1. Description

1.1. Project

Project Name	stmcubemx-stm32f072-disco-sw2811
Board Name	STM32F072B-DISCO
Generated with:	STM32CubeMX 4.19.0
Date	06/29/2018

1.2. MCU

MCU Series	STM32F0
MCU Line	STM32F0x2
MCU name	STM32F072RBTx
MCU Package	LQFP64
MCU Pin number	64

# 2. Pinout Configuration
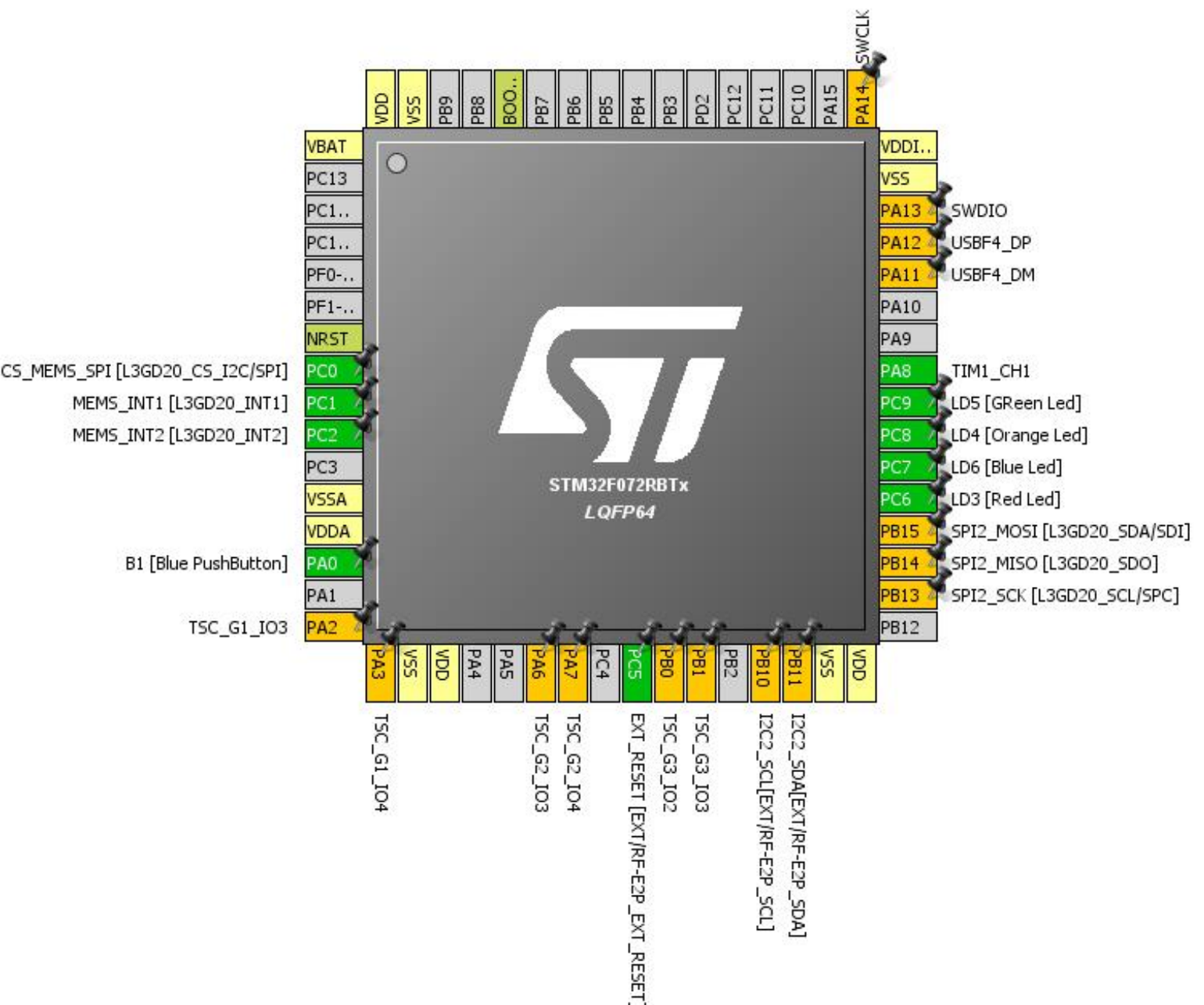
3. Pins Configuration

Pin Number LQFP64	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VBAT	Power		
7	NRST	Reset		
8	PC0 *	I/O	GPIO_Output	NCS_MEMS_SPI [L3GD20_CS_I2C/SPI]
9	PC1	I/O	GPIO_EXTI1	MEMS_INT1 [L3GD20_INT1]
10	PC2	I/O	GPIO_EXTI2	MEMS_INT2 [L3GD20_INT2]
12	VSSA	Power		
13	VDDA	Power		
14	PA0	I/O	GPIO_EXTI0	B1 [Blue PushButton]
16	PA2 **	I/O	TSC_G1_IO3	
17	PA3 **	I/O	TSC_G1_IO4	
18	VSS	Power		
19	VDD	Power		
22	PA6 **	I/O	TSC_G2_IO3	
23	PA7 **	I/O	TSC_G2_IO4	
25	PC5 *	I/O	GPIO_Output	EXT_RESET [EXT/RF-E2P_EXT_RESET]
26	PB0 **	I/O	TSC_G3_IO2	
27	PB1 **	I/O	TSC_G3_IO3	
29	PB10 **	I/O	I2C2_SCL	I2C2_SCL[EXT/RF-E2P_SCL]
30	PB11 **	I/O	I2C2_SDA	I2C2_SDA[EXT/RF-E2P_SDA]
31	VSS	Power		
32	VDD	Power		
34	PB13 **	I/O	SPI2_SCK	SPI2_SCK [L3GD20_SCL/SPC]
35	PB14 **	I/O	SPI2_MISO	SPI2_MISO [L3GD20_SDO]
36	PB15 **	I/O	SPI2_MOSI	SPI2_MOSI [L3GD20_SDA/SDI]
37	PC6 *	I/O	GPIO_Output	LD3 [Red Led]
38	PC7 *	I/O	GPIO_Output	LD6 [Blue Led]
39	PC8 *	I/O	GPIO_Output	LD4 [Orange Led]
40	PC9 *	I/O	GPIO_Output	LD5 [GReen Led]
41	PA8	I/O	TIM1_CH1	

Pin Number LQFP64	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
44	PA11 **	I/O	USB_DM	USBF4_DM
45	PA12 **	I/O	USB_DP	USBF4_DP
46	PA13 **	I/O	SYS_SWDIO	SWDIO
47	VSS	Power		
48	VDDIO2	Power		
49	PA14 **	I/O	SYS_SWCLK	SWCLK
60	BOOT0	Boot		
63	VSS	Power		
64	VDD	Power		

 * The pin is affected with an I/O function

** The pin is affected with a peripheral function but no peripheral mode is activated

4. Clock Tree Configuration
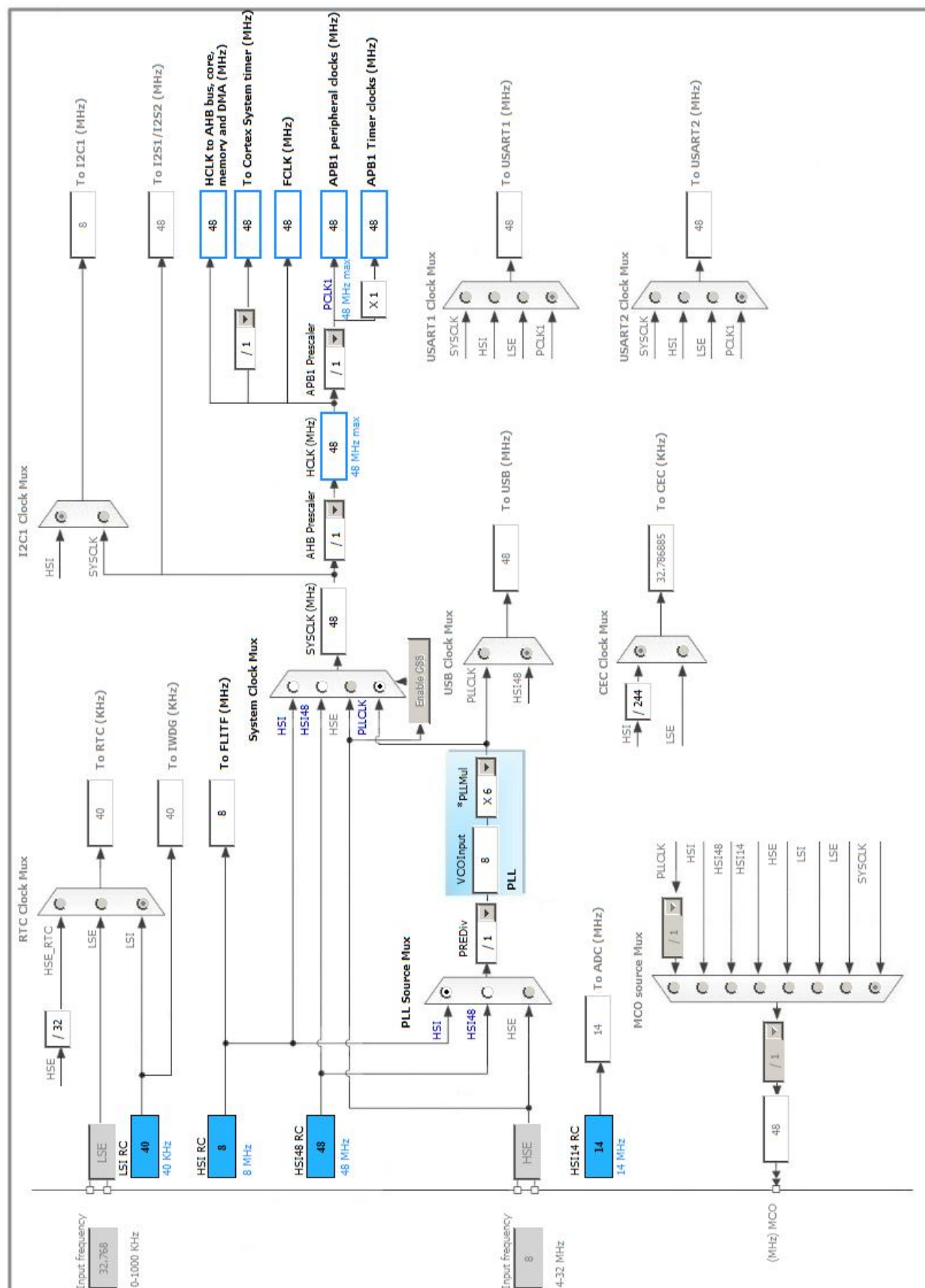
5. IPs and Middleware Configuration

5.1. SYS
Timebase Source: SysTick

5.2. TIM1
Clock Source   : Internal Clock
Channel1: PWM Generation CH1

5.2.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	0
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 1:

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

* User modified value

6. System Configuration

6.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
TIM1	PA8	TIM1_CH1	Alternate Function Push Pull	No pull-up and no pull-down	**High ***	
Single Mapped Signals	PA2	TSC_G1_IO3	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PA3	TSC_G1_IO4	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PA6	TSC_G2_IO3	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PA7	TSC_G2_IO4	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PB0	TSC_G3_IO2	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PB1	TSC_G3_IO3	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PB10	I2C2_SCL	Alternate Function Open Drain	Pull-up	**High ***	I2C2_SCL[EXT/RF-E2P_SCL]
	PB11	I2C2_SDA	Alternate Function Open Drain	Pull-up	**High ***	I2C2_SDA[EXT/RF-E2P_SDA]
	PB13	SPI2_SCK	Alternate Function Push Pull	No pull-up and no pull-down	**High ***	SPI2_SCK [L3GD20_SCL/SPC]
	PB14	SPI2_MISO	Alternate Function Push Pull	No pull-up and no pull-down	**High ***	SPI2_MISO [L3GD20_SDO]
	PB15	SPI2_MOSI	Alternate Function Push Pull	No pull-up and no pull-down	**High ***	SPI2_MOSI [L3GD20_SDA/SDI]
	PA11	USB_DM	n/a	n/a	**n/a**	USBF4_DM
	PA12	USB_DP	n/a	n/a	**n/a**	USBF4_DP
	PA13	SYS_SWDIO	n/a	n/a	**n/a**	SWDIO
	PA14	SYS_SWCLK	n/a	n/a	**n/a**	SWCLK
GPIO	PC0	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	NCS_MEMS_SPI [L3GD20_CS_I2C/SPI]
	PC1	GPIO_EXTI1	**External Event Mode with Rising edge trigger detection ***	No pull-up and no pull-down	n/a	MEMS_INT1 [L3GD20_INT1]
	PC2	GPIO_EXTI2	**External Event Mode with Rising edge trigger detection ***	No pull-up and no pull-down	n/a	MEMS_INT2 [L3GD20_INT2]
	PA0	GPIO_EXTI0	**External Event Mode with Rising edge trigger detection ***	No pull-up and no pull-down	n/a	B1 [Blue PushButton]
	PC5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	EXT_RESET [EXT/RF-E2P_EXT_RESET]

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
	PC6	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LD3 [Red Led]
	PC7	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LD6 [Blue Led]
	PC8	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LD4 [Orange Led]
	PC9	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LD5 [GReen Led]

6.2. DMA configuration

DMA request	Stream	Direction	Priority
TIM1_CH1	DMA1_Channel2	Memory To Peripheral	**High ***

TIM1_CH1: DMA1_Channel2 DMA request Settings:

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

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
DMA1 channel 2 and 3 interrupts	true	0	0
PVD and VDDIO2 supply comparator interrupts through EXTI lines 16 and 31	unused		
Flash global interrupt	unused		
RCC and CRS global interrupts	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	STM32F0x2
MCU	STM32F072RBTx
Datasheet	025004_Rev4

7.2. Parameter Selection

Temperature	25
Vdd	3.6

8. Software Project

8.1. Project Settings

Name	Value
Project Name	stmcubemx-stm32f072-disco-sw2811
Project Folder	E:\Tan\STM32\Codes\stmcubemx-stm32f072-disco-sw2811
Toolchain / IDE	MDK-ARM V5
Firmware Package Name and Version	STM32Cube FW_F0 V1.7.0

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	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