1. Description

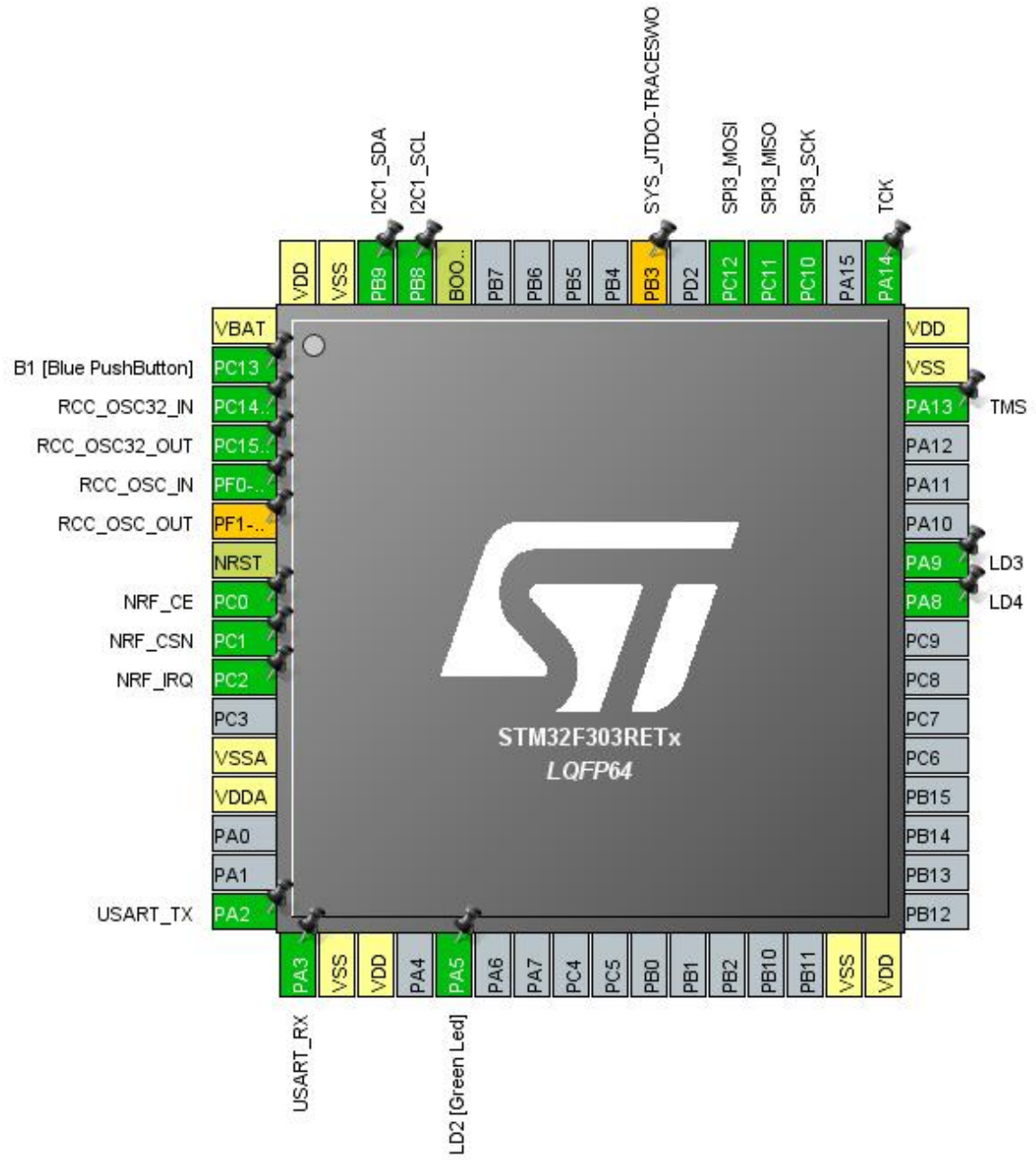
1.1. Project

Project Name	mech_sensor_proto
Board Name	NUCLEO-F303RE
Generated with:	STM32CubeMX 5.0.1
Date	01/19/2019

1.2. MCU

MCU Series	STM32F3
MCU Line	STM32F303
MCU name	STM32F303RETx
MCU Package	LQFP64
MCU Pin number	64

2. Pinout Configuration

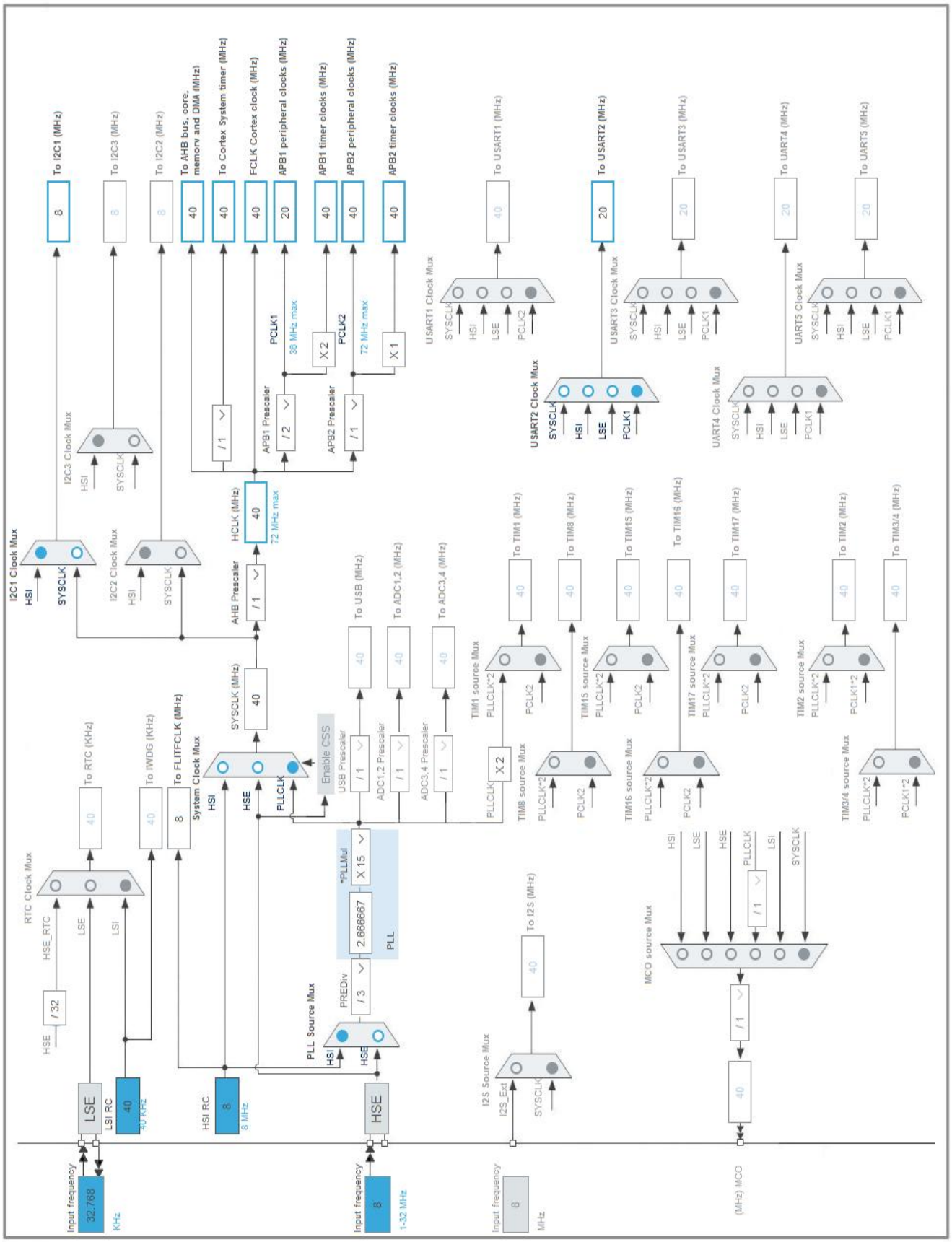


3. Pins Configuration

Pin Number LQFP64	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VBAT	Power		
2	PC13	I/O	GPIO_EXTI13	B1 [Blue PushButton]
3	PC14-OSC32_IN	I/O	RCC_OSC32_IN	
4	PC15-OSC32_OUT	I/O	RCC_OSC32_OUT	
5	PF0-OSC_IN	I/O	RCC_OSC_IN	
6	PF1-OSC_OUT *	I/O	RCC_OSC_OUT	
7	NRST	Reset		
8	PC0 **	I/O	GPIO_Output	NRF_CE
9	PC1 **	I/O	GPIO_Output	NRF_CSN
10	PC2	I/O	GPIO_EXTI2	NRF_IRQ
12	VSSA	Power		
13	VDDA	Power		
16	PA2	I/O	USART2_TX	USART_TX
17	PA3	I/O	USART2_RX	USART_RX
18	VSS	Power		
19	VDD	Power		
21	PA5 **	I/O	GPIO_Output	LD2 [Green Led]
31	VSS	Power		
32	VDD	Power		
41	PA8 **	I/O	GPIO_Output	LD4
42	PA9 **	I/O	GPIO_Output	LD3
46	PA13	I/O	SYS_JTMS-SWDIO	TMS
47	VSS	Power		
48	VDD	Power		
49	PA14	I/O	SYS_JTCK-SWCLK	TCK
51	PC10	I/O	SPI3_SCK	
52	PC11	I/O	SPI3_MISO	
53	PC12	I/O	SPI3_MOSI	
55	PB3 *	I/O	SYS_JTDO-TRACESWO	
60	BOOT0	Boot		
61	PB8	I/O	I2C1_SCL	
62	PB9	I/O	I2C1_SDA	
63	VSS	Power		
64	VDD	Power		

** The pin is affected with an I/O function
 * The pin is affected with a peripheral function but no peripheral mode is activated

4. Clock Tree Configuration



5. Software Project

5.1. Project Settings

Name	Value
Project Name	mech_sensor_proto
Project Folder	D:\projects\windsensor\mech_sensor_proto
Toolchain / IDE	SW4STM32
Firmware Package Name and Version	STM32Cube FW_F3 V1.10.0

5.2. 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

6. Power Consumption Calculator report

6.1. Microcontroller Selection

Series	STM32F3
Line	STM32F303
MCU	STM32F303RETx
Datasheet	026415_Rev5

6.2. Parameter Selection

Temperature	25
Vdd	3.6

7. IPs and Middleware Configuration

7.1. I2C1

I2C: I2C

7.1.1. Parameter Settings:

Timing configuration:

I2C Speed Mode	Standard Mode
I2C Speed Frequency (KHz)	100
Rise Time (ns)	0
Fall Time (ns)	0
Coefficient of Digital Filter	0
Analog Filter	Enabled
Timing	0x2000090E

Slave Features:

Clock No Stretch Mode	Disabled
General Call Address Detection	Disabled
Primary Address Length selection	7-bit
Dual Address Acknowledged	Disabled
Primary slave address	0

7.2. RCC

High Speed Clock (HSE): BYPASS Clock Source

Low Speed Clock (LSE) : Crystal/Ceramic Resonator

7.2.1. Parameter Settings:

System Parameters:

VDD voltage (V)	3.3
Prefetch Buffer	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

7.3. SPI3

Mode: Full-Duplex Master

7.3.1. Parameter Settings:

Basic Parameters:

Frame Format	Motorola
Data Size	**8 Bits ***
First Bit	MSB First

Clock Parameters:

Prescaler (for Baud Rate)	**4 ***
Baud Rate	**5.0 MBits/s ***
Clock Polarity (CPOL)	Low
Clock Phase (CPHA)	1 Edge

Advanced Parameters:

CRC Calculation	Disabled
NSSP Mode	**Disabled ***
NSS Signal Type	Software

7.4. SYS

Debug: Serial Wire

Timebase Source: SysTick

7.5. USART2

Mode: Asynchronous

7.5.1. Parameter Settings:

Basic Parameters:

Baud Rate	**115200 ***
Word Length	8 Bits (including Parity)
Parity	None
Stop Bits	1

Advanced Parameters:

Data Direction	Receive and Transmit
Over Sampling	16 Samples
Single Sample	Disable

Advanced Features:

Auto Baudrate	Disable
TX Pin Active Level Inversion	Disable

RX Pin Active Level Inversion	Disable
Data Inversion	Disable
TX and RX Pins Swapping	Disable
Overrun	Enable
DMA on RX Error	Enable
MSB First	Disable

*** User modified value**

8. System Configuration

8.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
I2C1	PB8	I2C1_SCL	Alternate Function Open Drain	Pull up	**High ***	
	PB9	I2C1_SDA	Alternate Function Open Drain	Pull up	**High ***	
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	
	PF0-OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	
SPI3	PC10	SPI3_SCK	Alternate Function Push Pull	No pull up pull down	**High ***	
	PC11	SPI3_MISO	Alternate Function Push Pull	No pull up pull down	**High ***	
	PC12	SPI3_MOSI	Alternate Function Push Pull	No pull up pull down	**High ***	
SYS	PA13	SYS_JTMS-SWDIO	n/a	n/a	n/a	TMS
	PA14	SYS_JTCK-SWCLK	n/a	n/a	n/a	TCK
USART2	PA2	USART2_TX	Alternate Function Push Pull	No pull up pull down	Low	USART_TX
	PA3	USART2_RX	Alternate Function Push Pull	No pull up pull down	Low	USART_RX
Single Mapped Signals	PF1-OSC_OUT	RCC_OSC_OUT	n/a	n/a	n/a	
	PB3	SYS_JTDO-TRACESWO	n/a	n/a	n/a	
GPIO	PC13	GPIO_EXTI13	**External Interrupt Mode with Falling edge trigger detection**	No pull up pull down	n/a	B1 [Blue PushButton]
	PC0	GPIO_Output	Output Push Pull	No pull up pull down	Low	NRF_CE
	PC1	GPIO_Output	Output Push Pull	No pull up pull down	Low	NRF_CSN
	PC2	GPIO_EXTI2	External Interrupt Mode with Rising edge trigger detection	No pull up pull down	n/a	NRF_IRQ
	PA5	GPIO_Output	Output Push Pull	No pull up pull down	Low	LD2 [Green Led]
	PA8	GPIO_Output	Output Push Pull	No pull up pull down	Low	LD4
	PA9	GPIO_Output	Output Push Pull	No pull up pull down	Low	LD3

8.2. DMA configuration

nothing configured in DMA service

8.3. 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
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
EXTI line2 and Touch Sense controller interrupts	unused		
I2C1 event global interrupt / I2C1 wake-up interrupt through EXTI line 23	unused		
I2C1 error interrupt	unused		
USART2 global interrupt / USART2 wake-up interrupt through EXTI line 26	unused		
EXTI line[15:10] interrupts	unused		
SPI3 global interrupt	unused		
Floating point unit interrupt	unused		

*** User modified value**

9. Software Pack Report