1. Description

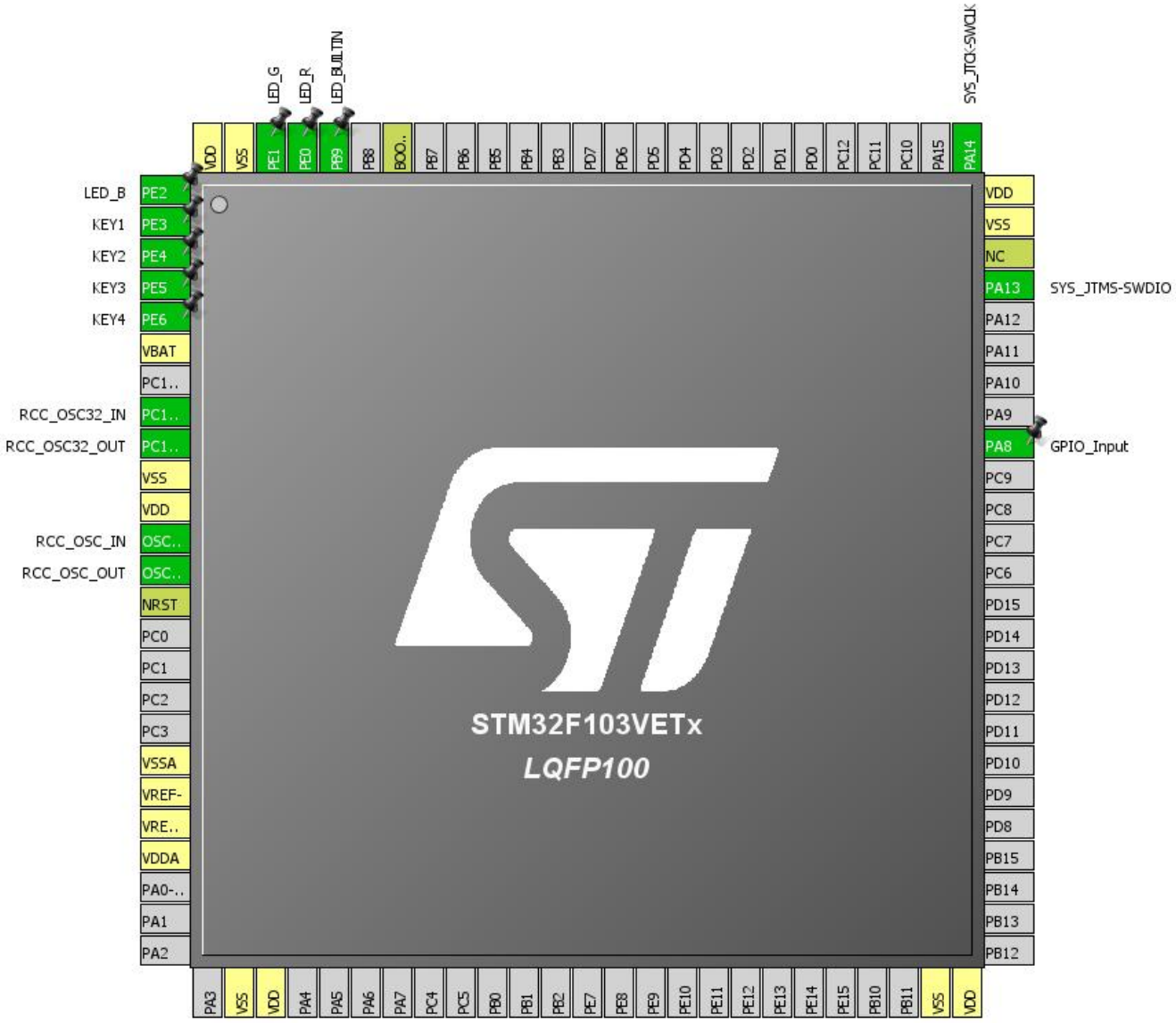
1.1. Project

Project Name	STM32F103VE_lean
Board Name	NUCLEO-F103RB
Generated with:	STM32CubeMX 4.22.0
Date	08/14/2017

1.2. MCU

MCU Series	STM32F1
MCU Line	STM32F103
MCU name	STM32F103VETx
MCU Package	LQFP100
MCU Pin number	100

2. Pinout Configuration

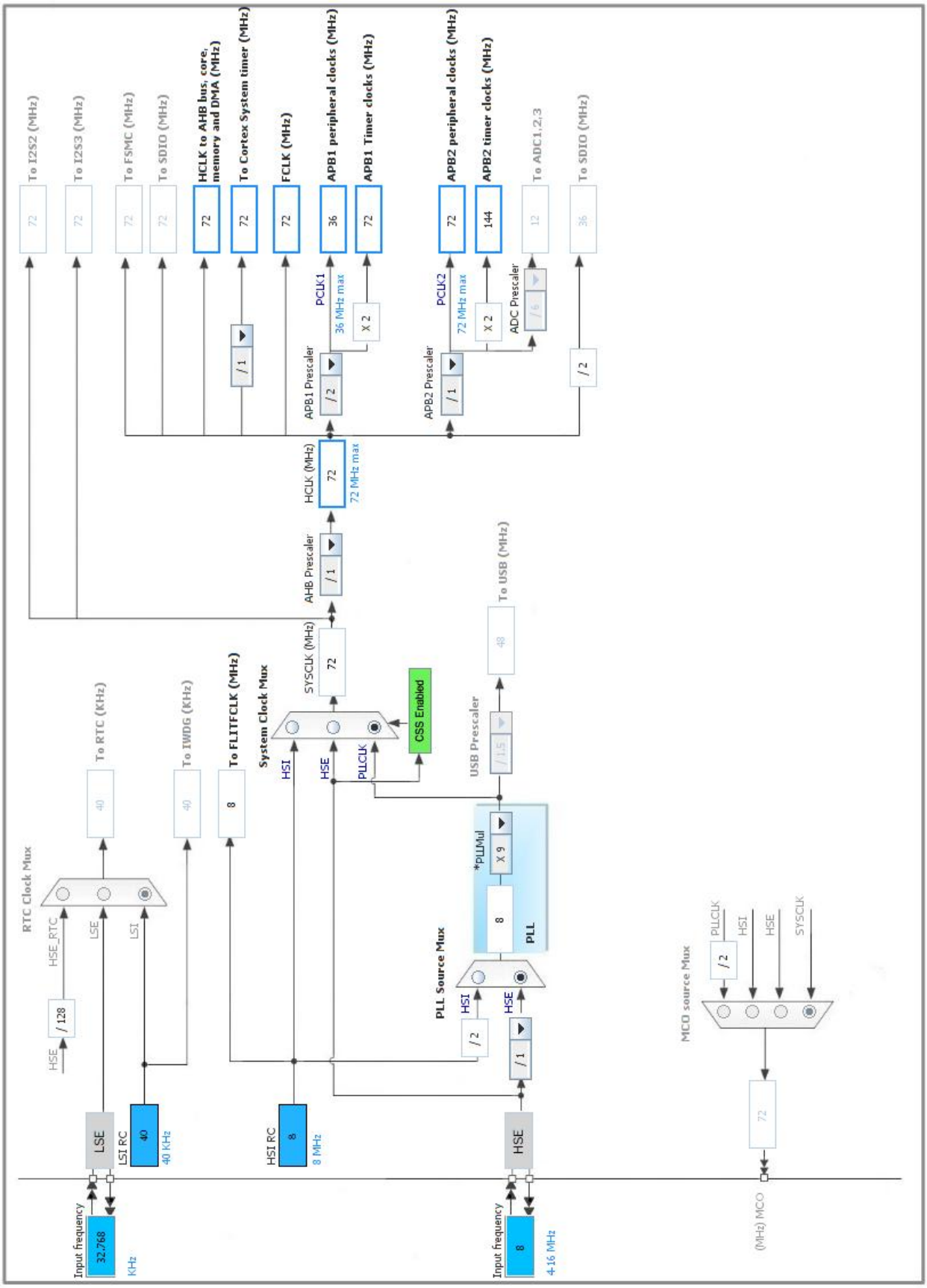


3. Pins Configuration

Pin Number LQFP100	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	PE2 *	I/O	GPIO_Output	LED_B
2	PE3	I/O	GPIO_EXTI3	KEY1
3	PE4	I/O	GPIO_EXTI4	KEY2
4	PE5	I/O	GPIO_EXTI5	KEY3
5	PE6	I/O	GPIO_EXTI6	KEY4
6	VBAT	Power		
8	PC14-OSC32_IN	I/O	RCC_OSC32_IN	
9	PC15-OSC32_OUT	I/O	RCC_OSC32_OUT	
10	VSS	Power		
11	VDD	Power		
12	OSC_IN	I/O	RCC_OSC_IN	
13	OSC_OUT	I/O	RCC_OSC_OUT	
14	NRST	Reset		
19	VSSA	Power		
20	VREF-	Power		
21	VREF+	Power		
22	VDDA	Power		
27	VSS	Power		
28	VDD	Power		
49	VSS	Power		
50	VDD	Power		
67	PA8 *	I/O	GPIO_Input	
72	PA13	I/O	SYS_JTMS-SWDIO	
73	NC	NC		
74	VSS	Power		
75	VDD	Power		
76	PA14	I/O	SYS_JTCK-SWCLK	
94	BOOT0	Boot		
96	PB9 *	I/O	GPIO_Output	LED_BUILTIN
97	PE0 *	I/O	GPIO_Output	LED_R
98	PE1 *	I/O	GPIO_Output	LED_G
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. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

Low Speed Clock (LSE) : Crystal/Ceramic Resonator

5.1.1. Parameter Settings:

System Parameters:	
VDD voltage (V)	3.3
Prefetch Buffer	Enabled
Flash Latency(WS)	2 WS (3 CPU cycle)
RCC Parameters:	
HSI Calibration Value	16
HSE Startup Timout Value (ms)	100
LSE Startup Timout Value (ms)	5000

5.2. 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
RCC	PC14-OSC32_IN	RCC_OSC32_IN	n/a	n/a	n/a	
	PC15-OSC32_OUT	RCC_OSC32_OUT	n/a	n/a	n/a	
	OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	
	OSC_OUT	RCC_OSC_OUT	n/a	n/a	n/a	
SYS	PA13	SYS_JTMS-SWDIO	n/a	n/a	n/a	
	PA14	SYS_JTCK-SWCLK	n/a	n/a	n/a	
GPIO	PE2	GPIO_Output	Output Push Pull	n/a	**Medium ***	LED_B
	PE3	GPIO_EXTI3	**External Interrupt Mode with Falling edge trigger detection**	**Pull-up ***	**n/a**	KEY1
	PE4	GPIO_EXTI4	**External Interrupt Mode with Falling edge trigger detection**	**Pull-up ***	**n/a**	KEY2
	PE5	GPIO_EXTI5	**External Interrupt Mode with Falling edge trigger detection**	**Pull-up ***	**n/a**	KEY3
	PE6	GPIO_EXTI6	**External Interrupt Mode with Falling edge trigger detection**	**Pull-up ***	**n/a**	KEY4
	PA8	GPIO_Input	Input mode	No pull-up and no pull-down	**n/a**	
	PB9	GPIO_Output	Output Push Pull	n/a	**Medium ***	LED_BUILTIN
	PE0	GPIO_Output	Output Push Pull	n/a	**Medium ***	LED_R
	PE1	GPIO_Output	Output Push Pull	n/a	**Medium ***	LED_G

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
RCC global interrupt	true	0	0
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
EXTI line3 interrupt	unused		
EXTI line4 interrupt	unused		
EXTI line[9:5] interrupts	unused		

*** User modified value**

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32F1
Line	STM32F103
MCU	STM32F103VETx
Datasheet	14611_Rev12

7.2. Parameter Selection

Temperature	25
Vdd	3.3

8. Software Project

8.1. Project Settings

Name	Value
Project Name	STM32F103VE_lean
Project Folder	/home/wang/stm32/stm32f103ve_learn
Toolchain / IDE	EWARM
Firmware Package Name and Version	STM32Cube FW_F1 V1.6.0

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	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