

1. Description

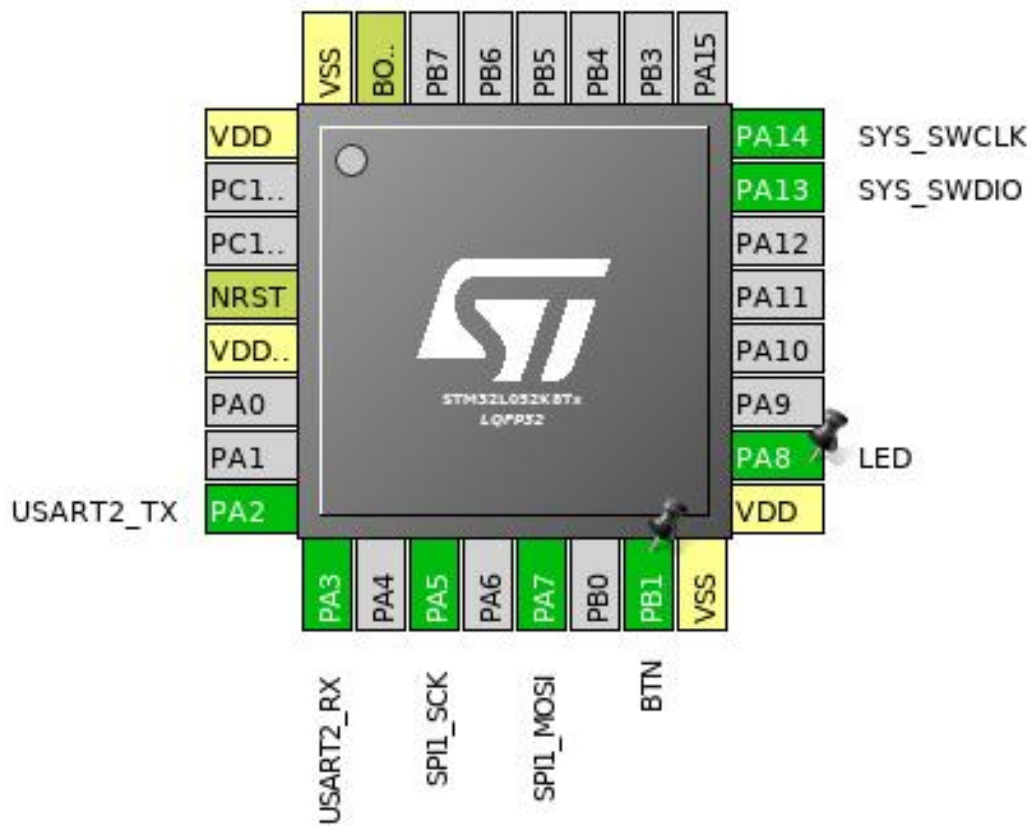
1.1. Project

Project Name	sk6812led
Board Name	custom
Generated with:	STM32CubeMX 4.26.1
Date	09/11/2018

1.2. MCU

MCU Series	STM32L0
MCU Line	STM32L0x2
MCU name	STM32L052K8Tx
MCU Package	LQFP32
MCU Pin number	32

2. Pinout Configuration

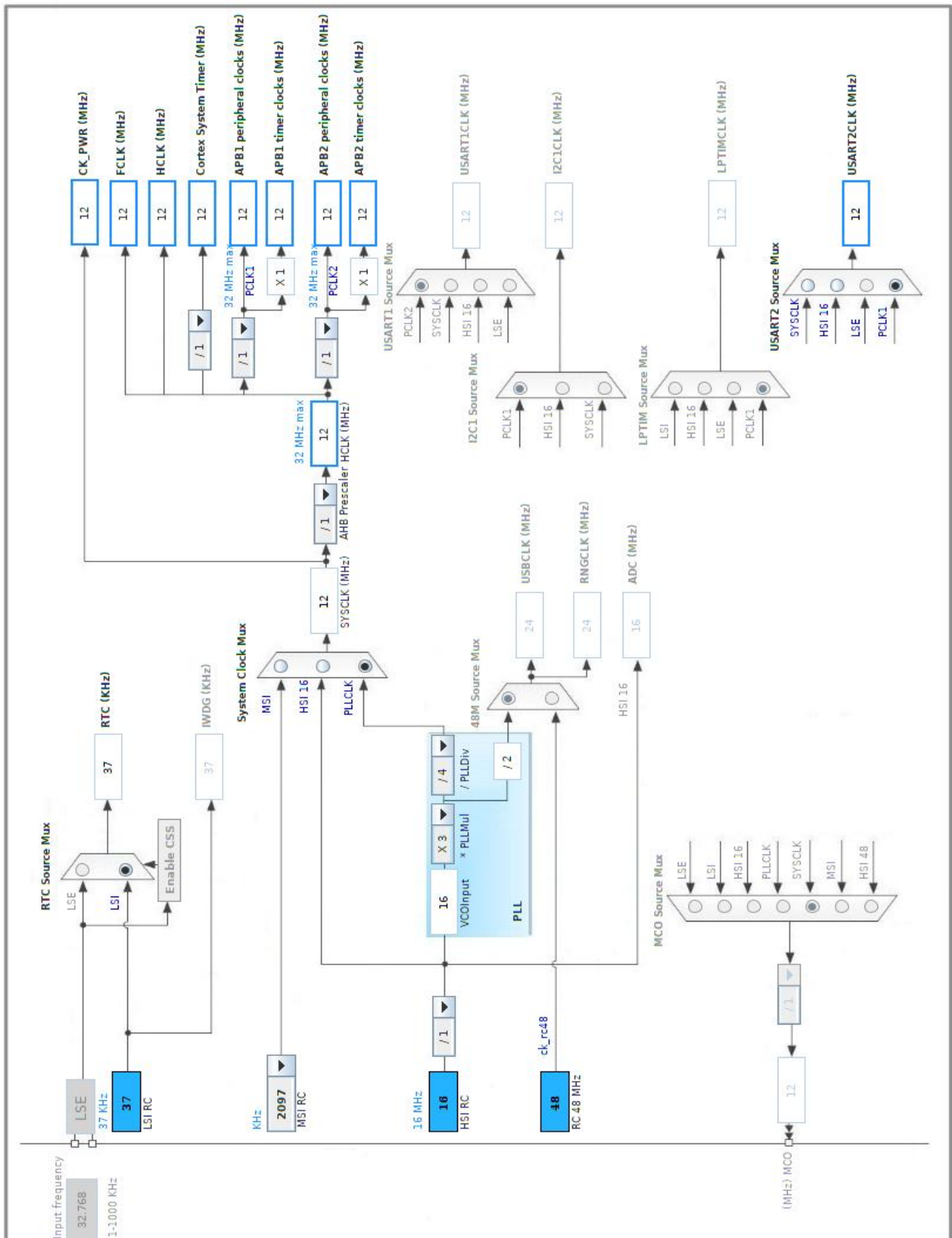


3. Pins Configuration

Pin Number LQFP32	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VDD	Power		
4	NRST	Reset		
5	VDDA	Power		
8	PA2	I/O	USART2_TX	
9	PA3	I/O	USART2_RX	
11	PA5	I/O	SPI1_SCK	
13	PA7	I/O	SPI1_MOSI	
15	PB1	I/O	GPIO_EXTI1	BTN
16	VSS	Power		
17	VDD	Power		
18	PA8 *	I/O	GPIO_Output	LED
23	PA13	I/O	SYS_SWDIO	
24	PA14	I/O	SYS_SWCLK	
31	BOOT0	Boot		
32	VSS	Power		

* The pin is affected with an I/O function

4. Clock Tree Configuration



5. IPs and Middleware Configuration

5.1. RTC

mode: Activate Clock Source

mode: Activate Calendar

mode: WakeUp

5.1.1. Parameter Settings:

General:

Hour Format Hourformat 24

Asynchronous Predivider value **124 ***

Synchronous Predivider value **295 ***

Calendar Time:

Data Format BCD data format

Hours 0

Minutes 0

Seconds 0

Day Light Saving: value of hour adjustment Daylightsaving None

Store Operation Storeoperation Reset

Calendar Date:

Week Day Monday

Month January

Date 1

Year 0

Wake UP:

Wake Up Clock **RTCCLK / 4 ***

Wake Up Counter **924 ***

5.2. SPI1

Mode: Transmit Only Master

5.2.1. Parameter Settings:

Basic Parameters:

Frame Format Motorola

Data Size 8 Bits

First Bit MSB First

Clock Parameters:

Prescaler (for Baud Rate)	2
Baud Rate	6.0 MBits/s *
Clock Polarity (CPOL)	Low
Clock Phase (CPHA)	1 Edge
Advanced Parameters:	
CRC Calculation	Disabled
NSS Signal Type	Software

5.3. SYS

mode: Debug Serial Wire

Timebase Source: SysTick

5.4. USART2

Mode: Asynchronous

5.4.1. 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
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

*** User modified value**

6. System Configuration

6.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
SPI1	PA5	SPI1_SCK	Alternate Function Push Pull	No pull-up and no pull-down	Very High *	
	PA7	SPI1_MOSI	Alternate Function Push Pull	No pull-up and no pull-down	Very High *	
SYS	PA13	SYS_SWDIO	n/a	n/a	n/a	
	PA14	SYS_SWCLK	n/a	n/a	n/a	
USART2	PA2	USART2_TX	Alternate Function Push Pull	No pull-up and no pull-down	Very High *	
	PA3	USART2_RX	Alternate Function Push Pull	No pull-up and no pull-down	Very High *	
GPIO	PB1	GPIO_EXTI1	External Interrupt Mode with Falling edge trigger detection	Pull-up *	n/a	BTN
	PA8	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED

6.2. DMA configuration

DMA request	Stream	Direction	Priority
SPI1_TX	DMA1_Channel3	Memory To Peripheral	Low

SPI1_TX: DMA1_Channel3 DMA request Settings:

Mode: Normal
Peripheral Increment: Disable
Memory Increment: **Enable ***
Peripheral Data Width: Byte
Memory Data Width: Byte

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	0	0
System tick timer	true	0	0
EXTI line 0 and line 1 interrupts	true	0	0
DMA1 channel 2 and channel 3 interrupts	true	0	0
PVD interrupt through EXTI line 16	unused		
RTC global interrupt through EXTI lines 17, 19 and 20 and LSE CSS interrupt through EXTI line 19	unused		
Flash and EEPROM global interrupt	unused		
RCC and CRS global interrupt	unused		
SPI1 global interrupt	unused		
USART2 global interrupt / USART2 wake-up interrupt through EXTI line 26	unused		

* User modified value

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32L0
Line	STM32L0x2
MCU	STM32L052K8Tx
Datasheet	025936_Rev7

7.2. Parameter Selection

Temperature	25
Vdd	null

8. Software Project

8.1. Project Settings

Name	Value
Project Name	sk6812led
Project Folder	/home/sungjune/Projects/sk6812led
Toolchain / IDE	Makefile
Firmware Package Name and Version	STM32Cube FW_L0 V1.10.0

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

9. Software Pack Report