1. Description

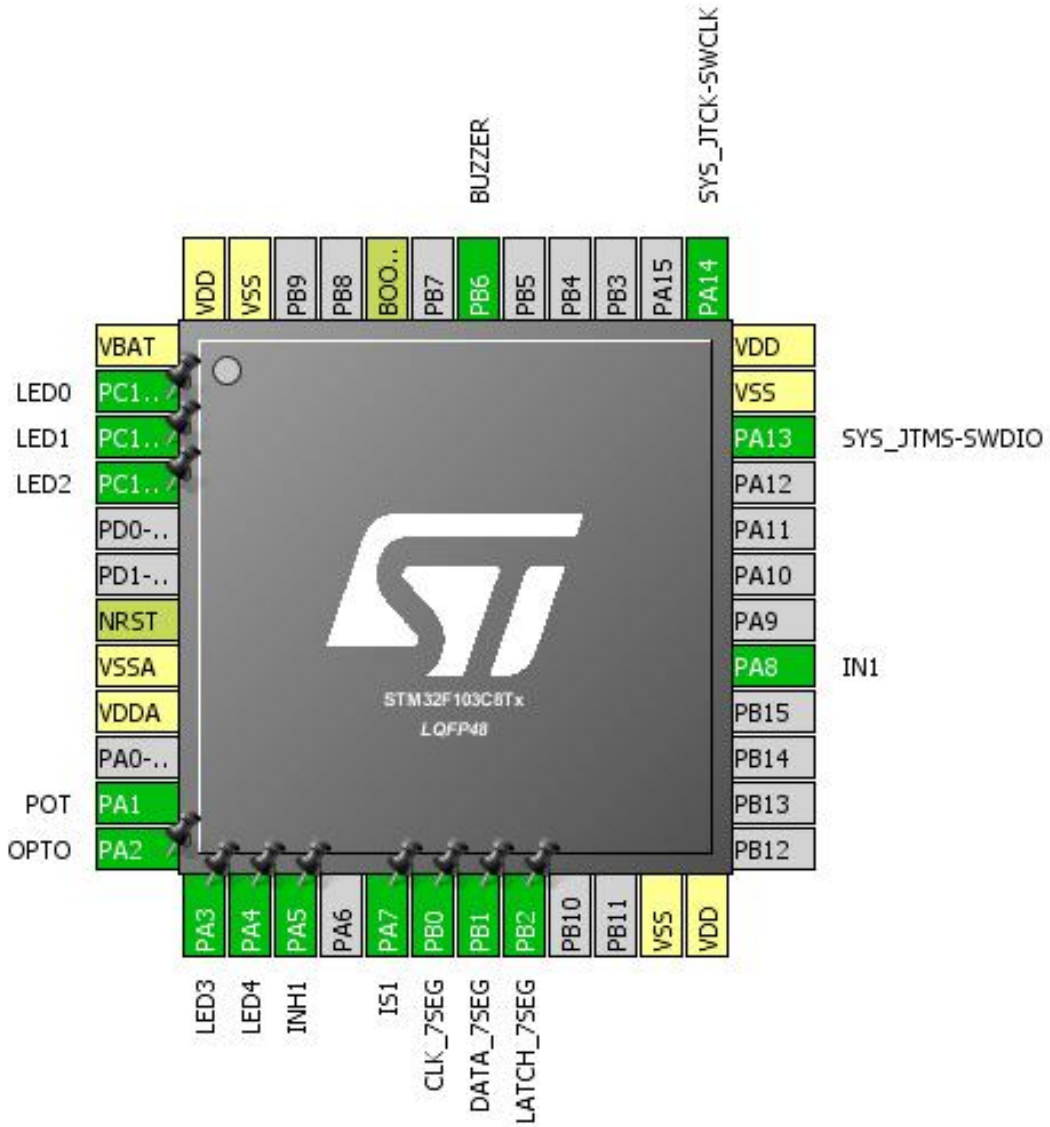
1.1. Project

Project Name	Motor_Demo
Board Name	Motor_Demo
Generated with:	STM32CubeMX 4.25.1
Date	12/14/2018

1.2. MCU

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

2. Pinout Configuration

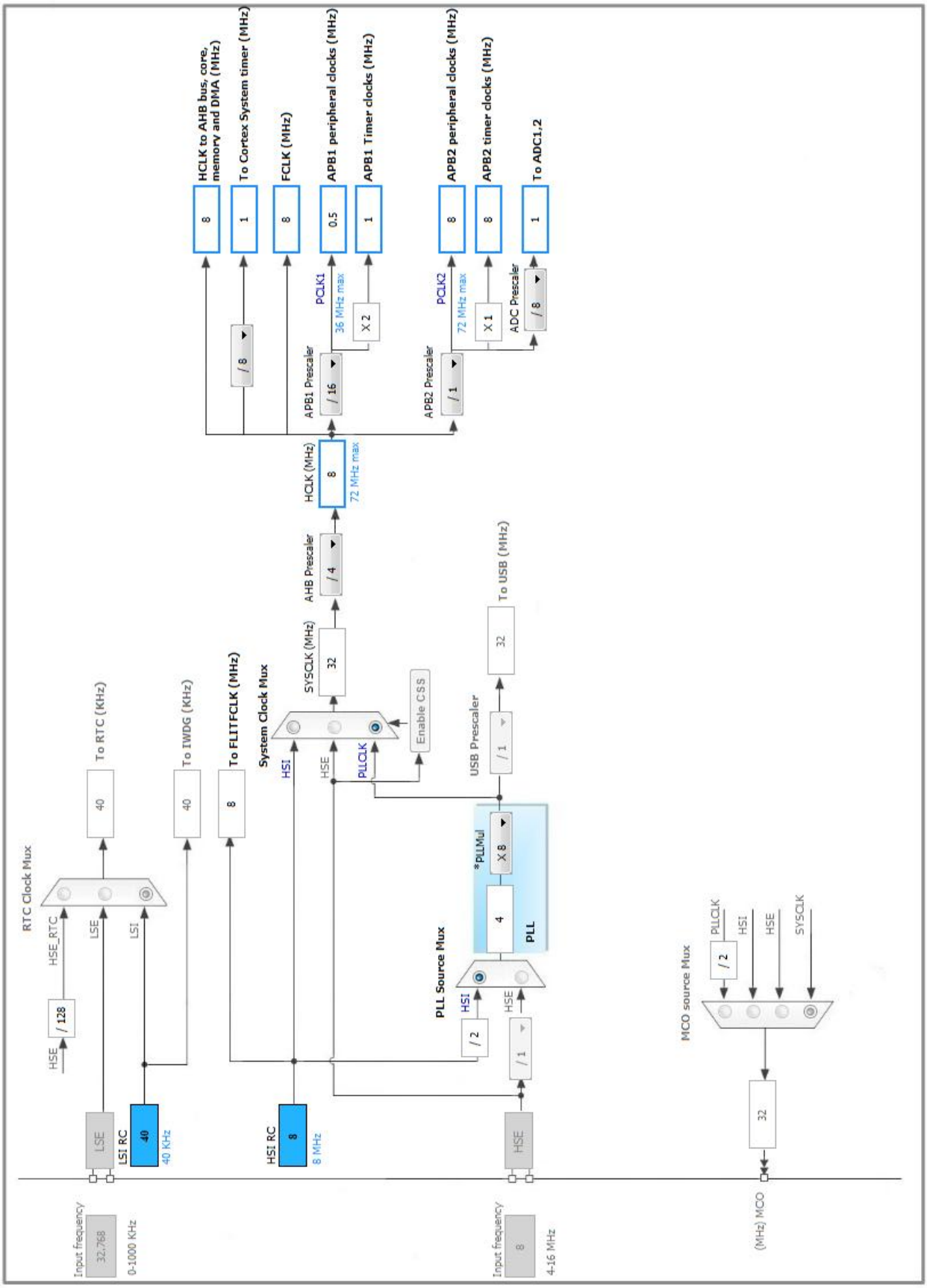


3. Pins Configuration

Pin Number LQFP48	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VBAT	Power		
2	PC13-TAMPER-RTC *	I/O	GPIO_Output	LED0
3	PC14-OSC32_IN *	I/O	GPIO_Output	LED1
4	PC15-OSC32_OUT *	I/O	GPIO_Output	LED2
7	NRST	Reset		
8	VSSA	Power		
9	VDDA	Power		
11	PA1	I/O	ADC1_IN1	POT
12	PA2 *	I/O	GPIO_Input	OPTO
13	PA3 *	I/O	GPIO_Output	LED3
14	PA4 *	I/O	GPIO_Output	LED4
15	PA5 *	I/O	GPIO_Output	INH1
17	PA7 *	I/O	GPIO_Input	IS1
18	PB0 *	I/O	GPIO_Output	CLK_7SEG
19	PB1 *	I/O	GPIO_Output	DATA_7SEG
20	PB2 *	I/O	GPIO_Output	LATCH_7SEG
23	VSS	Power		
24	VDD	Power		
29	PA8	I/O	TIM1_CH1	IN1
34	PA13	I/O	SYS_JTMS-SWDIO	
35	VSS	Power		
36	VDD	Power		
37	PA14	I/O	SYS_JTCK-SWCLK	
42	PB6	I/O	TIM4_CH1	BUZZER
44	BOOT0	Boot		
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

5.1.1. Parameter Settings:

ADCs_Common_Settings:	
Mode	Independent mode
ADC_Settings:	
Data Alignment	Right alignment
Scan Conversion Mode	Disabled
Continuous Conversion Mode	**Enabled ***
Discontinuous Conversion Mode	Disabled
ADC_Regular_ConversionMode:	
Enable Regular Conversions	Enable
Number Of Conversion	1
External Trigger Conversion Source	Regular Conversion launched by software
Rank	1
Channel	Channel 1
Sampling Time	**55.5 Cycles ***
ADC_Injected_ConversionMode:	
Number Of Conversions	0
WatchDog:	
Enable Analog WatchDog Mode	false

5.2. SYS

Debug: Serial Wire

Timebase Source: SysTick

5.3. TIM1

Clock Source : Internal Clock

Channel1: PWM Generation CH1

5.3.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	0
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**800 ***
Internal Clock Division (CKD)	No Division
Repetition Counter (RCR - 8 bits value)	0
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)

Break And Dead Time management - BRK Configuration:

BRK State	Disable
BRK Polarity	High

Break And Dead Time management - Output Configuration:

Automatic Output State	Disable
Off State Selection for Run Mode (OSSR)	Disable
Off State Selection for Idle Mode (OSSI)	Disable
Lock Configuration	Off

PWM Generation Channel 1:

Mode	PWM mode 1
Pulse (16 bits value)	**400 ***
Fast Mode	Disable
CH Polarity	High
CH Idle State	Reset

5.4. TIM3

mode: Clock Source

Channel1: Output Compare No Output

5.4.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**4 ***
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**62500 ***
Internal Clock Division (CKD)	**Division by 4 ***

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)

Output Compare No Output Channel 1:

Mode	**Toggle on match ***
Pulse (16 bits value)	**31250 ***
CH Polarity	High

5.5. TIM4

Slave Mode: Gated Mode
Trigger Source: ITR2
mode: Clock Source
Channel1: PWM Generation CH1

5.5.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	0
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**1000 ***
Internal Clock Division (CKD)	No Division
auto-reload preload	Disable
Slave Mode Controller	Gated Mode

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 1:

Mode	PWM mode 1
Pulse (16 bits value)	0
Fast Mode	Disable
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
ADC1	PA1	ADC1_IN1	Analog mode	n/a	n/a	POT
SYS	PA13	SYS_JTMS-SWDIO	n/a	n/a	n/a	
	PA14	SYS_JTCK-SWCLK	n/a	n/a	n/a	
TIM1	PA8	TIM1_CH1	Alternate Function Push Pull	n/a	Low	IN1
TIM4	PB6	TIM4_CH1	Alternate Function Push Pull	n/a	Low	BUZZER
GPIO	PC13-TAMPER-RTC	GPIO_Output	Output Push Pull	n/a	Low	LED0
	PC14-OSC32_IN	GPIO_Output	Output Push Pull	n/a	Low	LED1
	PC15-OSC32_OUT	GPIO_Output	Output Push Pull	n/a	Low	LED2
	PA2	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	OPTO
	PA3	GPIO_Output	Output Push Pull	n/a	Low	LED3
	PA4	GPIO_Output	Output Push Pull	n/a	Low	LED4
	PA5	GPIO_Output	Output Push Pull	n/a	Low	INH1
	PA7	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	IS1
	PB0	GPIO_Output	Output Push Pull	n/a	Low	CLK_7SEG
	PB1	GPIO_Output	Output Push Pull	n/a	Low	DATA_7SEG
	PB2	GPIO_Output	Output Push Pull	n/a	Low	LATCH_7SEG

6.2. DMA configuration

DMA request	Stream	Direction	Priority
ADC1	DMA1_Channel1	Peripheral To Memory	**Medium ***

ADC1: DMA1_Channel1 DMA request Settings:

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

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
DMA1 channel1 global interrupt	true	0	0
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
ADC1 and ADC2 global interrupts	unused		
TIM1 break interrupt	unused		
TIM1 update interrupt	unused		
TIM1 trigger and commutation interrupts	unused		
TIM1 capture compare interrupt	unused		
TIM3 global interrupt	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 Project

8.1. Project Settings

Name	Value
Project Name	Motor_Demo
Project Folder	C:\Users\Vlado\workspace\Motor_Demo
Toolchain / IDE	SW4STM32
Firmware Package Name and Version	STM32Cube FW_F1 V1.6.1

8.2. Code Generation Settings

Name	Value
STM32Cube Firmware Library Package	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
Delete previously generated files when not re-generated	Yes
Set all free pins as analog (to optimize the power consumption)	No

9. Software Pack Report