

## 1. Description

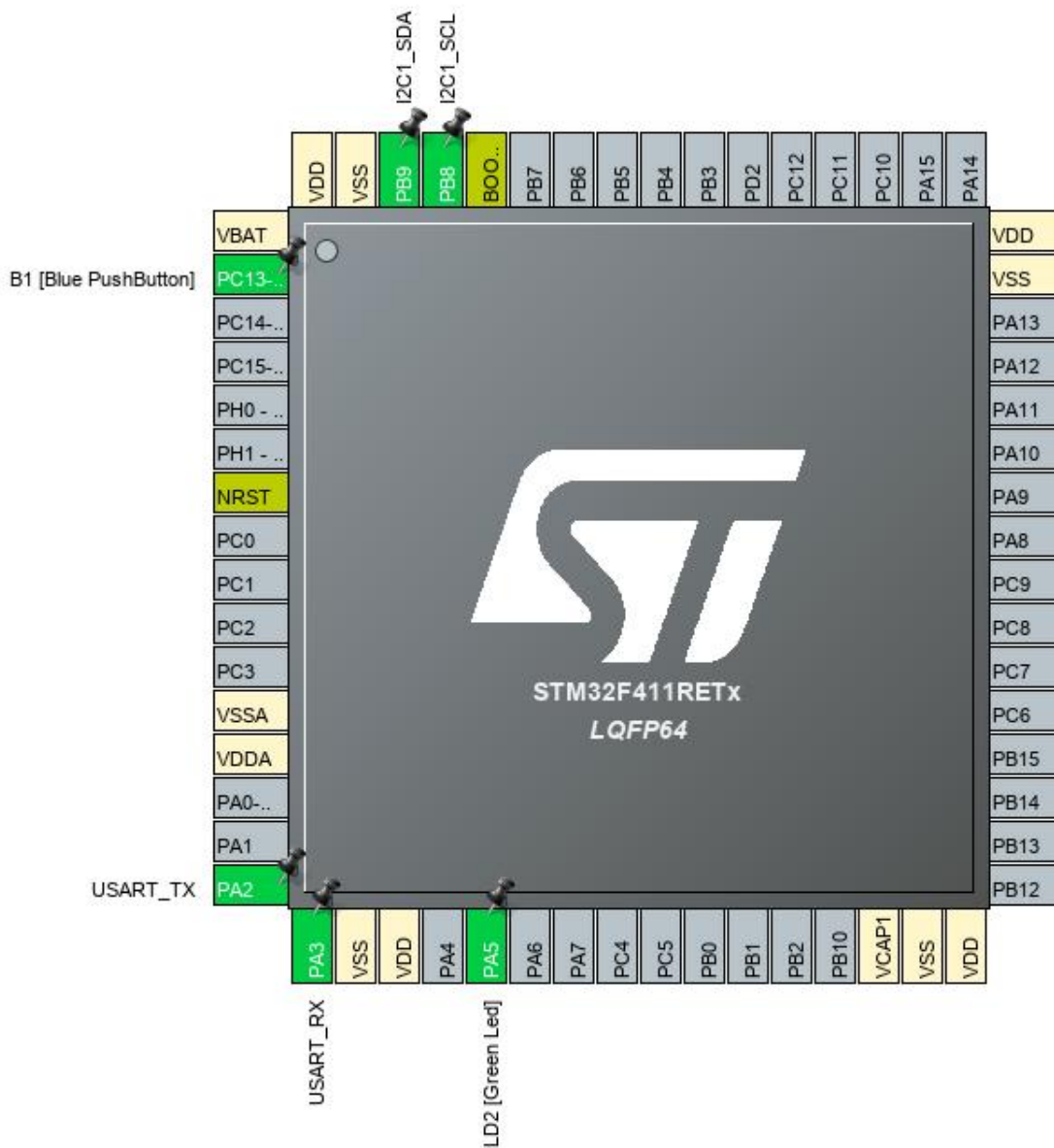
### 1.1. Project

Project Name	EEPROM Memory
Board Name	NUCLEO-F411RE
Generated with:	STM32CubeMX 5.2.0
Date	07/12/2019

### 1.2. MCU

MCU Series	STM32F4
MCU Line	STM32F411
MCU name	STM32F411RETx
MCU Package	LQFP64
MCU Pin number	64

## 2. Pinout Configuration

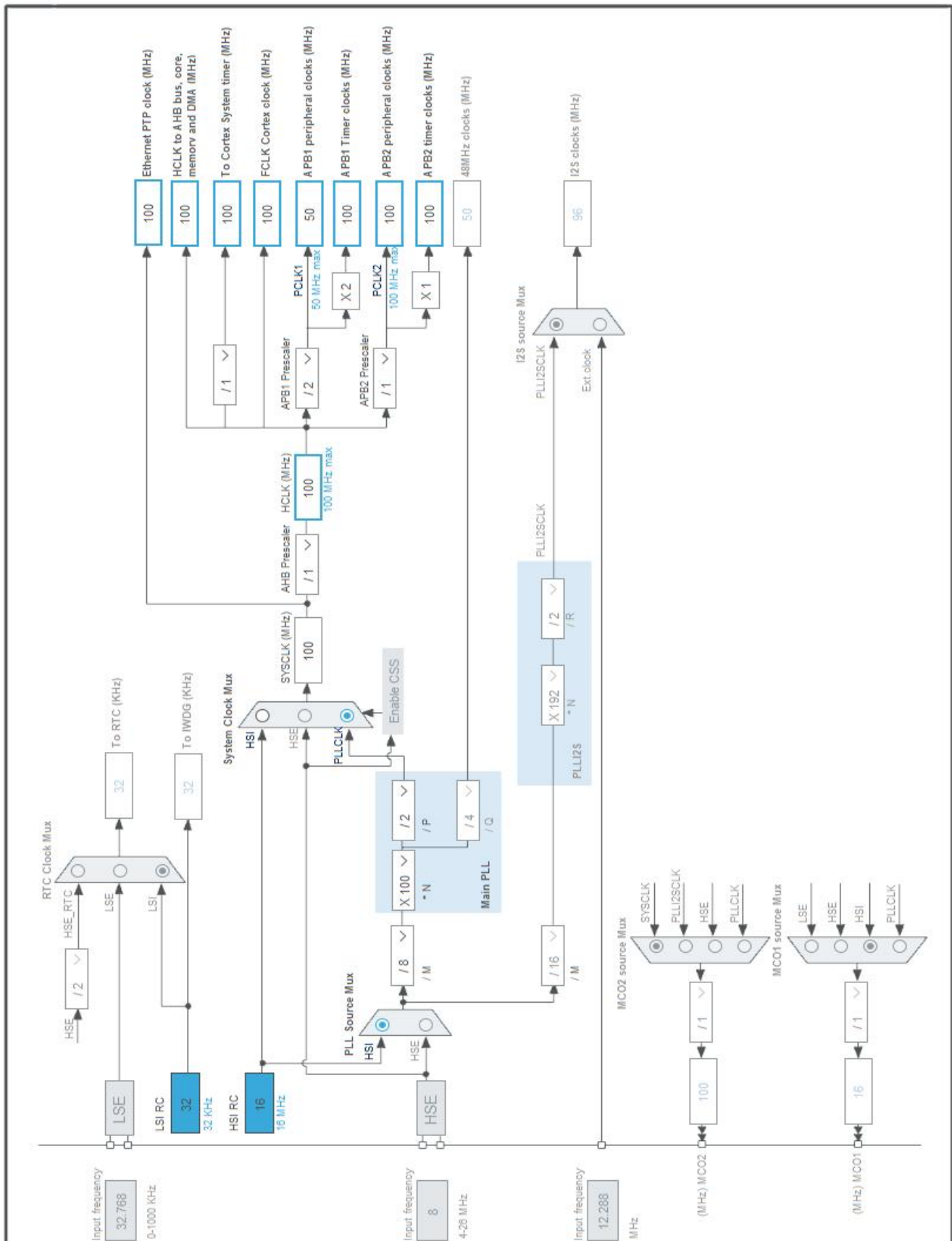


### 3. Pins Configuration

Pin Number LQFP64	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VBAT	Power		
2	PC13-ANTI_TAMP	I/O	GPIO_EXTI13	B1 [Blue PushButton]
7	NRST	Reset		
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]
30	VCAP1	Power		
31	VSS	Power		
32	VDD	Power		
47	VSS	Power		
48	VDD	Power		
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

## 4. Clock Tree Configuration



## 5. Software Project

### 5.1. Project Settings

Name	Value
Project Name	EEPROM Memory
Project Folder	F:\STM32\EEPROM Memory
Toolchain / IDE	TrueSTUDIO
Firmware Package Name and Version	STM32Cube FW_F4 V1.24.1

### 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	STM32F4
Line	STM32F411
MCU	STM32F411RETx
Datasheet	026289_Rev6

### 6.2. Parameter Selection

Temperature	25
Vdd	null

## 7. IPs and Middleware Configuration

### 7.1. I2C1

#### I2C: I2C

##### 7.1.1. 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

### 7.2. SYS

#### Timebase Source: SysTick

### 7.3. USART2

#### Mode: Asynchronous

##### 7.3.1. 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

\* 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	<b>Very High</b> *	
	PB9	I2C1_SDA	Alternate Function Open Drain	Pull-up	<b>Very High</b> *	
USART2	PA2	USART2_TX	Alternate Function Push Pull	Pull-up	<b>Very High</b> *	USART_TX
	PA3	USART2_RX	Alternate Function Push Pull	Pull-up	<b>Very High</b> *	USART_RX
GPIO	PC13- ANTI_TAMP	GPIO_EXTI13	<b>External Interrupt Mode with Falling edge trigger detection</b>	No pull-up and no pull-down	n/a	B1 [Blue PushButton]
	PA5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LD2 [Green Led]



## 8.2. DMA configuration

DMA request	Stream	Direction	Priority
I2C1_RX	DMA1_Stream0	Peripheral To Memory	<b>Very High *</b>
I2C1_TX	DMA1_Stream1	Memory To Peripheral	<b>Very High *</b>

### I2C1\_RX: DMA1\_Stream0 DMA request Settings:

Mode: Normal  
 Use fifo: Disable  
 Peripheral Increment: Disable  
 Memory Increment: **Enable \***  
 Peripheral Data Width: Byte  
 Memory Data Width: Byte

### I2C1\_TX: DMA1\_Stream1 DMA request Settings:

Mode: Normal  
 Use fifo: Disable  
 Peripheral Increment: Disable  
 Memory Increment: **Enable \***  
 Peripheral Data Width: Byte  
 Memory Data Width: Byte

### 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
DMA1 stream0 global interrupt	true	0	0
DMA1 stream1 global interrupt	true	0	0
I2C1 event interrupt	true	0	0
I2C1 error interrupt	true	0	0
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
USART2 global interrupt	unused		
EXTI line[15:10] interrupts	unused		
FPU global interrupt	unused		

\* User modified value

## ***9. Software Pack Report***