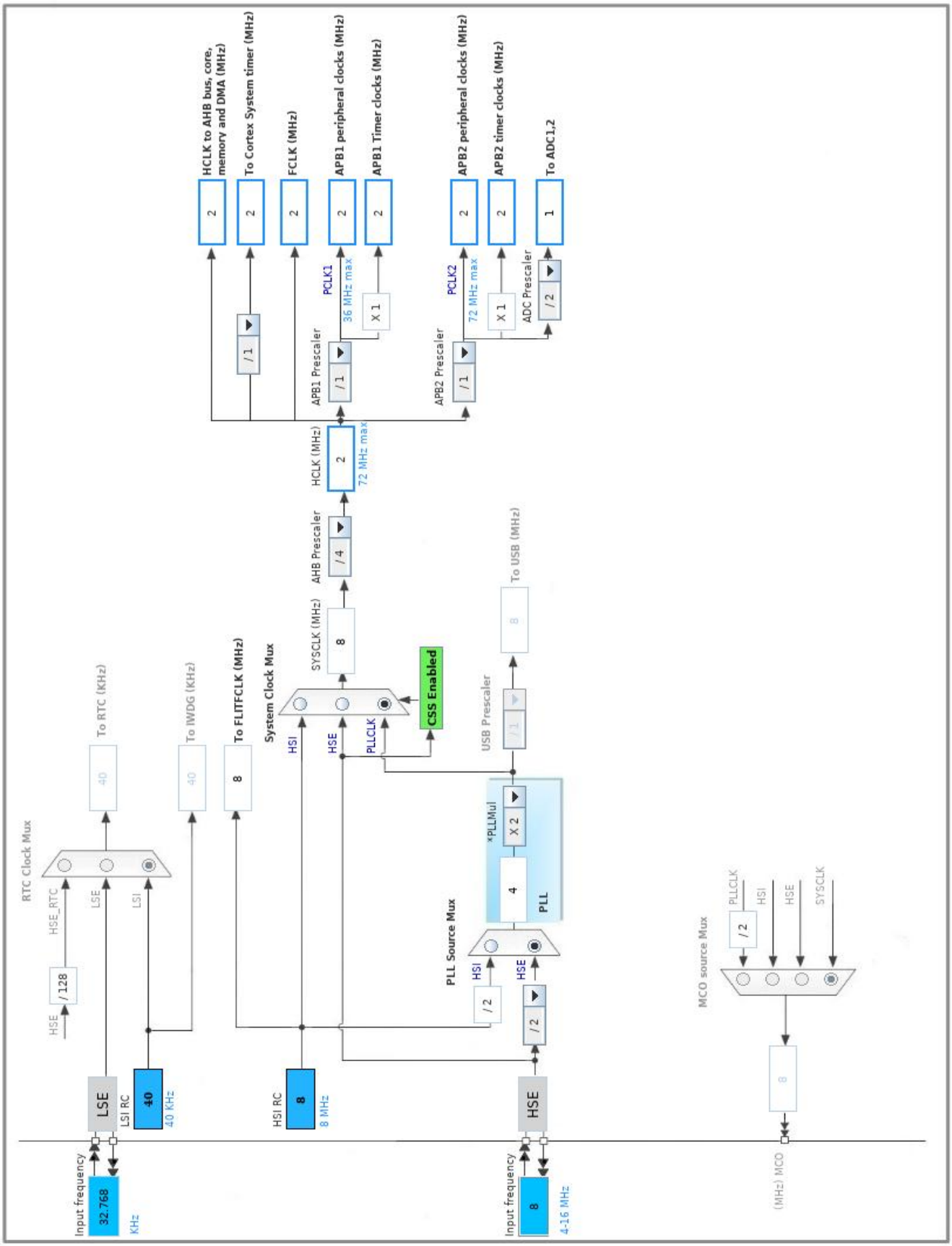


3. Pins Configuration

Pin Number LQFP48	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VBAT	Power		
3	PC14-OSC32_IN	I/O	RCC_OSC32_IN	
4	PC15-OSC32_OUT	I/O	RCC_OSC32_OUT	
5	PD0-OSC_IN	I/O	RCC_OSC_IN	
6	PD1-OSC_OUT	I/O	RCC_OSC_OUT	
7	NRST	Reset		
8	VSSA	Power		
9	VDDA	Power		
11	PA1	I/O	ADC1_IN1	IPROPI1
12	PA2	I/O	ADC1_IN2	IPROPI2
18	PB0	I/O	ADC1_IN8	SetSpeedInput
19	PB1 *	I/O	GPIO_Input	nFaultInput
22	PB11 *	I/O	GPIO_Output	NSLeepMotorDriver
23	VSS	Power		
24	VDD	Power		
25	PB12 *	I/O	GPIO_Output	RedLed
26	PB13 *	I/O	GPIO_Output	GreenLed
27	PB14 *	I/O	GPIO_Output	PowerLed
28	PB15 *	I/O	GPIO_Output	DisableMotorDriver
34	PA13	I/O	SYS_JTMS-SWDIO	
35	VSS	Power		
36	VDD	Power		
37	PA14	I/O	SYS_JTCK-SWCLK	
41	PB5 *	I/O	GPIO_Output	
44	BOOT0	Boot		
45	PB8	I/O	TIM4_CH3	
46	PB9	I/O	TIM4_CH4	
47	VSS	Power		
48	VDD	Power		

* The pin is affected with an I/O function

4. Clock Tree Configuration



5. IPs and Middleware Configuration

5.1. ADC1

mode: IN1

mode: IN2

mode: IN8

5.1.1. Parameter Settings:

ADCs_Common_Settings:

Mode	Independent mode

ADC_Settings:

Data Alignment	Right alignment
Scan Conversion Mode	Enabled
Continuous Conversion Mode	Disabled
Discontinuous Conversion Mode	Disabled

ADC_Regular_ConversionMode:

Enable Regular Conversions	Enable
Number Of Conversion	**5 ***
External Trigger Conversion Source	Regular Conversion launched by software
Rank	1
Channel	Channel 1
Sampling Time	1.5 Cycles
Rank	**2 ***
Channel	Channel 1
Sampling Time	1.5 Cycles
Rank	**3 ***
Channel	Channel 1
Sampling Time	1.5 Cycles
Rank	**4 ***
Channel	Channel 1
Sampling Time	1.5 Cycles
Rank	**5 ***
Channel	Channel 1
Sampling Time	1.5 Cycles

ADC_Injected_ConversionMode:

Number Of Conversions	**4 ***
External Trigger Source	Injected Conversion launched by software
Injected Conversion Mode	None
Rank	1
Channel	Channel 1

Sampling Time	1.5 Cycles
Injected Offset	0
Rank	**2 ***
Channel	Channel 1
Sampling Time	1.5 Cycles
Injected Offset	0
Rank	**3 ***
Channel	Channel 1
Sampling Time	1.5 Cycles
Injected Offset	0
Rank	**4 ***
Channel	Channel 1
Sampling Time	1.5 Cycles
Injected Offset	0

WatchDog:

Enable Analog WatchDog Mode	false

5.2. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

Low Speed Clock (LSE) : Crystal/Ceramic Resonator

5.2.1. 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 Timout Value (ms)	100
LSE Startup Timout Value (ms)	5000

5.3. SYS

Debug: Serial Wire

Timebase Source: SysTick

5.4. TIM4

Channel3: PWM Generation CH3

Channel4: PWM Generation CH4

5.4.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	0
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	0
Internal Clock Division (CKD)	No Division
auto-reload preload	Disable

Trigger Output (TRGO) Parameters:

Master/Slave Mode (MSM bit)	Disable (Trigger input effect not delayed)
Trigger Event Selection	Reset (UG bit from TIMx_EGR)

PWM Generation Channel 3:

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

PWM Generation Channel 4:

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

5.5. FREERTOS

mode: Enabled

5.5.1. Config parameters:

Versions:

FreeRTOS version	9.0.0
CMSIS-RTOS version	1.02

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

Memory management settings:

Memory Allocation	Dynamic
TOTAL_HEAP_SIZE	3072
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	Disabled

Interrupt nesting behaviour configuration:

LIBRARY_LOWEST_INTERRUPT_PRIORITY	15
LIBRARY_MAX_SYSCALL_INTERRUPT_PRIORITY	5

5.5.2. Include parameters:

Include definitions:

vTaskPrioritySet	Enabled
uxTaskPriorityGet	Enabled
vTaskDelete	Enabled

vTaskCleanUpResources	Disabled
vTaskSuspend	Enabled
vTaskDelayUntil	**Enabled ***
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

*** User modified value**

6. System Configuration

6.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
ADC1	PA1	ADC1_IN1	Analog mode	n/a	n/a	IPROPI1
	PA2	ADC1_IN2	Analog mode	n/a	n/a	IPROPI2
	PB0	ADC1_IN8	Analog mode	n/a	n/a	SetSpeedInput
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	
	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	
TIM4	PB8	TIM4_CH3	Alternate Function Push Pull	n/a	Low	
	PB9	TIM4_CH4	Alternate Function Push Pull	n/a	Low	
GPIO	PB1	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	nFaultInput
	PB11	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	NSLeepMotorDriver
	PB12	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	RedLed
	PB13	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	GreenLed
	PB14	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	PowerLed
	PB15	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DisableMotorDriver
	PB5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	

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	15	0
System tick timer	true	15	0
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
ADC1 and ADC2 global interrupts	unused		
TIM4 global interrupt	unused		

*** User modified value**

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32F1
Line	STM32F103
MCU	STM32F103C8Tx
Datasheet	13587_Rev17

7.2. Parameter Selection

Temperature	25
Vdd	3.3

8. Software Pack Report

9. Software Project

9.1. Project Settings

Name	Value
Project Name	stmf1
Project Folder	/home/unix/MyCODE/bluePearlstm32/cubeConfig/stmf1
Toolchain / IDE	Makefile
Firmware Package Name and Version	STM32Cube FW_F1 V1.6.1

9.2. 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