1. Description

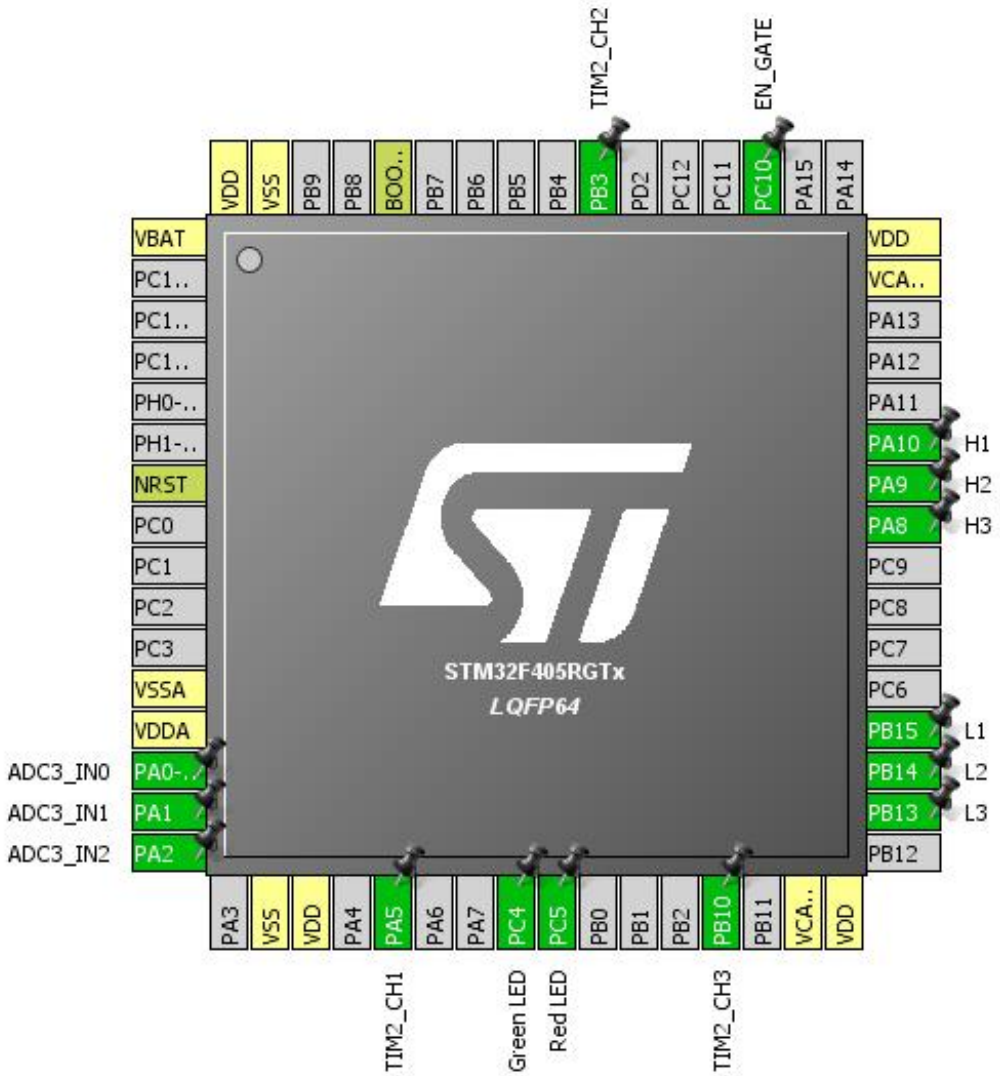
1.1. Project

Project Name	hBridge
Board Name	custom
Generated with:	STM32CubeMX 4.27.0
Date	09/21/2019

1.2. MCU

MCU Series	STM32F4
MCU Line	STM32F405/415
MCU name	STM32F405RGTx
MCU Package	LQFP64
MCU Pin number	64

2. Pinout Configuration

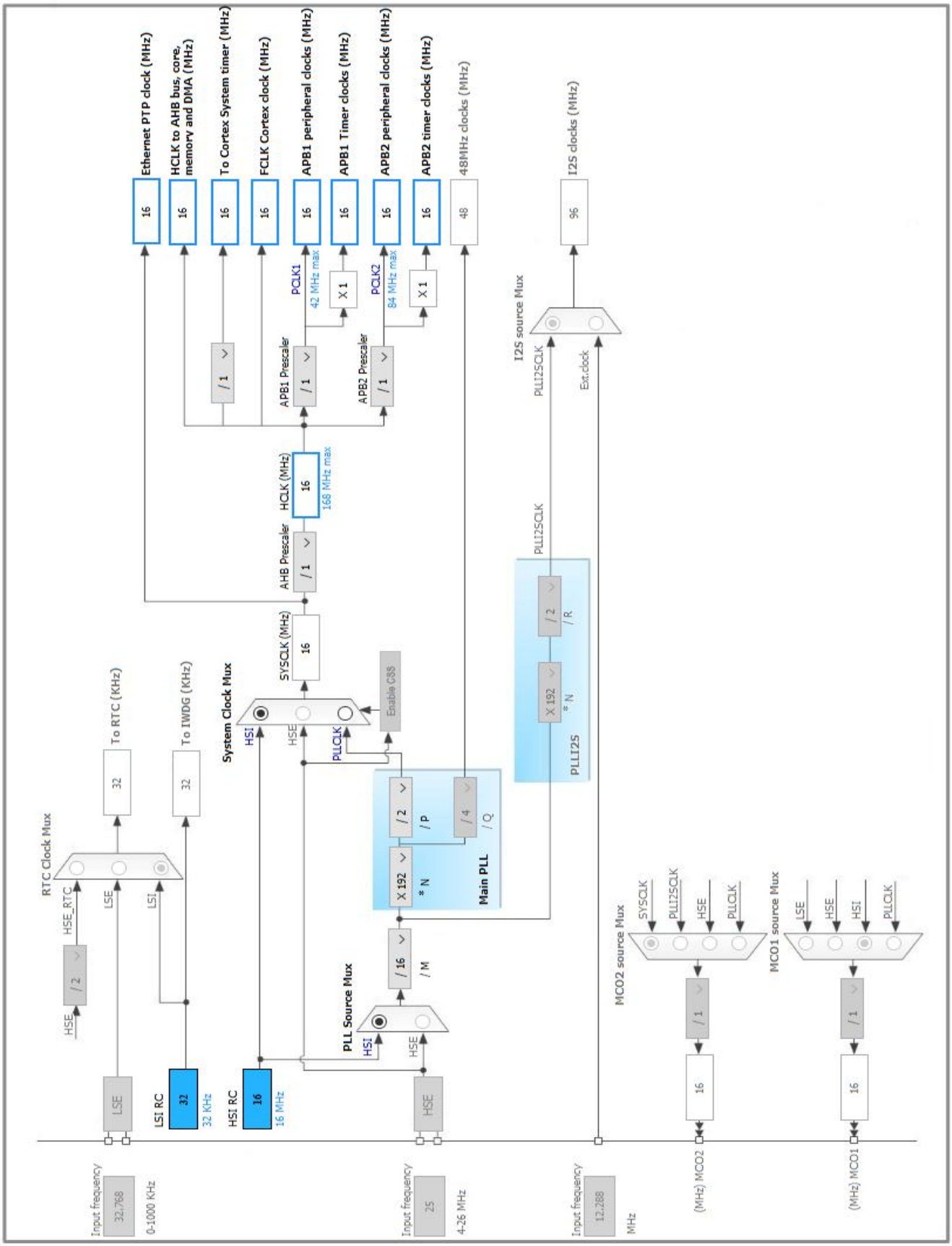


3. Pins Configuration

Pin Number LQFP64	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VBAT	Power		
7	NRST	Reset		
12	VSSA	Power		
13	VDDA	Power		
14	PA0-WKUP	I/O	ADC3_IN0	
15	PA1	I/O	ADC3_IN1	
16	PA2	I/O	ADC3_IN2	
18	VSS	Power		
19	VDD	Power		
21	PA5	I/O	TIM2_CH1	
24	PC4 *	I/O	GPIO_Output	Green LED
25	PC5 *	I/O	GPIO_Output	Red LED
29	PB10	I/O	TIM2_CH3	
31	VCAP_1	Power		
32	VDD	Power		
34	PB13 *	I/O	GPIO_Output	L3
35	PB14 *	I/O	GPIO_Output	L2
36	PB15 *	I/O	GPIO_Output	L1
41	PA8 *	I/O	GPIO_Output	H3
42	PA9 *	I/O	GPIO_Output	H2
43	PA10 *	I/O	GPIO_Output	H1
47	VCAP_2	Power		
48	VDD	Power		
51	PC10 *	I/O	GPIO_Output	EN_GATE
55	PB3	I/O	TIM2_CH2	
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. ADC3

mode: IN0

mode: IN1

mode: IN2

5.1.1. Parameter Settings:

ADCs_Common_Settings:

Mode	Independent mode

ADC_Settings:

Clock Prescaler	**PCLK2 divided by 4 ***
Resolution	12 bits (15 ADC Clock cycles)
Data Alignment	Right alignment
Scan Conversion Mode	Disabled
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

ADC_Regular_ConversionMode:

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

ADC_Injected_ConversionMode:

Number Of Conversions	0

WatchDog:

Enable Analog WatchDog Mode	false

5.2. SYS

Timebase Source: SysTick

5.3. TIM2

Clock Source : Internal Clock

Channel1: PWM Generation CH1
Channel2: PWM Generation CH2
Channel3: PWM Generation CH3
5.3.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**32 ***
Counter Mode	Up
Counter Period (AutoReload Register - 32 bits value)	**8 ***
Internal Clock Division (CKD)	No Division

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 (32 bits value)	0
Fast Mode	Disable
CH Polarity	High

PWM Generation Channel 2:

Mode	PWM mode 1
Pulse (32 bits value)	0
Fast Mode	Disable
CH Polarity	High

PWM Generation Channel 3:

Mode	PWM mode 1
Pulse (32 bits value)	0
Fast Mode	Disable
CH Polarity	High

5.4. TIM3
Clock Source : Internal Clock
5.4.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**32 ***
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**8 ***
Internal Clock Division (CKD)	No Division

Trigger Output (TRGO) Parameters:

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

*** User modified value**

6. System Configuration

6.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
ADC3	PA0-WKUP	ADC3_IN0	Analog mode	No pull-up and no pull-down	n/a	
	PA1	ADC3_IN1	Analog mode	No pull-up and no pull-down	n/a	
	PA2	ADC3_IN2	Analog mode	No pull-up and no pull-down	n/a	
TIM2	PA5	TIM2_CH1	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PB10	TIM2_CH3	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PB3	TIM2_CH2	Alternate Function Push Pull	No pull-up and no pull-down	Low	
GPIO	PC4	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	Green LED
	PC5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	Red LED
	PB13	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	L3
	PB14	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	L2
	PB15	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	L1
	PA8	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	H3
	PA9	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	H2
	PA10	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	H1
	PC10	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	EN_GATE

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
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	0	0
System tick timer	true	0	0
ADC1, ADC2 and ADC3 global interrupts	true	0	0
TIM2 global interrupt	true	0	0
TIM3 global interrupt	true	0	0
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
FPU global interrupt	unused		

*** User modified value**

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32F4
Line	STM32F405/415
MCU	STM32F405RGTx
Datasheet	022152_Rev8

7.2. Parameter Selection

Temperature	25
Vdd	3.3

8. Software Project

8.1. Project Settings

Name	Value
Project Name	hBridge
Project Folder	C:\Users\admin\VESC-Test\hBridge
Toolchain / IDE	SW4STM32
Firmware Package Name and Version	STM32Cube FW_F4 V1.21.0

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