

## 1. Description

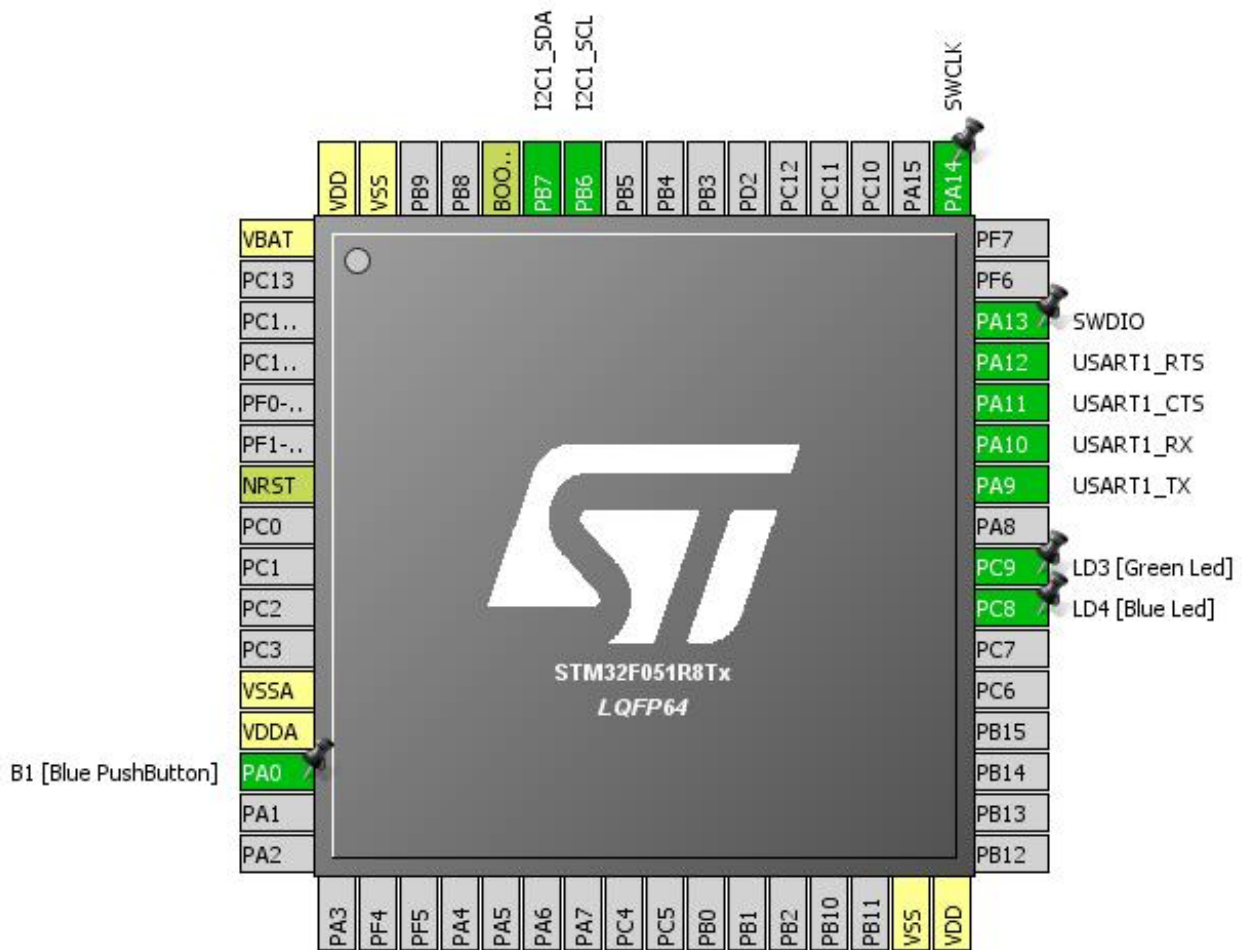
### 1.1. Project

Project Name	testfreertos
Board Name	STM32F0DISCOVERY
Generated with:	STM32CubeMX 4.22.0
Date	03/20/2018

### 1.2. MCU

MCU Series	STM32F0
MCU Line	STM32F0x1
MCU name	STM32F051R8Tx
MCU Package	LQFP64
MCU Pin number	64

## 2. Pinout Configuration

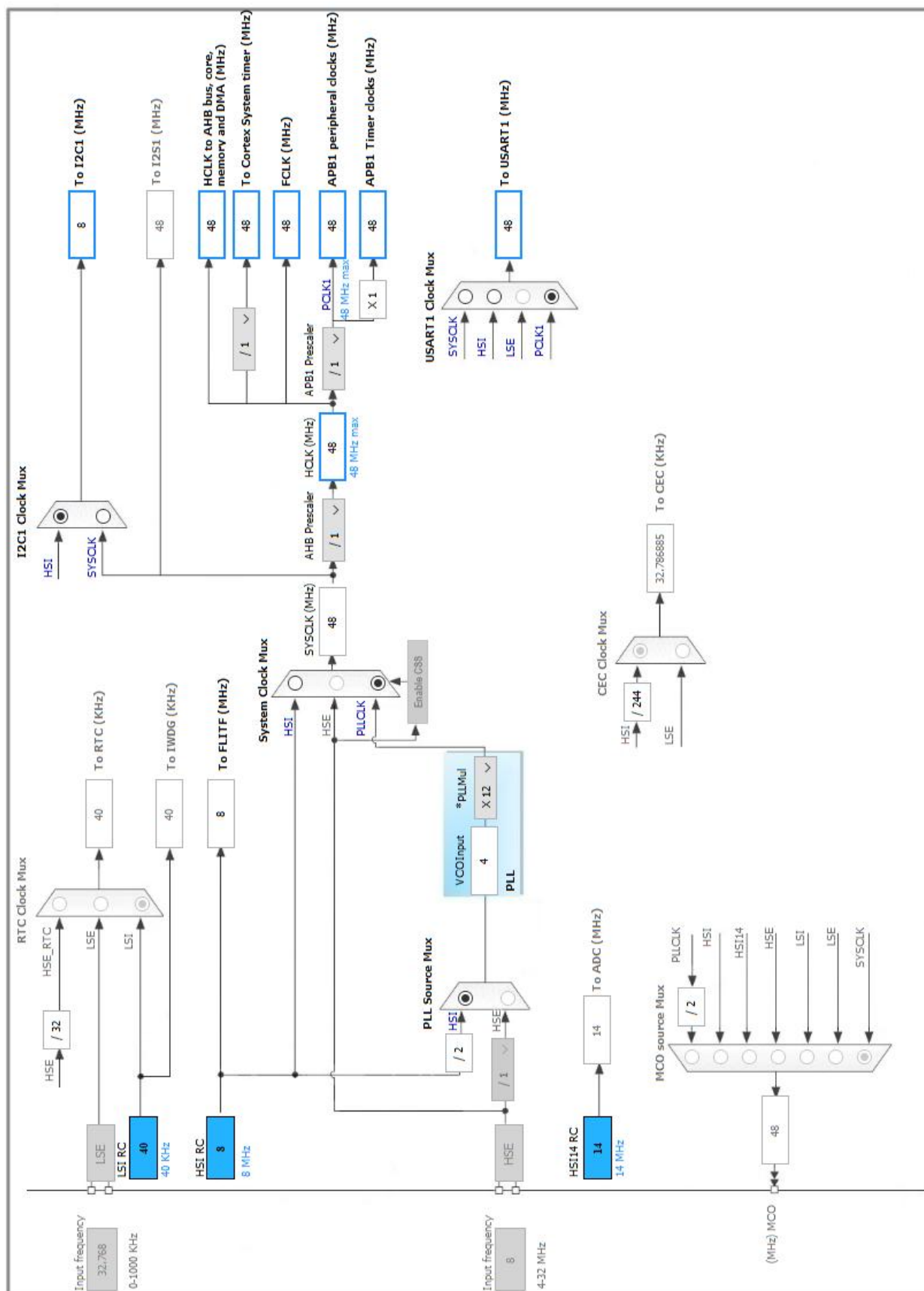


### 3. Pins Configuration

Pin Number LQFP64	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VBAT	Power		
7	NRST	Reset		
12	VSSA	Power		
13	VDDA	Power		
14	PA0	I/O	GPIO_EXTI0	B1 [Blue PushButton]
31	VSS	Power		
32	VDD	Power		
39	PC8 *	I/O	GPIO_Output	LD4 [Blue Led]
40	PC9 *	I/O	GPIO_Output	LD3 [Green Led]
42	PA9	I/O	USART1_TX	
43	PA10	I/O	USART1_RX	
44	PA11	I/O	USART1_CTS	
45	PA12	I/O	USART1_RTS	
46	PA13	I/O	SYS_SWDIO	SWDIO
49	PA14	I/O	SYS_SWCLK	SWCLK
58	PB6	I/O	I2C1_SCL	
59	PB7	I/O	I2C1_SDA	
60	BOOT0	Boot		
63	VSS	Power		
64	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:

###### 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

### 5.2. SYS

mode: Debug Serial Wire

Timebase Source: TIM1

### 5.3. USART1

Mode: Asynchronous

Hardware Flow Control (RS232): CTS/RTS

##### 5.3.1. Parameter Settings:

###### Basic Parameters:

Baud Rate	38400
Word Length	8 Bits (including Parity)
Parity	None

Stop Bits	1
<b>Advanced Parameters:</b>	
Data Direction	Receive and Transmit
Over Sampling	16 Samples
Single Sample	Disable
<b>Advanced Features:</b>	
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

## 5.4. FREERTOS

mode: Enabled

### 5.4.1. Config parameters:

#### Versions:

FreeRTOS version	9.0.0
CMSIS-RTOS version	1.02

#### Kernel settings:

USE_PREEMPTION	Enabled
CPU_CLOCK_HZ	SystemCoreClock
TICK_RATE_HZ	1000
MAX_PRIORITIES	7
MINIMAL_STACK_SIZE	128
MAX_TASK_NAME_LEN	16
USE_16_BIT_TICKS	Disabled
IDLE_SHOULD_YIELD	Enabled
USE_MUTEXES	Enabled
USE_RECURSIVE_MUTEXES	Disabled
USE_COUNTING_SEMAPHORES	Disabled
QUEUE_REGISTRY_SIZE	8
USE_APPLICATION_TASK_TAG	Disabled
ENABLE_BACKWARD_COMPATIBILITY	Enabled
USE_PORT_OPTIMISED_TASK_SELECTION	Disabled
USE_TICKLESS_IDLE	Disabled

USE\_TASK\_NOTIFICATIONS Enabled

#### Memory management settings:

Memory Allocation Dynamic  
TOTAL\_HEAP\_SIZE 3072  
Memory Management scheme heap\_4

#### Hook function related definitions:

USE\_IDLE\_HOOK Disabled  
USE\_TICK\_HOOK Disabled  
USE\_MALLOC\_FAILED\_HOOK Disabled  
USE\_DAEMON\_TASK\_STARTUP\_HOOK Disabled  
CHECK\_FOR\_STACK\_OVERFLOW Disabled

#### Run time and task stats gathering related definitions:

GENERATE\_RUN\_TIME\_STATS Disabled  
USE\_TRACE\_FACILITY Disabled  
USE\_STATS\_FORMATTING\_FUNCTIONS Disabled

#### Co-routine related definitions:

USE\_CO\_ROUTINES Disabled  
MAX\_CO\_ROUTINE\_PRIORITIES 2

#### Software timer definitions:

USE\_TIMERS Disabled

#### Interrupt nesting behaviour configuration:

LIBRARY\_LOWEST\_INTERRUPT\_PRIORITY 3  
LIBRARY\_MAX\_SYSCALL\_INTERRUPT\_PRIORITY 3

### 5.4.2. Include parameters:

#### Include definitions:

vTaskPrioritySet Enabled  
uxTaskPriorityGet Enabled  
vTaskDelete Enabled  
vTaskCleanUpResources Disabled  
vTaskSuspend Enabled  
vTaskDelayUntil Disabled  
vTaskDelay Enabled  
xTaskGetSchedulerState Enabled  
xTaskResumeFromISR Enabled  
xQueueGetMutexHolder Disabled  
xSemaphoreGetMutexHolder Disabled  
pcTaskGetTaskName Disabled  
uxTaskGetStackHighWaterMark Disabled  
xTaskGetCurrentTaskHandle Disabled

eTaskGetState	Disabled
xEventGroupSetBitFromISR	Disabled
xTimerPendFunctionCall	Disabled
xTaskAbortDelay	Disabled
xTaskGetHandle	Disabled

**\* 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	High *	
	PB7	I2C1_SDA	Alternate Function Open Drain	Pull-up	High *	
SYS	PA13	SYS_SWDIO	n/a	n/a	n/a	SWDIO
	PA14	SYS_SWCLK	n/a	n/a	n/a	SWCLK
USART1	PA9	USART1_TX	Alternate Function Push Pull	Pull-up	High *	
	PA10	USART1_RX	Alternate Function Push Pull	Pull-up	High *	
	PA11	USART1_CTS	Alternate Function Push Pull	No pull-up and no pull-down	High *	
	PA12	USART1_RTS	Alternate Function Push Pull	No pull-up and no pull-down	High *	
GPIO	PA0	GPIO_EXTI0	<b>External Event Mode with Rising edge trigger detection *</b>	No pull-up and no pull-down	n/a	B1 [Blue PushButton]
	PC8	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LD4 [Blue Led]
	PC9	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LD3 [Green Led]

### 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	3	0
System tick timer	true	3	0
PVD interrupt through EXTI Line16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
TIM1 break, update, trigger and commutation interrupts	unused		
I2C1 event global interrupt / I2C1 wake-up interrupt through EXTI line 23	unused		
USART1 global interrupt / USART1 wake-up interrupt through EXTI line 25	unused		

\* User modified value

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

### 7.1. Microcontroller Selection

Series	STM32F0
Line	STM32F0x1
MCU	STM32F051R8Tx
Datasheet	022265_Rev6

### 7.2. Parameter Selection

Temperature	25
Vdd	3.6

## 8. Software Project

### 8.1. Project Settings

Name	Value
Project Name	testfreertos
Project Folder	C:\Users\jblesa\Documents\freeRTOS\testfreertos
Toolchain / IDE	EWARM
Firmware Package Name and Version	STM32Cube FW_F0 V1.8.0

### 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	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