

## 1. Description

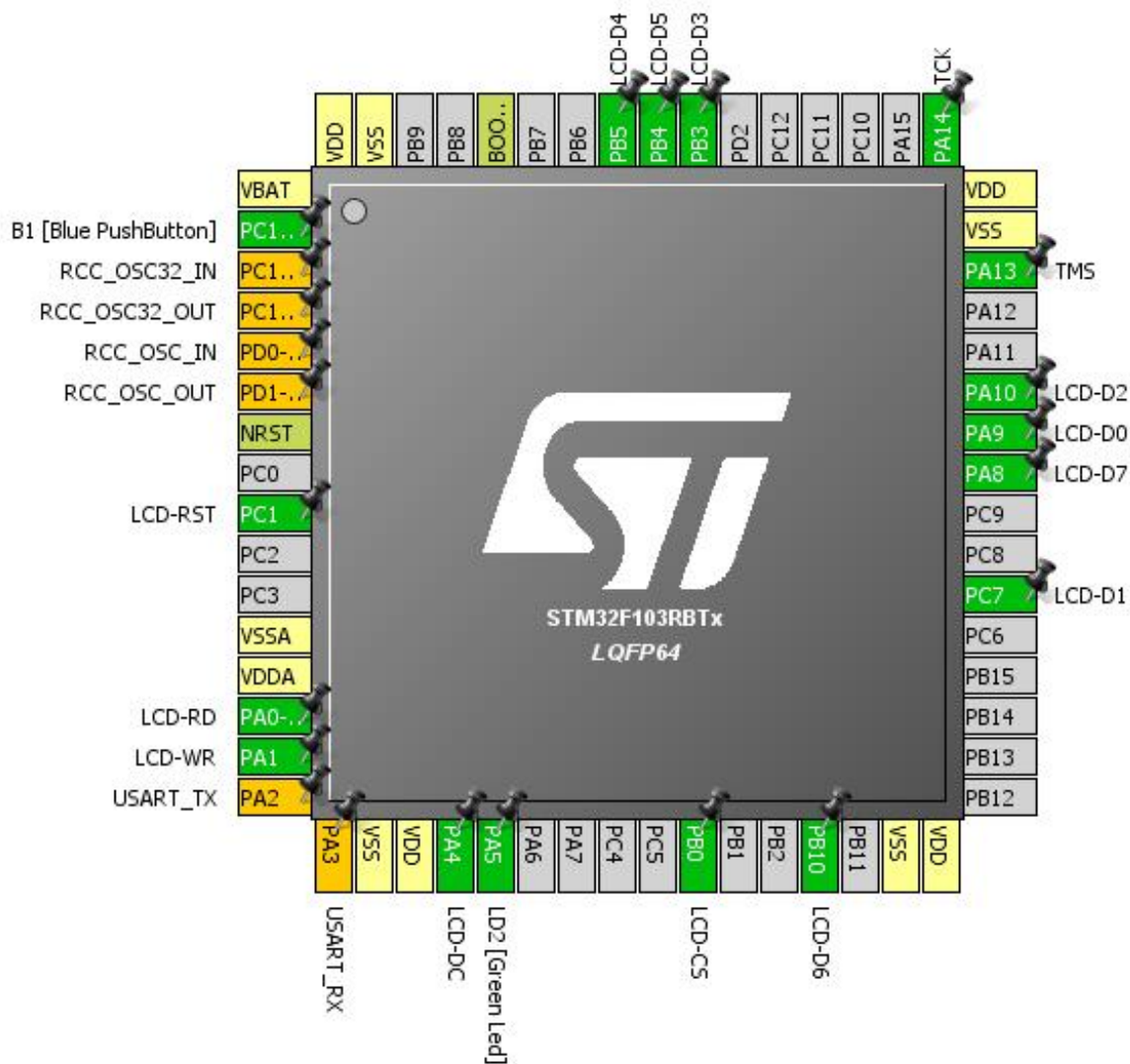
### 1.1. Project

Project Name	utf
Board Name	NUCLEO-F103RB
Generated with:	STM32CubeMX 4.21.0
Date	01/20/2019

### 1.2. MCU

MCU Series	STM32F1
MCU Line	STM32F103
MCU name	STM32F103RBTx
MCU Package	LQFP64
MCU Pin number	64

## 2. Pinout Configuration



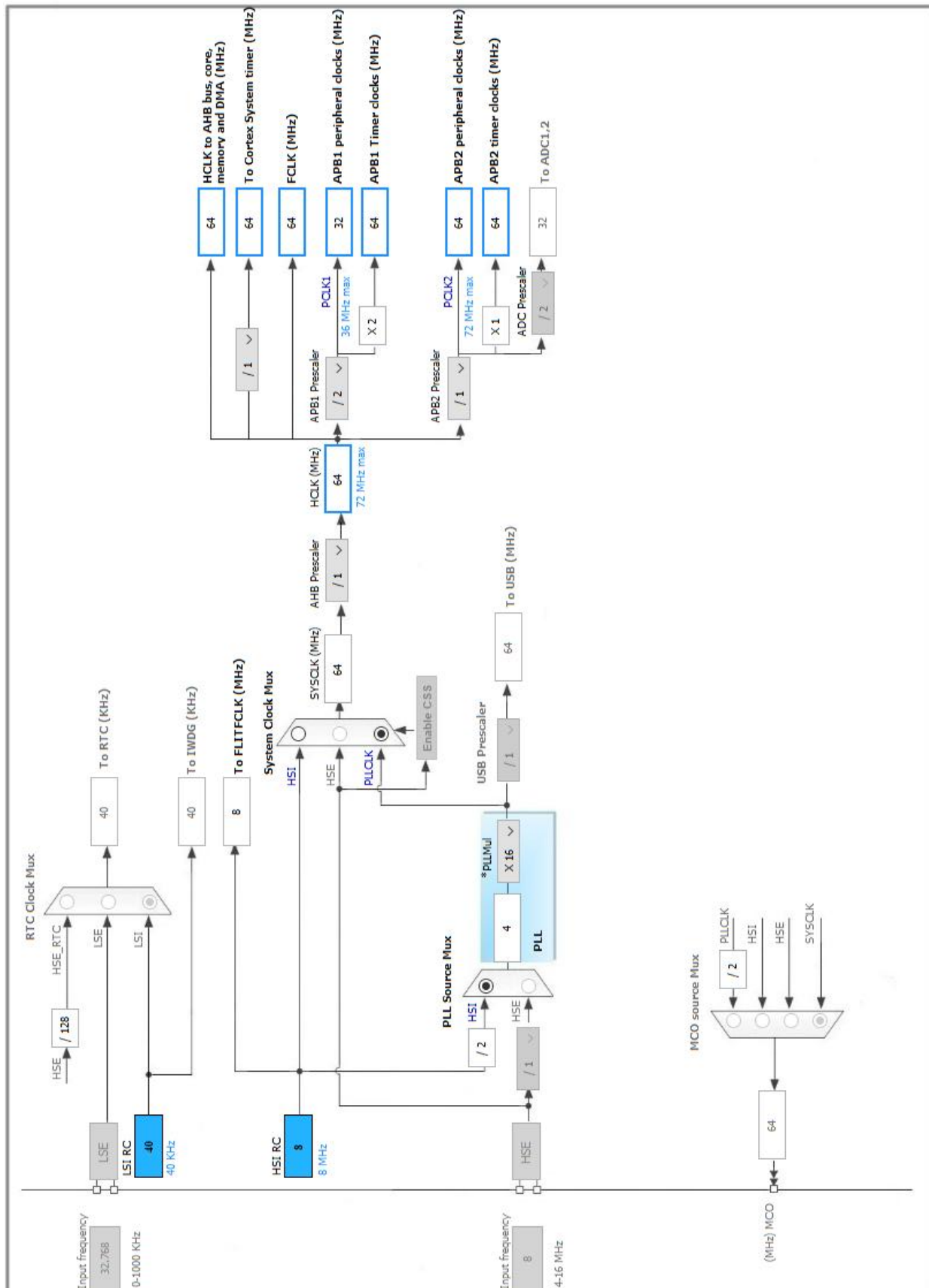
### 3. Pins Configuration

Pin Number LQFP64	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VBAT	Power		
2	PC13-TAMPER-RTC	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	PD0-OSC_IN *	I/O	RCC_OSC_IN	
6	PD1-OSC_OUT *	I/O	RCC_OSC_OUT	
7	NRST	Reset		
9	PC1 **	I/O	GPIO_Output	LCD-RST
12	VSSA	Power		
13	VDDA	Power		
14	PA0-WKUP **	I/O	GPIO_Output	LCD-RD
15	PA1 **	I/O	GPIO_Output	LCD-WR
16	PA2 *	I/O	USART2_TX	USART_TX
17	PA3 *	I/O	USART2_RX	USART_RX
18	VSS	Power		
19	VDD	Power		
20	PA4 **	I/O	GPIO_Output	LCD-DC
21	PA5 **	I/O	GPIO_Output	LD2 [Green Led]
26	PB0 **	I/O	GPIO_Output	LCD-CS
29	PB10 **	I/O	GPIO_Output	LCD-D6
31	VSS	Power		
32	VDD	Power		
38	PC7 **	I/O	GPIO_Output	LCD-D1
41	PA8 **	I/O	GPIO_Output	LCD-D7
42	PA9 **	I/O	GPIO_Output	LCD-D0
43	PA10 **	I/O	GPIO_Output	LCD-D2
46	PA13	I/O	SYS_JTMS-SWDIO	TMS
47	VSS	Power		
48	VDD	Power		
49	PA14	I/O	SYS_JTCK-SWCLK	TCK
55	PB3 **	I/O	GPIO_Output	LCD-D3
56	PB4 **	I/O	GPIO_Output	LCD-D5
57	PB5 **	I/O	GPIO_Output	LCD-D4
60	BOOT0	Boot		
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. IPs and Middleware Configuration***

### ***5.1. SYS***

**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
SYS	PA13	SYS_JTMS-SWDIO	n/a	n/a	n/a	TMS
	PA14	SYS_JTCK-SWCLK	n/a	n/a	n/a	TCK
Single Mapped Signals	PC14-OSC32_IN	RCC_OSC32_IN	n/a	n/a	n/a	
	PC15-OSC32_OUT	RCC_OSC32_OUT	n/a	n/a	n/a	
	PD0-OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	
	PD1-OSC_OUT	RCC_OSC_OUT	n/a	n/a	n/a	
	PA2	USART2_TX	Alternate Function Push Pull	n/a	Low	USART_TX
	PA3	USART2_RX	*	No pull-up and no pull-down	n/a	USART_RX
GPIO	PC13-TAMPER-RTC	GPIO_EXTI13	<b>External Interrupt Mode with Falling edge trigger detection</b>	No pull-up and no pull-down	n/a	B1 [Blue PushButton]
	PC1	GPIO_Output	Output Push Pull	n/a	Low	LCD-RST
	PA0-WKUP	GPIO_Output	Output Push Pull	n/a	Low	LCD-RD
	PA1	GPIO_Output	Output Push Pull	n/a	Low	LCD-WR
	PA4	GPIO_Output	Output Push Pull	n/a	Low	LCD-DC
	PA5	GPIO_Output	Output Push Pull	n/a	Low	LD2 [Green Led]
	PB0	GPIO_Output	Output Push Pull	n/a	Low	LCD-CS
	PB10	GPIO_Output	Output Push Pull	n/a	Low	LCD-D6
	PC7	GPIO_Output	Output Push Pull	n/a	Low	LCD-D1
	PA8	GPIO_Output	Output Push Pull	n/a	Low	LCD-D7
	PA9	GPIO_Output	Output Push Pull	n/a	Low	LCD-D0
	PA10	GPIO_Output	Output Push Pull	n/a	Low	LCD-D2
	PB3	GPIO_Output	Output Push Pull	n/a	Low	LCD-D3
	PB4	GPIO_Output	Output Push Pull	n/a	Low	LCD-D5
	PB5	GPIO_Output	Output Push Pull	n/a	Low	LCD-D4

## **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
Prefetch 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
EXTI line[15:10] interrupts	true	0	0
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		

\* User modified value

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

### 7.1. Microcontroller Selection

Series	STM32F1
Line	STM32F103
MCU	STM32F103RBTx
Datasheet	13587_Rev17

### 7.2. Parameter Selection

Temperature	25
Vdd	3.3

## 8. Software Project

### 8.1. Project Settings

Name	Value
Project Name	utf8
Project Folder	C:\utf8\utf8
Toolchain / IDE	SW4STM32
Firmware Package Name and Version	STM32Cube FW_F1 V1.4.0

### 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