

## 1. Description

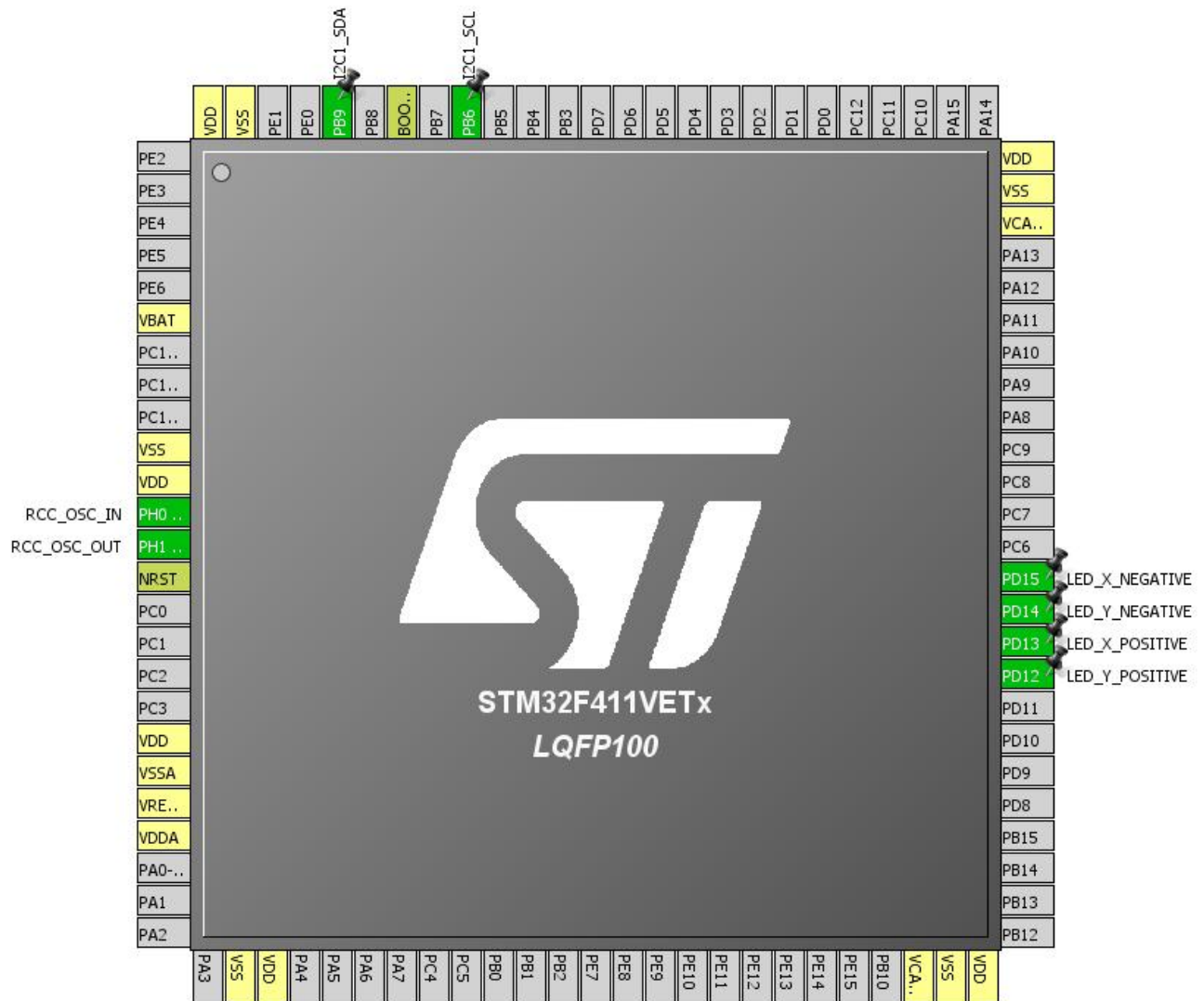
### 1.1. Project

Project Name	06_I2C
Board Name	06_I2C
Generated with:	STM32CubeMX 4.19.0
Date	03/11/2017

### 1.2. MCU

MCU Series	STM32F4
MCU Line	STM32F411
MCU name	STM32F411VETx
MCU Package	LQFP100
MCU Pin number	100

## 2. Pinout Configuration

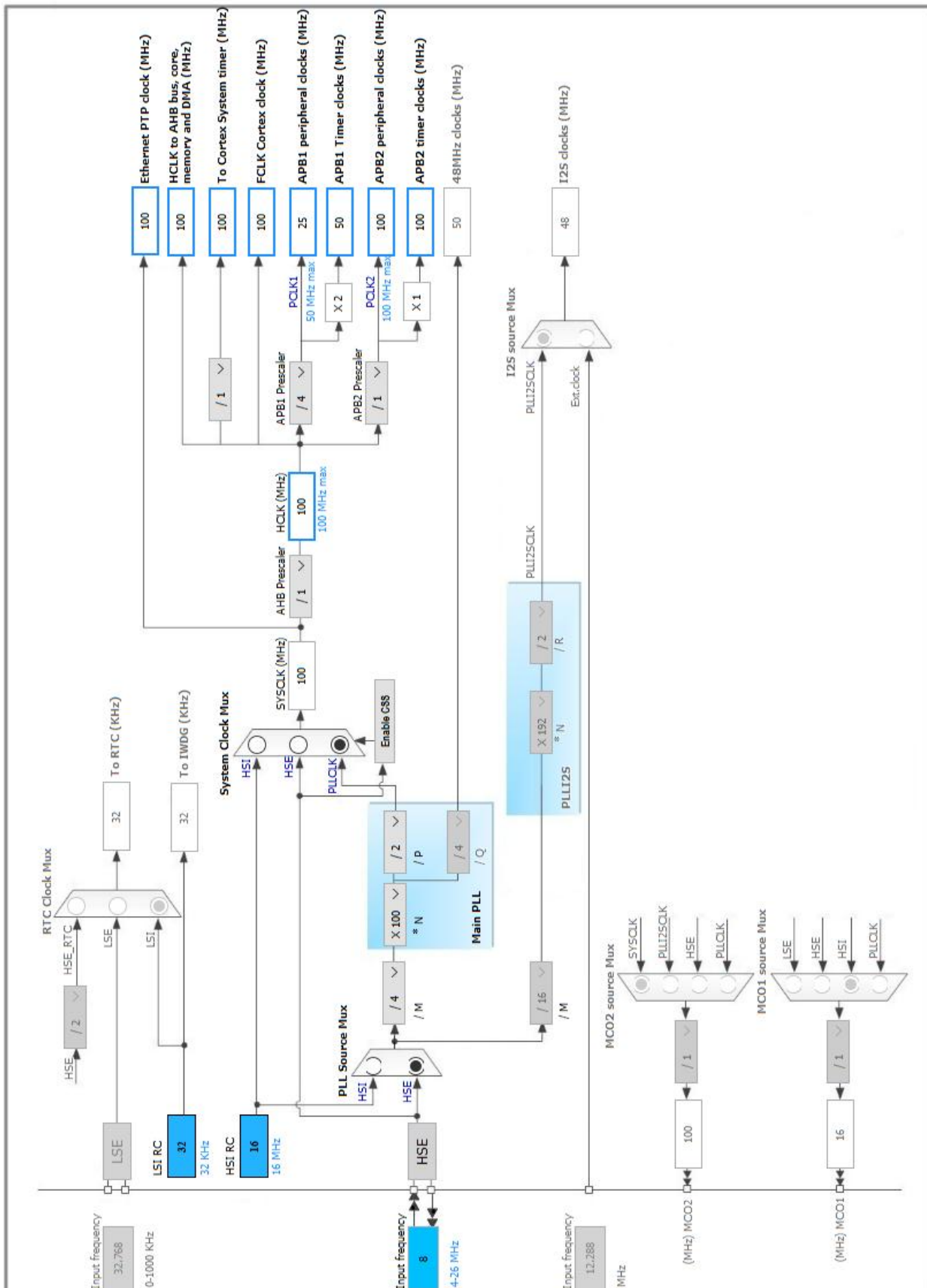


### 3. Pins Configuration

Pin Number LQFP100	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
6	VBAT	Power		
10	VSS	Power		
11	VDD	Power		
12	PH0 - OSC_IN	I/O	RCC_OSC_IN	
13	PH1 - OSC_OUT	I/O	RCC_OSC_OUT	
14	NRST	Reset		
19	VDD	Power		
20	VSSA	Power		
21	VREF+	Power		
22	VDDA	Power		
27	VSS	Power		
28	VDD	Power		
48	VCAP1	Power		
49	VSS	Power		
50	VDD	Power		
59	PD12 *	I/O	GPIO_Output	LED_Y_POSITIVE
60	PD13 *	I/O	GPIO_Output	LED_X_POSITIVE
61	PD14 *	I/O	GPIO_Output	LED_Y_NEGATIVE
62	PD15 *	I/O	GPIO_Output	LED_X_NEGATIVE
73	VCAP2	Power		
74	VSS	Power		
75	VDD	Power		
92	PB6	I/O	I2C1_SCL	
94	BOOT0	Boot		
96	PB9	I/O	I2C1_SDA	
99	VSS	Power		
100	VDD	Power		

\* 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:

###### Master Features:

I2C Speed Mode	<b>Fast Mode *</b>
I2C Clock Speed (Hz)	400000
Fast Mode Duty Cycle	Duty cycle Tlow/Thigh = 2

###### Slave Features:

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

### 5.2. RCC

#### High Speed Clock (HSE): Crystal/Ceramic Resonator

##### 5.2.1. Parameter Settings:

###### System Parameters:

VDD voltage (V)	3.3
Instruction Cache	Enabled
Prefetch Buffer	Enabled
Data Cache	Enabled
Flash Latency(WS)	3 WS (4 CPU cycle)

###### RCC Parameters:

HSI Calibration Value	16
TIM Prescaler Selection	Disabled
HSE Startup Timeout Value (ms)	100
LSE Startup Timeout Value (ms)	5000

###### Power Parameters:

Power Regulator Voltage Scale	Power Regulator Voltage Scale 1
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### 5.3. SYS

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	PB6	I2C1_SCL	Alternate Function Open Drain	Pull-up	<b>Very High</b> *	
	PB9	I2C1_SDA	Alternate Function Open Drain	Pull-up	<b>Very High</b> *	
RCC	PH0 - OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	
	PH1 - OSC_OUT	RCC_OSC_OUT	n/a	n/a	n/a	
GPIO	PD12	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED_Y_POSITIVE
	PD13	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED_X_POSITIVE
	PD14	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED_Y_NEGATIVE
	PD15	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED_X_NEGATIVE

### 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
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
I2C1 event interrupt	unused		
I2C1 error interrupt	unused		
FPU global interrupt	unused		

\* User modified value



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

### 7.1. Microcontroller Selection

Series	STM32F4
Line	STM32F411
MCU	STM32F411VETx
Datasheet	026289_Rev4

### 7.2. Parameter Selection

Temperature	25
Vdd	null

## 8. Software Project

### 8.1. Project Settings

Name	Value
Project Name	06_I2C
Project Folder	D:\OneDrive\Programowanie\Kurs STM32F4\Programy\06_I2C
Toolchain / IDE	SW4STM32
Firmware Package Name and Version	STM32Cube FW_F4 V1.14.0

### 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