1. Description

1.1. Project

Project Name	lxtest
Board Name	custom
Generated with:	STM32CubeMX 4.26.1
Date	09/13/2018

1.2. MCU

MCU Series	STM32L1
MCU Line	STM32L151/152
MCU name	STM32L152RETx
MCU Package	LQFP64
MCU Pin number	64

2. Pinout Configuration
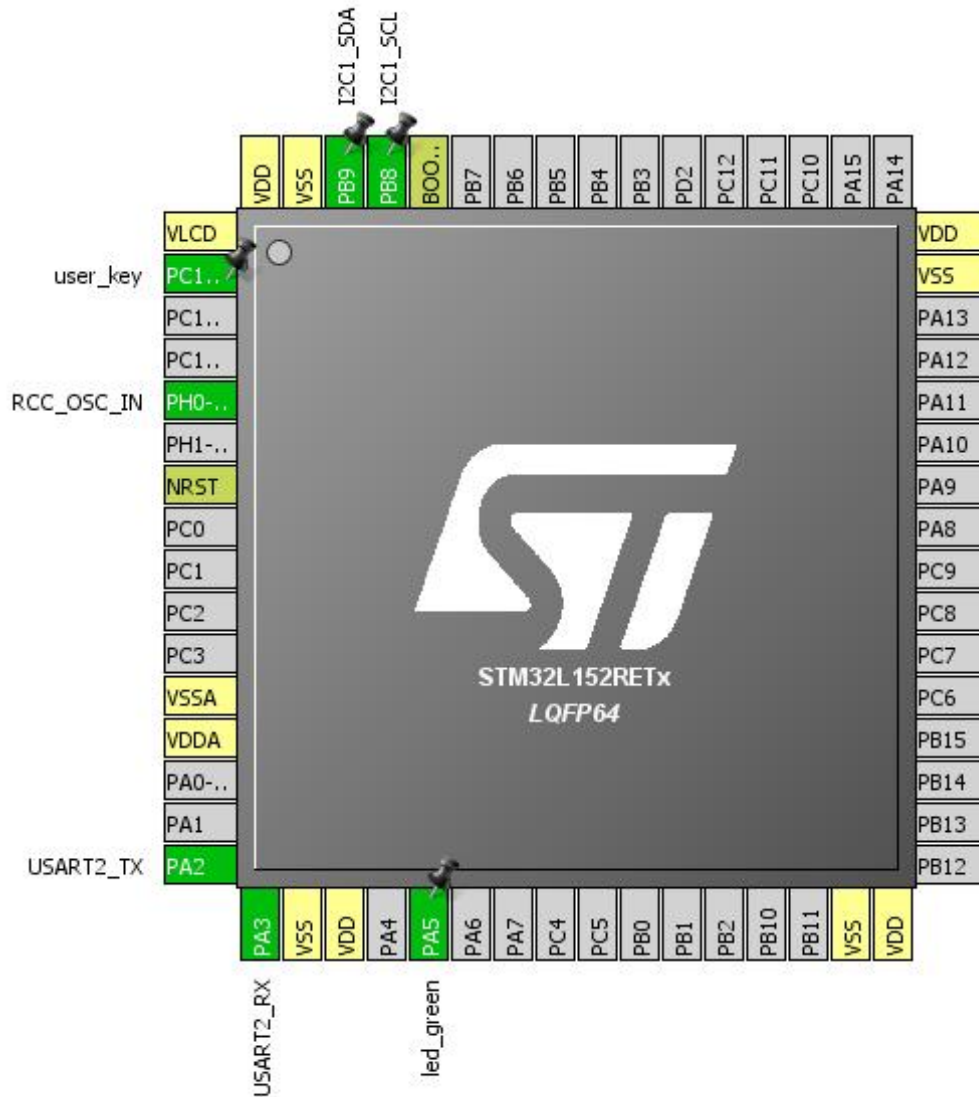
3. Pins Configuration

Pin Number LQFP64	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VLCD	Power		
2	PC13-WKUP2	I/O	GPIO_EXTI13	user_key
5	PH0-OSC_IN	I/O	RCC_OSC_IN	
7	NRST	Reset		
12	VSSA	Power		
13	VDDA	Power		
16	PA2	I/O	USART2_TX	
17	PA3	I/O	USART2_RX	
18	VSS	Power		
19	VDD	Power		
21	PA5 *	I/O	GPIO_Output	led_green
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
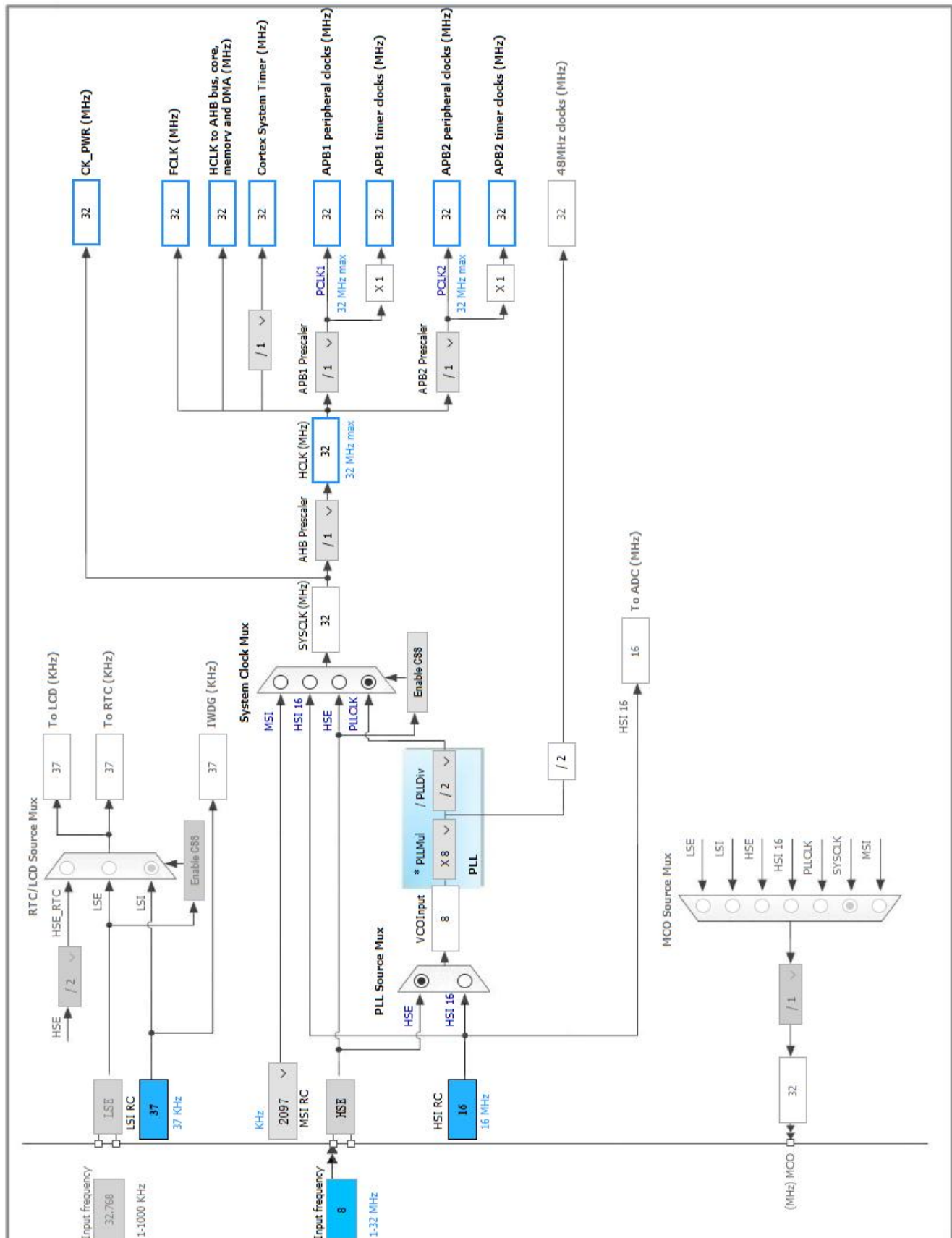
5. IPs and Middleware Configuration

5.1. I2C1

I2C: I2C

5.1.1. Parameter Settings:

Master Features:

I2C Speed Mode	Standard Mode
I2C Clock Speed (Hz)	100000

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): BYPASS Clock Source

5.2.1. Parameter Settings:

System Parameters:

VDD voltage (V)	3.3
Instruction Cache	Enabled
Prefetch Buffer	Disabled
Data Cache	Enabled
Flash Latency(WS)	1 WS (2 CPU cycle)

RCC Parameters:

HSI Calibration Value	16
MSI Calibration Value	0
HSE Startup Timout Value (ms)	100
LSE Startup Timout Value (ms)	5000

Power Parameters:

Power Regulator Voltage Scale	Power Regulator Voltage Scale 1

5.3. SYS

Timebase Source: TIM2

5.4. TIM3

Clock Source   : Internal Clock

5.4.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**3200-1 ***
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**5000-1 ***
Internal Clock Division (CKD)	No Division

Trigger Output (TRGO) Parameters:

Master/Slave Mode (MSM bit)	Disable (Trigger input effect not delayed)
Trigger Event Selection	Reset (UG bit from TIMx_EGR)

5.5. USART2

Mode: Asynchronous

5.5.1. 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

5.6. FREERTOS

mode: Enabled

5.6.1. 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	Enabled
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	15
LIBRARY_MAX_SYSCALL_INTERRUPT_PRIORITY	5

5.6.2. 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	PB8	I2C1_SCL	Alternate Function Open Drain	Pull-up	**High ***	
	PB9	I2C1_SDA	Alternate Function Open Drain	Pull-up	**High ***	
RCC	PH0-OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	
USART2	PA2	USART2_TX	Alternate Function Push Pull	Pull-up	**High ***	
	PA3	USART2_RX	Alternate Function Push Pull	Pull-up	**High ***	
GPIO	PC13-WKUP2	GPIO_EXTI13	**External Interrupt Mode with Falling edge trigger detection**	**Pull-up ***	n/a	user_key
	PA5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Very Low	led_green

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	15	0
System tick timer	true	15	0
TIM2 global interrupt	true	0	0
TIM3 global interrupt	true	6	0
USART2 global interrupt	true	7	0
EXTI line[15:10] interrupts	true	5	0
Flash global interrupt	unused		
RCC global interrupt	unused		
I2C1 event interrupt	unused		
I2C1 error interrupt	unused		

* User modified value

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32L1
Line	STM32L151/152
MCU	STM32L152RETx
Datasheet	025433_Rev8

7.2. Parameter Selection

Temperature	25
Vdd	3.0

8. Software Pack Report