1. Description

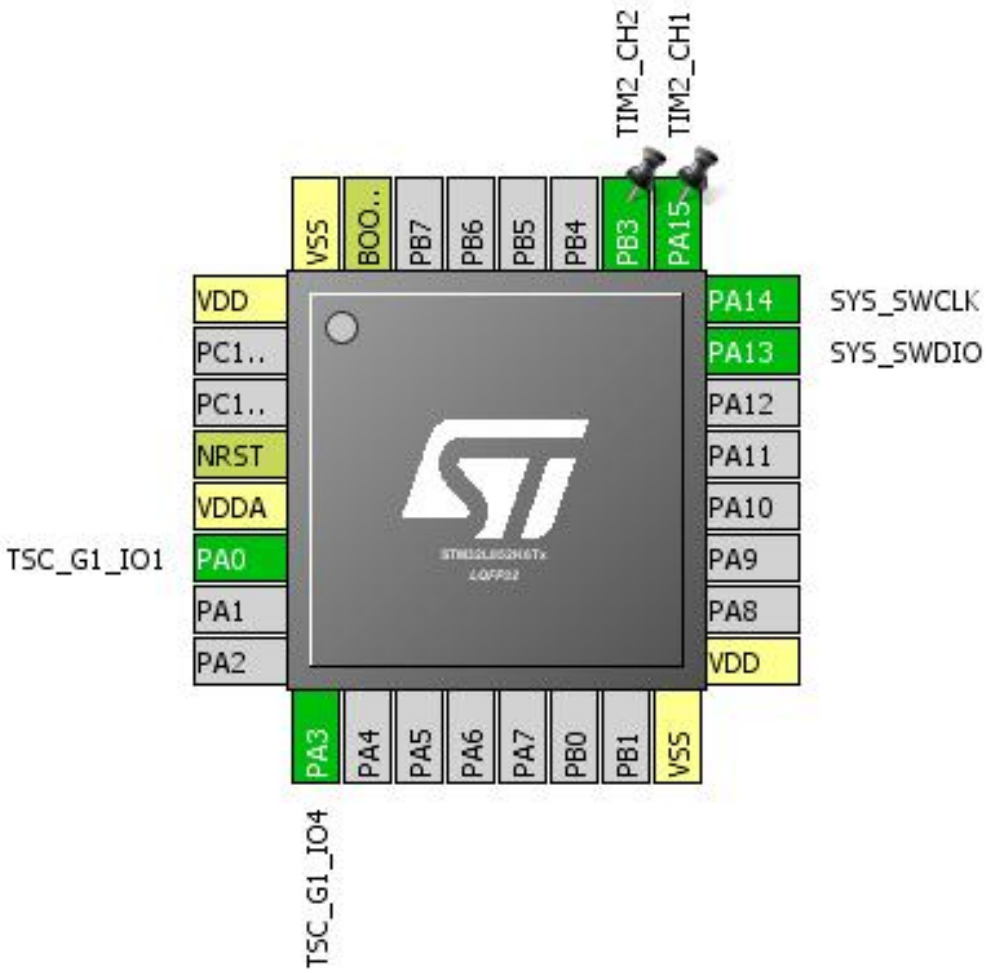
1.1. Project

Project Name	asd
Board Name	custom
Generated with:	STM32CubeMX 4.26.0
Date	08/26/2018

1.2. MCU

MCU Series	STM32L0
MCU Line	STM32L0x2
MCU name	STM32L052K6Tx
MCU Package	LQFP32
MCU Pin number	32

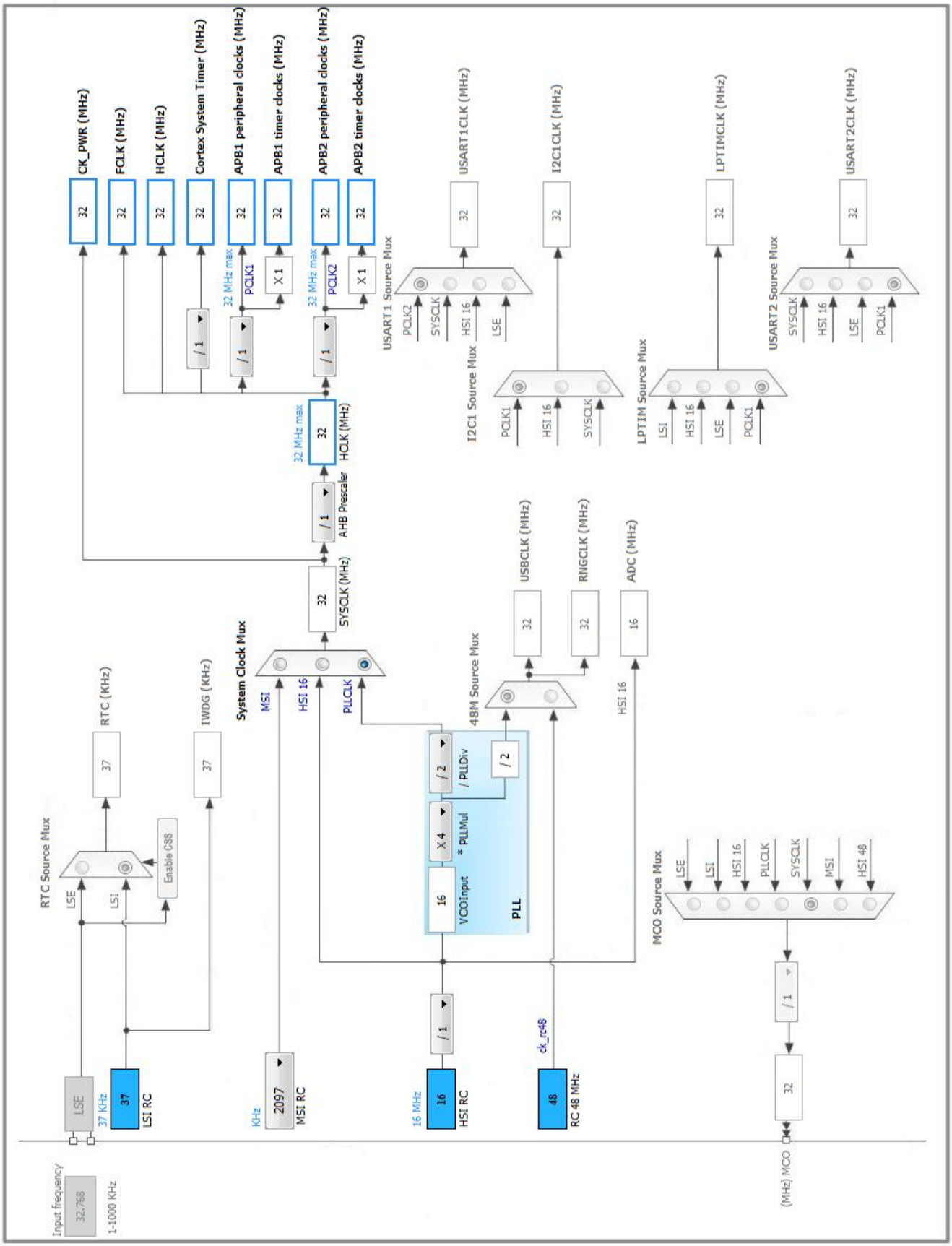
2. Pinout Configuration



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		
6	PA0	I/O	TSC_G1_IO1	
9	PA3	I/O	TSC_G1_IO4	
16	VSS	Power		
17	VDD	Power		
23	PA13	I/O	SYS_SWDIO	
24	PA14	I/O	SYS_SWCLK	
25	PA15	I/O	TIM2_CH1	
26	PB3	I/O	TIM2_CH2	
31	BOOT0	Boot		
32	VSS	Power		

4. Clock Tree Configuration



5. IPs and Middleware Configuration

5.1. SYS

mode: Debug Serial Wire

Timebase Source: SysTick

5.2. TIM2

Clock Source : Internal Clock

Channel1: PWM Generation CH1

Channel2: PWM Generation CH2

5.2.1. Parameter Settings:

Counter Settings:	
Prescaler (PSC - 16 bits value)	0
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**31999 ***
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)
PWM Generation Channel 1:	
Mode	PWM mode 1
Pulse (16 bits value)	**10000 ***
Fast Mode	**Enable ***
CH Polarity	High
PWM Generation Channel 2:	
Mode	PWM mode 1
Pulse (16 bits value)	**5000 ***
Fast Mode	**Enable ***
CH Polarity	High

5.3. TSC

Sampling: G1_IO4

mode: G1_IO1

5.3.1. Parameter Settings:

TSC Settings:

Charge Transfer High Pulse Length	2 Cycles
Charge Transfer Low Pulse Length	2 Cycles
Spread Spectrum	Disable
Pulse Generator Prescaler	Synchronous clock mode divided by 4
Maximum Count Value	8191 charge transfer cycles
IO Default Mode	Output push-pull low
Acquisition Mode	Normal acquisition mode
Maximum Count Interrupt	Disable

5.4. TOUCHSENSING

mode: Enabled

5.4.1. Sensors selection:

Summary:

TSLPRM_TOTAL_OBJECTS	1
TSC_ACTIVE_CHANNELS = max(TSLPRM_TOTAL_CHANNELS)	1
TSLPRM_TOTAL_CHANNELS	1

Linear/Rotary sensors used:

TSLPRM_TOTAL_LINROTS	0
TSLPRM_TOTAL_LINROTS_B	0
TSLPRM_USE_3CH_LIN_M1	Not Used
TSLPRM_USE_3CH_LIN_M2	Not Used
TSLPRM_USE_3CH_LIN_H	Not Used
TSLPRM_USE_3CH_ROT_M	Not Used
TSLPRM_USE_4CH_LIN_M1	Not Used
TSLPRM_USE_4CH_LIN_M2	Not Used
TSLPRM_USE_4CH_LIN_H	Not Used
TSLPRM_USE_4CH_ROT_M	Not Used
TSLPRM_USE_5CH_LIN_M1	Not Used
TSLPRM_USE_5CH_LIN_M2	Not Used
TSLPRM_USE_5CH_LIN_H	Not Used
TSLPRM_USE_5CH_ROT_M	Not Used
TSLPRM_USE_5CH_ROT_D	Not Used
TSLPRM_USE_6CH_LIN_M1	Not Used
TSLPRM_USE_6CH_LIN_M2	Not Used
TSLPRM_USE_6CH_LIN_H	Not Used
TSLPRM_USE_6CH_ROT_M	Not Used

TouchKey sensors:

TSLPRM_TOTAL_TOUCHKEYS	**1 ***
IO_TOUCHKEY1	G1_IO1
TSLPRM_TOTAL_TOUCHKEYS_B	0

5.4.2. Config parameters:

Version and modes:

TouchSensing version	2.2.0

Optional features:

TSLPRM_USE_MEAS	1
TSLPRM_USE_PROX	1
TSLPRM_USE_ZONE	0

Acquisition limits:

TSLPRM_ACQ_MIN	10
TSLPRM_ACQ_MAX	TSC_MCV_8191

Calibration:

TSLPRM_CALIB_SAMPLES	4
TSLPRM_CALIB_DELAY	0

Thresholds for TouchKey sensors:

TSLPRM_TKEY_PROX_IN_TH	10
TSLPRM_TKEY_PROX_OUT_TH	5
TSLPRM_TKEY_DETECT_IN_TH	120
TSLPRM_TKEY_DETECT_OUT_TH	110
TSLPRM_TKEY_CALIB_TH	120
TSLPRM_COEFF_TH	0

Thresholds for Linear and Rotary sensors:

TSLPRM_LINROT_PROX_IN_TH	10
TSLPRM_LINROT_PROX_OUT_TH	5
TSLPRM_LINROT_DETECT_IN_TH	80
TSLPRM_LINROT_DETECT_OUT_TH	75
TSLPRM_LINROT_CALIB_TH	80
TSLPRM_LINROT_USE_NORMDELTA	0

Linear/Rotary sensors position:

TSLPRM_LINROT_RESOLUTION	4
TSLPRM_LINROT_DIR_CHG_POS	10
TSLPRM_LINROT_DIR_CHG_DEB	1

Debounce counters:

TSLPRM_DEBOUNCE_PROX	2
TSLPRM_DEBOUNCE_DETECT	2
TSLPRM_DEBOUNCE_RELEASE	2
TSLPRM_DEBOUNCE_CALIB	3

TSLPRM_DEBOUNCE_ERROR	3

Environment Change System (ECS):

TSLPRM_ECS_K_SLOW	10
TSLPRM_ECS_K_FAST	20
TSLPRM_ECS_DELAY	500

Detection Time Out (DTO):

TSLPRM_DTO	0

Detection Exclusion System (DXS):

TSLPRM_USE_DXS	0

Miscellaneous parameters:

TSLPRM_TICK_FREQ	1000
TSLPRM_DELAY_DISCHARGE_ALL	1000
TSLPRM_IODEF	TSC_IODEF_OUT_PP_LOW

*** User modified value**

6. System Configuration

6.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
SYS	PA13	SYS_SWDIO	n/a	n/a	n/a	
	PA14	SYS_SWCLK	n/a	n/a	n/a	
TIM2	PA15	TIM2_CH1	Alternate Function Push Pull	**Pull-up ***	**Medium ***	
	PB3	TIM2_CH2	Alternate Function Push Pull	**Pull-up ***	**Medium ***	
TSC	PA0	TSC_G1_IO1	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PA3	TSC_G1_IO4	Alternate Function Open Drain	No pull-up and no pull-down	Low	

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
Touch sense controller interrupt	true	0	0
PVD interrupt through EXTI line 16	unused		
Flash and EEPROM global interrupt	unused		
RCC and CRS global interrupt	unused		
TIM2 global interrupt	unused		

*** User modified value**

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32L0
Line	STM32L0x2
MCU	STM32L052K6Tx
Datasheet	025936_Rev7

7.2. Parameter Selection

Temperature	25
Vdd	3.0

7.3. Battery Selection

Battery	Alkaline(AA LR6)
Capacity	2850.0 mAh
Self Discharge	0.3 %/month
Nominal Voltage	1.5 V
Max Cont Current	1000.0 mA
Max Pulse Current	0.0 mA
Cells in series	1
Cells in parallel	1

8. Software Project

8.1. Project Settings

Name	Value
Project Name	asd
Project Folder	C:\Users\Christian\Desktop\asd
Toolchain / IDE	TrueSTUDIO
Firmware Package Name and Version	STM32Cube FW_L0 V1.10.0

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

9. Software Pack Report