1. Description

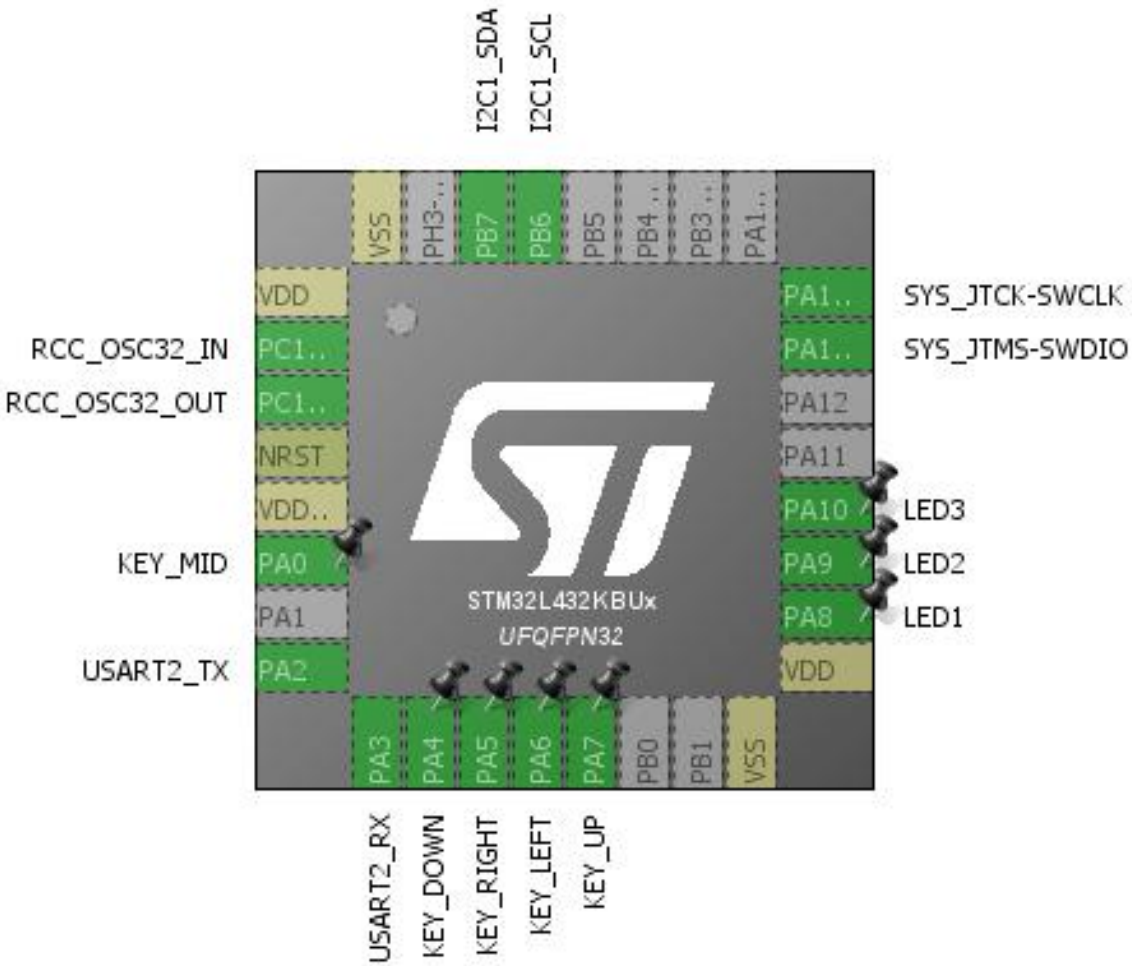
1.1. Project

Project Name	L432Test1
Board Name	custom
Generated with:	STM32CubeMX 4.27.0
Date	11/12/2018

1.2. MCU

MCU Series	STM32L4
MCU Line	STM32L4x2
MCU name	STM32L432KBUx
MCU Package	UFQFPN32
MCU Pin number	32

2. Pinout Configuration

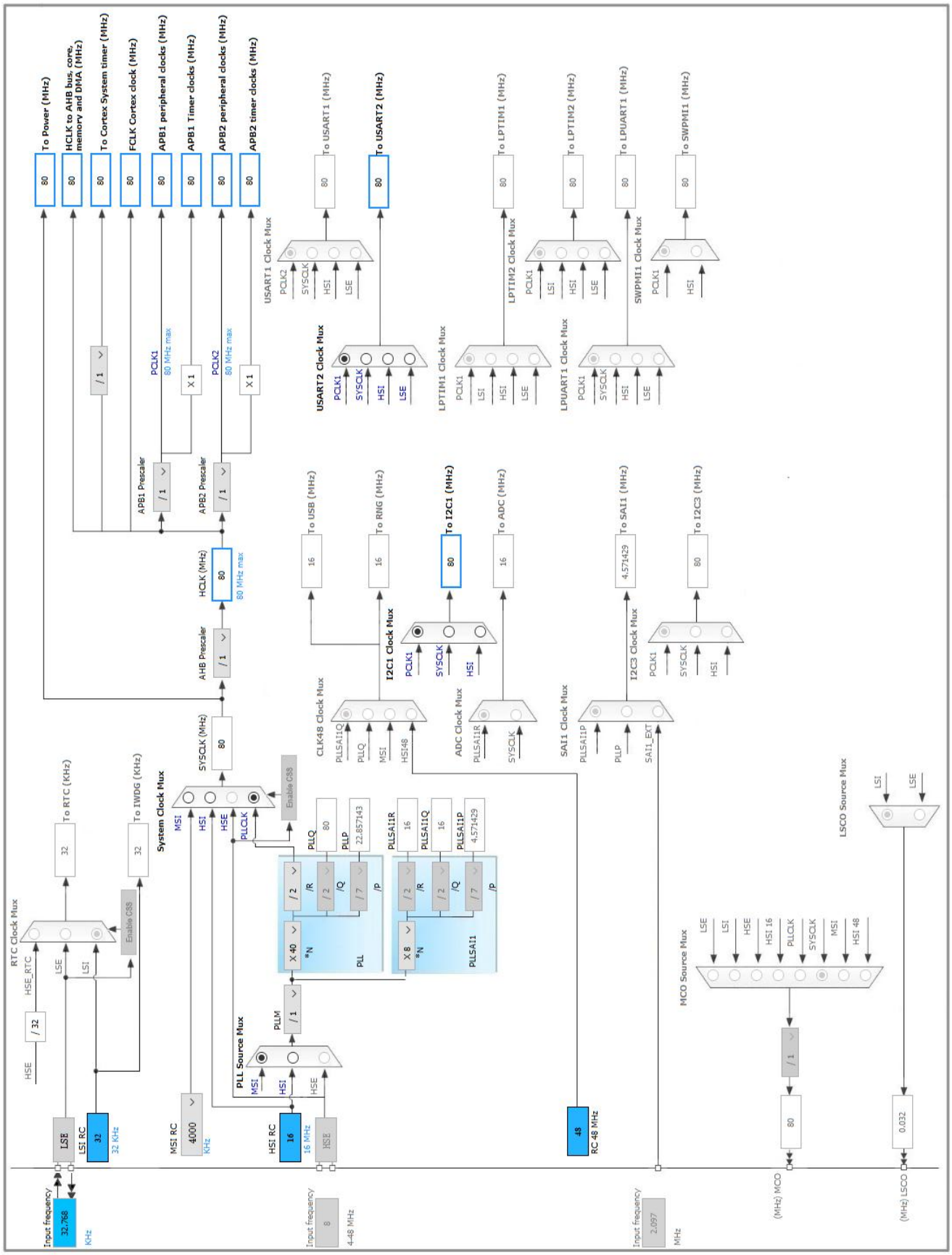


3. Pins Configuration

Pin Number UFQFPN32	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VDD	Power		
2	PC14-OSC32_IN (PC14)	I/O	RCC_OSC32_IN	
3	PC15-OSC32_OUT (PC15)	I/O	RCC_OSC32_OUT	
4	NRST	Reset		
5	VDDA/VREF+	Power		
6	PA0	I/O	GPIO_EXTI0	KEY_MID
8	PA2	I/O	USART2_TX	USART2_TX
9	PA3	I/O	USART2_RX	USART2_RX
10	PA4	I/O	GPIO_EXTI4	KEY_DOWN
11	PA5	I/O	GPIO_EXTI5	KEY_RIGHT
12	PA6	I/O	GPIO_EXTI6	KEY_LEFT
13	PA7	I/O	GPIO_EXTI7	KEY_UP
16	VSS	Power		
17	VDD	Power		
18	PA8 *	I/O	GPIO_Output	LED1
19	PA9 *	I/O	GPIO_Output	LED2
20	PA10 *	I/O	GPIO_Output	LED3
23	PA13 (JTMS-SWDIO)	I/O	SYS_JTMS-SWDIO	
24	PA14 (JTCK-SWCLK)	I/O	SYS_JTCK-SWCLK	
29	PB6	I/O	I2C1_SCL	I2C1_SCL
30	PB7	I/O	I2C1_SDA	I2C1_SDA
32	VSS	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	**Fast Mode ***
I2C Speed Frequency (KHz)	400
Rise Time (ns)	**1 ***
Fall Time (ns)	**2 ***
Coefficient of Digital Filter	0
Analog Filter	Enabled
Timing	**0x00802991 ***

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. RCC

Low Speed Clock (LSE) : Crystal/Ceramic Resonator

5.2.1. Parameter Settings:

System Parameters:

VDD voltage (V)	3.3
Instruction Cache	Enabled
Prefetch Buffer	Disabled
Data Cache	Enabled
Flash Latency(WS)	4 WS (5 CPU cycle)

RCC Parameters:

HSI Calibration Value	16
MSI Calibration Value	0
MSI Auto Calibration	Enabled
HSE Startup Timout Value (ms)	100
LSE Startup Timout Value (ms)	5000
LSE Drive Capability	LSE oscillator low drive capability

Power Parameters:

Power Regulator Voltage Scale	Power Regulator Voltage Scale 1

5.3. SYS

Debug: Serial Wire

Timebase Source: TIM1

5.4. TIM2

Clock Source : Internal Clock

5.4.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**89 ***
Counter Mode	Up
Counter Period (AutoReload Register - 32 bits value)	**49 ***
Internal Clock Division (CKD)	No Division
auto-reload preload	Disable

Trigger Output (TRGO) Parameters:

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

5.5. USART2

Mode: Asynchronous

5.5.1. Parameter Settings:

Basic Parameters:

Baud Rate	**9600 ***
Word Length	8 Bits (including Parity)
Parity	None
Stop Bits	1

Advanced Parameters:

Data Direction	Receive and Transmit
Over Sampling	16 Samples
Single Sample	Disable

Advanced Features:

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

5.6. FREERTOS

mode: Enabled

5.6.1. Config parameters:

Versions:

FreeRTOS version	10.0.1
CMSIS-RTOS version	1.02

Kernel settings:

USE_PREEMPTION	Enabled
CPU_CLOCK_HZ	SystemCoreClock
TICK_RATE_HZ	1000
MAX_PRIORITIES	7
MINIMAL_STACK_SIZE	**64 ***
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
RECORD_STACK_HIGH_ADDRESS	Disabled

Memory management settings:

Memory Allocation	Dynamic
TOTAL_HEAP_SIZE	3000
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	**Enabled ***
USE_TRACE_FACILITY	**Enabled ***
USE_STATS_FORMATTING_FUNCTIONS	**Enabled ***

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	**Enabled ***

*** 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	**Very High ***	I2C1_SCL
	PB7	I2C1_SDA	Alternate Function Open Drain	Pull-up	**Very High ***	I2C1_SDA
RCC	PC14-OSC32_IN (PC14)	RCC_OSC32_IN	n/a	n/a	n/a	
	PC15-OSC32_OUT (PC15)	RCC_OSC32_OUT	n/a	n/a	n/a	
SYS	PA13 (JTMS-SWDIO)	SYS_JTMS-SWDIO	n/a	n/a	n/a	
	PA14 (JTCK-SWCLK)	SYS_JTCK-SWCLK	n/a	n/a	n/a	
USART2	PA2	USART2_TX	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	USART2_TX
	PA3	USART2_RX	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	USART2_RX
GPIO	PA0	GPIO_EXTI0	**External Interrupt Mode with Falling edge trigger detection**	No pull-up and no pull-down	n/a	KEY_MID
	PA4	GPIO_EXTI4	**External Interrupt Mode with Falling edge trigger detection**	No pull-up and no pull-down	n/a	KEY_DOWN
	PA5	GPIO_EXTI5	**External Interrupt Mode with Falling edge trigger detection**	No pull-up and no pull-down	n/a	KEY_RIGHT
	PA6	GPIO_EXTI6	**External Interrupt Mode with Falling edge trigger detection**	No pull-up and no pull-down	n/a	KEY_LEFT
	PA7	GPIO_EXTI7	**External Interrupt Mode with Falling edge trigger detection**	No pull-up and no pull-down	n/a	KEY_UP
	PA8	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED1

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
	PA9	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED2
	PA10	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED3

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	15	0
System tick timer	true	15	0
EXTI line0 interrupt	true	5	0
EXTI line4 interrupt	true	5	0
EXTI line[9:5] interrupts	true	5	0
TIM1 update interrupt and TIM16 global interrupt	true	0	0
TIM2 global interrupt	true	5	0
PVD/PVM1/PVM2/PVM3/PVM4 interrupts through EXTI lines 16/35/36/37/38	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
I2C1 event interrupt	unused		
I2C1 error interrupt	unused		
USART2 global interrupt	unused		
FPU global interrupt	unused		

*** User modified value**

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32L4
Line	STM32L4x2
MCU	STM32L432KBUx
Datasheet	028798_Rev2

7.2. Parameter Selection

Temperature	25
Vdd	null

8. Software Project

8.1. Project Settings

Name	Value
Project Name	L432Test1
Project Folder	F:\System\Documents\CubeMX\L432Test1
Toolchain / IDE	EWARM V8
Firmware Package Name and Version	STM32Cube FW_L4 V1.13.0

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)	No

9. Software Pack Report