

## 1. Description

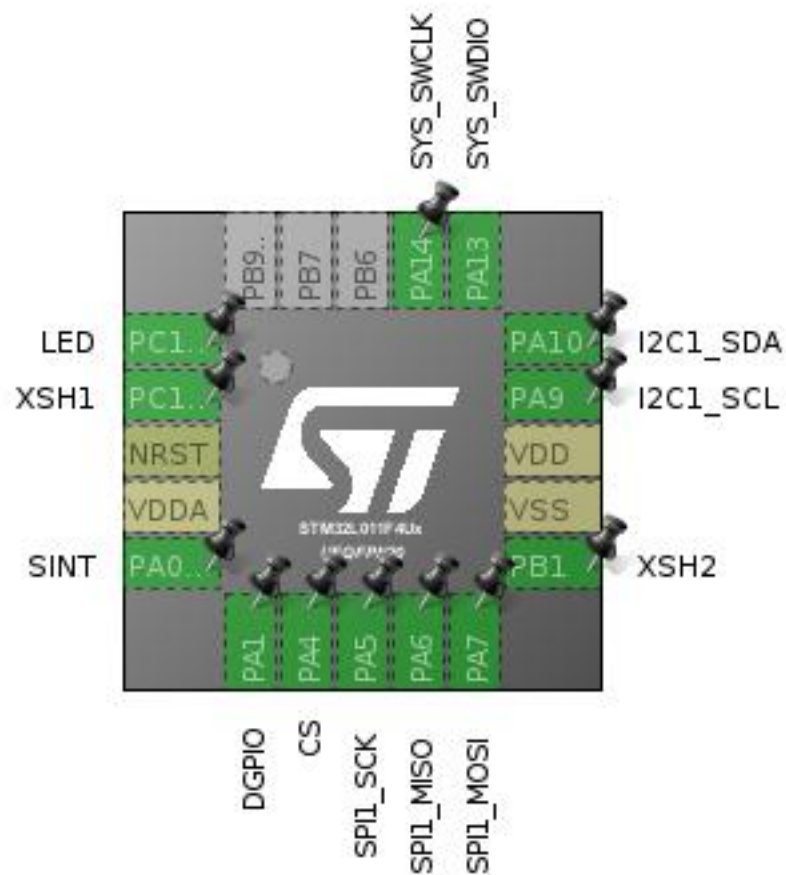
### 1.1. Project

Project Name	firmware
Board Name	firmware
Generated with:	STM32CubeMX 4.23.0
Date	01/18/2018

### 1.2. MCU

MCU Series	STM32L0
MCU Line	STM32L0x1
MCU name	STM32L011F4Ux
MCU Package	UFQFPN20
MCU Pin number	20

## 2. Pinout Configuration

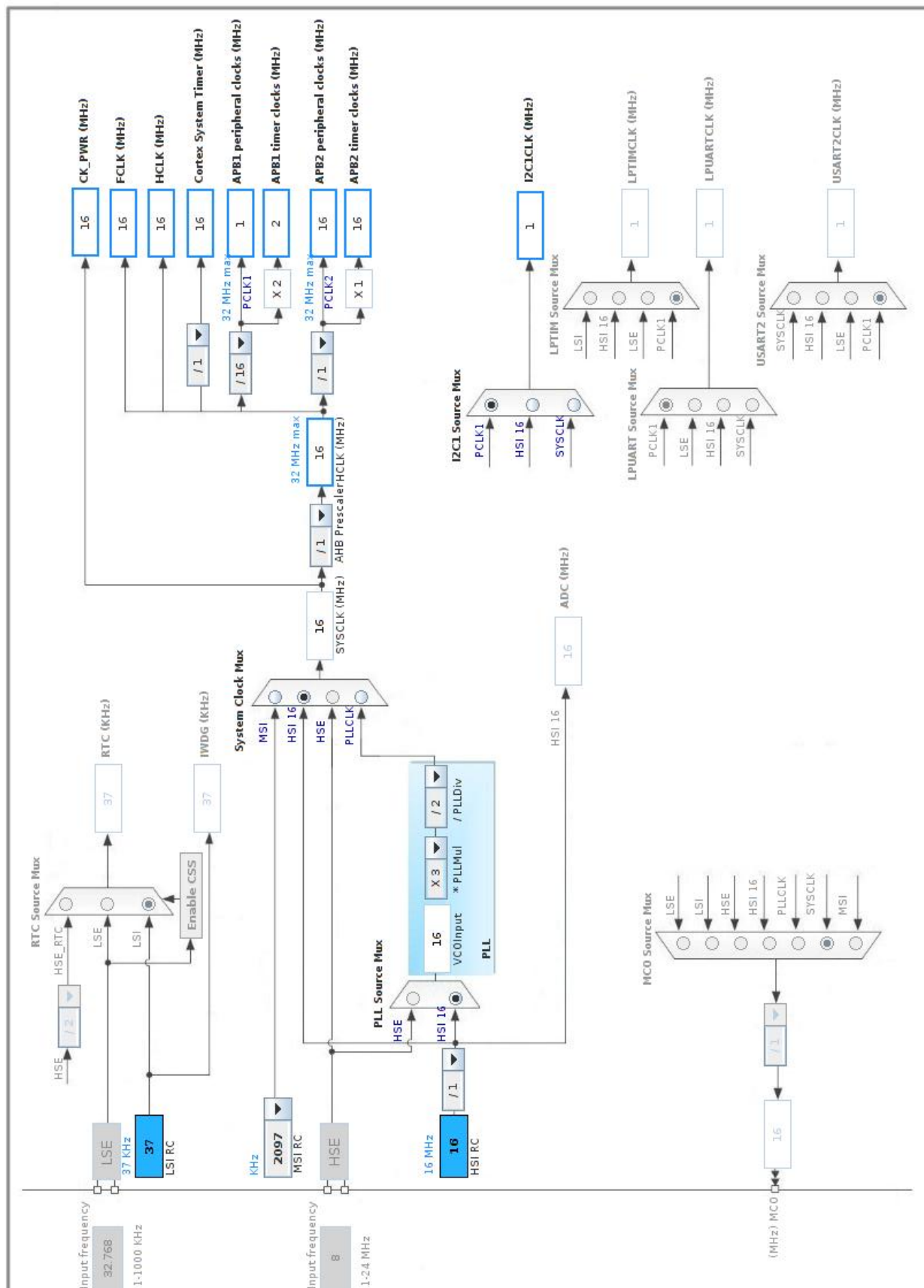


### 3. Pins Configuration

Pin Number UFQFPN20	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	PC14-OSC32_IN *	I/O	GPIO_Output	LED
2	PC15-OSC32_OUT *	I/O	GPIO_Output	XSH1
3	NRST	Reset		
4	VDDA	Power		
5	PA0-CK_IN *	I/O	GPIO_Output	SINT
6	PA1 *	I/O	GPIO_Input	DGPIO
7	PA4 *	I/O	GPIO_Input	CS
8	PA5	I/O	SPI1_SCK	
9	PA6	I/O	SPI1_MISO	
10	PA7	I/O	SPI1_MOSI	
11	PB1 *	I/O	GPIO_Output	XSH2
12	VSS	Power		
13	VDD	Power		
14	PA9	I/O	I2C1_SCL	
15	PA10	I/O	I2C1_SDA	
16	PA13	I/O	SYS_SWDIO	
17	PA14	I/O	SYS_SWCLK	

\* The pin is affected with an I/O function

## 4. Clock Tree Configuration



## 5. IPs and Middleware Configuration

### 5.1. I2C1

#### I2C: I2C

##### 5.1.1. 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	<b>0x00000103 *</b>

###### 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

### 5.2. SPI1

#### Mode: Full-Duplex Slave

##### 5.2.1. Parameter Settings:

###### Basic Parameters:

Frame Format	Motorola
Data Size	8 Bits
First Bit	MSB First

###### Clock Parameters:

Clock Polarity (CPOL)	Low
Clock Phase (CPHA)	1 Edge

###### Advanced Parameters:

CRC Calculation	Disabled
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NSS Signal Type

Software

### 5.3. SYS

**mode: Debug Serial Wire**

**Timebase Source: SysTick**

\* User modified value

## 6. System Configuration

### 6.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
I2C1	PA9	I2C1_SCL	Alternate Function Open Drain	Pull-up	Very High *	
	PA10	I2C1_SDA	Alternate Function Open Drain	Pull-up	Very High *	
SPI1	PA5	SPI1_SCK	Alternate Function Push Pull	No pull-up and no pull-down	Very High *	
	PA6	SPI1_MISO	Alternate Function Push Pull	No pull-up and no pull-down	Very High *	
	PA7	SPI1_MOSI	Alternate Function Push Pull	No pull-up and no pull-down	Very High *	
SYS	PA13	SYS_SWDIO	n/a	n/a	n/a	
	PA14	SYS_SWCLK	n/a	n/a	n/a	
GPIO	PC14-OSC32_IN	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED
	PC15-OSC32_OUT	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	XSH1
	PA0-CK_IN	GPIO_Output	<b>Output Open Drain *</b>	No pull-up and no pull-down	Low	SINT
	PA1	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	DGPIO
	PA4	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	CS
	PB1	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	XSH2

### 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
System service call via SWI instruction	true	0	0
Pendable request for system service	true	0	0
System tick timer	true	0	0
SPI1 global interrupt	true	0	0
PVD interrupt through EXTI line 16	unused		
Flash and EEPROM global interrupt	unused		
RCC global interrupt	unused		
I2C1 event global interrupt / I2C1 wake-up interrupt through EXTI line 23	unused		

\* User modified value



## ***7. Power Consumption Calculator report***

### 7.1. Microcontroller Selection

Series	STM32L0
Line	STM32L0x1
MCU	STM32L011F4Ux
Datasheet	027973_Rev4

### 7.2. Parameter Selection

Temperature	25
Vdd	3.6

## 8. Software Project

### 8.1. Project Settings

Name	Value
Project Name	firmware
Project Folder	/mnt/data/documents/edgsm/ed_goes_robotsm/sensor_moduler/firmware_hal
Toolchain / IDE	Makefile
Firmware Package Name and Version	STM32Cube FW_L0 V1.10.0

### 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	Yes
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)	Yes