1. Description

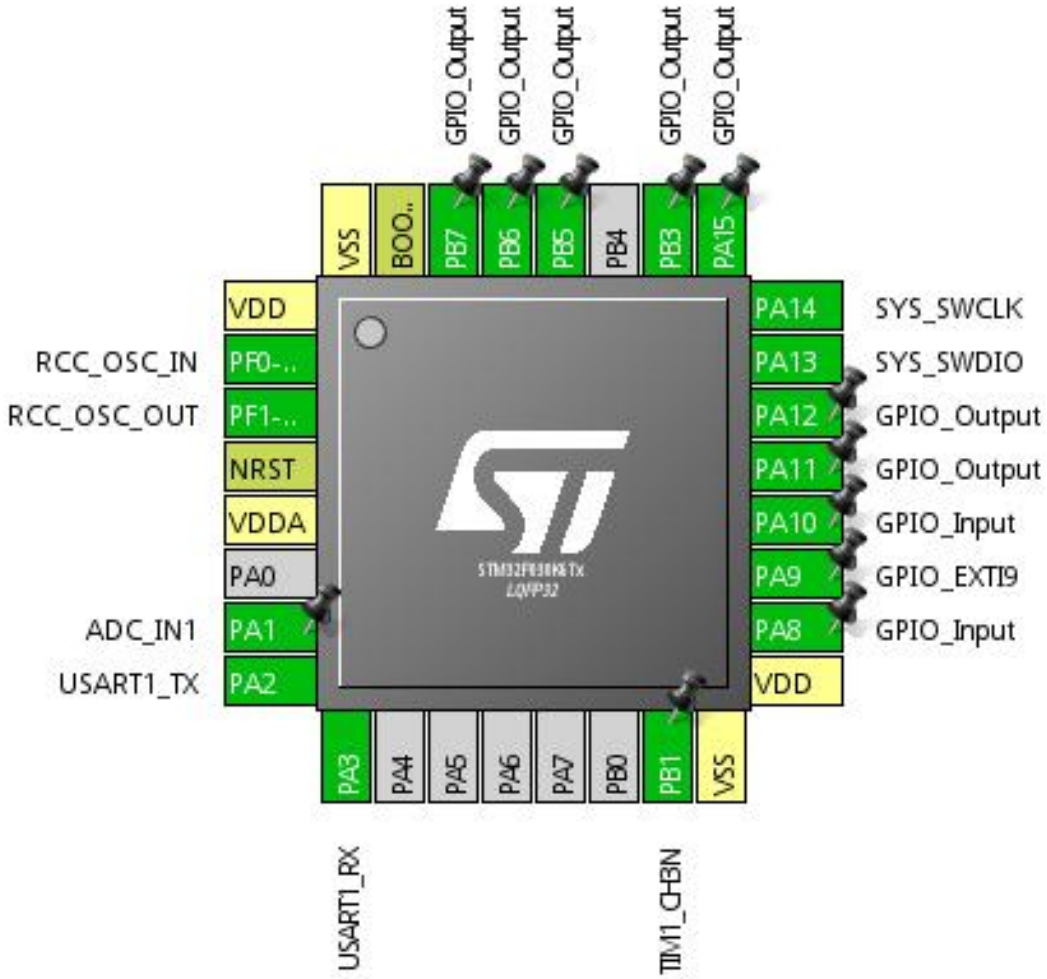
1.1. Project

Project Name	stm32f030k6
Board Name	stm32f030k6
Generated with:	STM32CubeMX 4.23.0
Date	04/08/2018

1.2. MCU

MCU Series	STM32F0
MCU Line	STM32F0x0 Value Line
MCU name	STM32F030K6Tx
MCU Package	LQFP32
MCU Pin number	32

2. Pinout Configuration

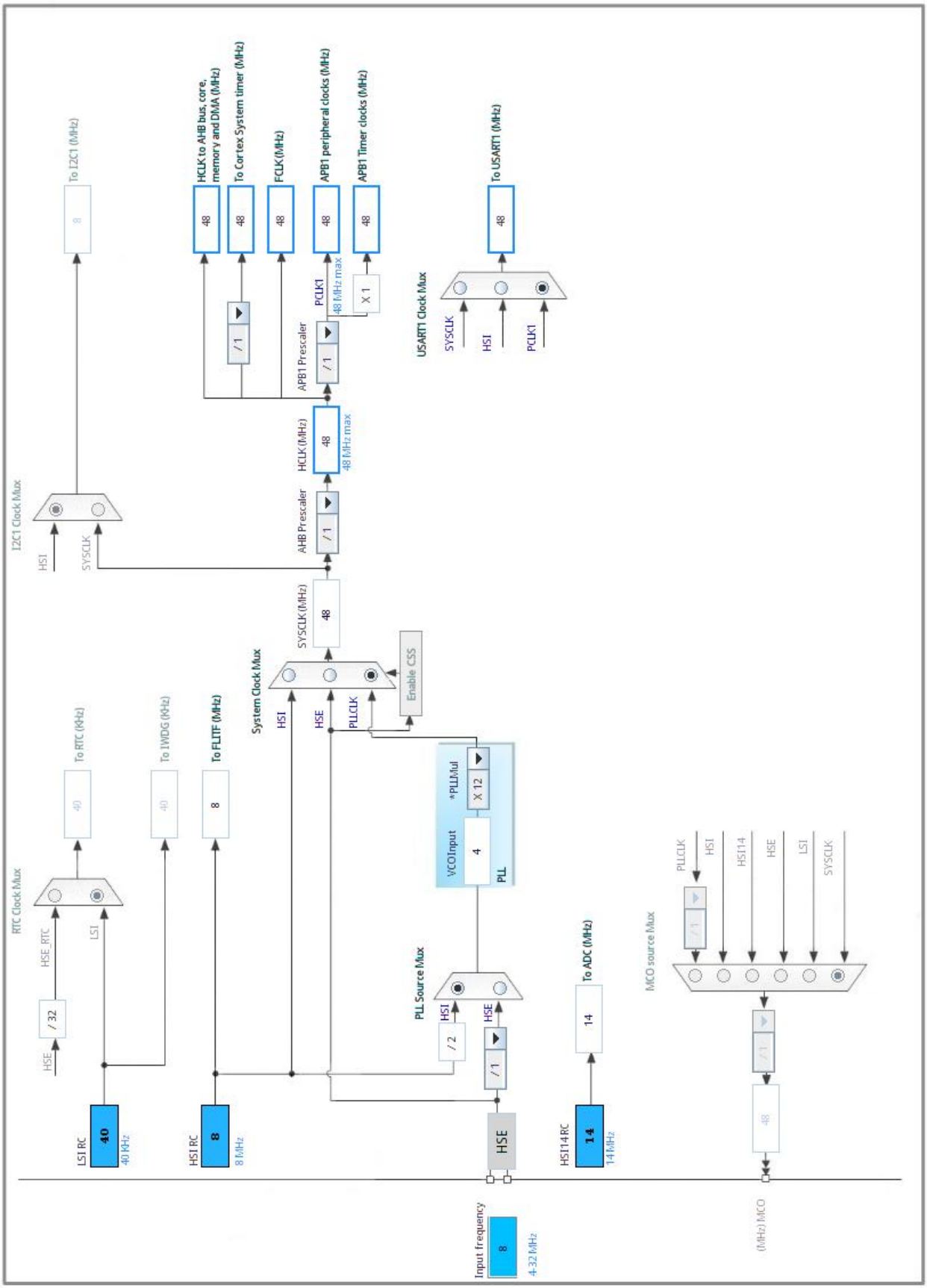


3. Pins Configuration

Pin Number LQFP32	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VDD	Power		
2	PF0-OSC_IN	I/O	RCC_OSC_IN	
3	PF1-OSC_OUT	I/O	RCC_OSC_OUT	
4	NRST	Reset		
5	VDDA	Power		
7	PA1	I/O	ADC_IN1	
8	PA2	I/O	USART1_TX	
9	PA3	I/O	USART1_RX	
15	PB1	I/O	TIM1_CH3N	
16	VSS	Power		
17	VDD	Power		
18	PA8 *	I/O	GPIO_Input	
19	PA9	I/O	GPIO_EXTI9	
20	PA10 *	I/O	GPIO_Input	
21	PA11 *	I/O	GPIO_Output	
22	PA12 *	I/O	GPIO_Output	
23	PA13	I/O	SYS_SWDIO	
24	PA14	I/O	SYS_SWCLK	
25	PA15 *	I/O	GPIO_Output	
26	PB3 *	I/O	GPIO_Output	
28	PB5 *	I/O	GPIO_Output	
29	PB6 *	I/O	GPIO_Output	
30	PB7 *	I/O	GPIO_Output	
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. ADC

mode: IN1

5.1.1. Parameter Settings:

ADC_Settings:

Clock Prescaler	Asynchronous clock mode
Resolution	ADC 12-bit resolution
Data Alignment	Right alignment
Scan Conversion Mode	Forward
Continuous Conversion Mode	Disabled
Discontinuous Conversion Mode	Disabled
DMA Continuous Requests	Disabled
End Of Conversion Selection	End of single conversion
Overrun behaviour	Overrun data preserved
Low Power Auto Wait	Disabled
Low Power Auto Power Off	Disabled

ADC_Regular_ConversionMode:

Sampling Time	**239.5 Cycles ***
External Trigger Conversion Source	Regular Conversion launched by software
External Trigger Conversion Edge	None

WatchDog:

Enable Analog WatchDog Mode	false

5.2. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

5.2.1. Parameter Settings:

System Parameters:

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

RCC Parameters:

HSI Calibration Value	16
HSI14 Calibration Value	16
HSE Startup Timout Value (ms)	100
LSE Startup Timout Value (ms)	5000

5.3. SYS

mode: Debug Serial Wire

Timebase Source: SysTick

5.4. TIM1

Channel3: PWM Generation CH3N

5.4.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**4799 ***
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	0
Internal Clock Division (CKD)	No Division
Repetition Counter (RCR - 8 bits value)	0
auto-reload preload	Disable

Trigger Output (TRGO) Parameters:

Master/Slave Mode	Disable (no sync between this TIM (Master) and its Slaves
Trigger Event Selection	Reset (UG bit from TIMx_EGR)

Break And Dead Time management - BRK Configuration:

BRK State	Disable
BRK Polarity	High

Break And Dead Time management - Output Configuration:

Automatic Output State	Disable
Off State Selection for Run Mode (OSSR)	Disable
Off State Selection for Idle Mode (OSSI)	Disable
Lock Configuration	Off

PWM Generation Channel 3N:

Mode	PWM mode 1
Pulse (16 bits value)	0
Fast Mode	Disable
CHN Polarity	High
CHN Idle State	Reset

5.5. USART1

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
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
ADC	PA1	ADC_IN1	Analog mode	No pull-up and no pull-down	n/a	
RCC	PF0-OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	
	PF1-OSC_OUT	RCC_OSC_OUT	n/a	n/a	n/a	
SYS	PA13	SYS_SWDIO	n/a	n/a	n/a	
	PA14	SYS_SWCLK	n/a	n/a	n/a	
TIM1	PB1	TIM1_CH3N	Alternate Function Push Pull	No pull-up and no pull-down	**High ***	
USART1	PA2	USART1_TX	Alternate Function Push Pull	Pull-up	**High ***	
	PA3	USART1_RX	Alternate Function Push Pull	Pull-up	**High ***	
GPIO	PA8	GPIO_Input	Input mode	**Pull-up ***	n/a	
	PA9	GPIO_EXTI9	**External Interrupt Mode with Falling edge trigger detection**	No pull-up and no pull-down	n/a	
	PA10	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	
	PA11	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**High ***	
	PA12	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**High ***	
	PA15	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**High ***	
	PB3	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**High ***	
	PB5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**High ***	
	PB6	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**High ***	
	PB7	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**High ***	

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	0	0
System tick timer	true	0	0
USART1 global interrupt	true	1	0
Flash global interrupt	unused		
RCC global interrupt	unused		
EXTI line 4 to 15 interrupts	unused		
ADC interrupt	unused		
TIM1 break, update, trigger and commutation interrupts	unused		
TIM1 capture compare interrupt	unused		

*** User modified value**

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32F0
Line	STM32F0x0 Value Line
MCU	STM32F030K6Tx
Datasheet	024849_Rev2

7.2. Parameter Selection

Temperature	25
Vdd	3.6

8. Software Project

8.1. Project Settings

Name	Value
Project Name	stm32f030k6
Project Folder	/home/xiao/STM32/switch/stm32f030k6
Toolchain / IDE	Makefile
Firmware Package Name and Version	STM32Cube FW_F0 V1.9.0

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	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