1. Description

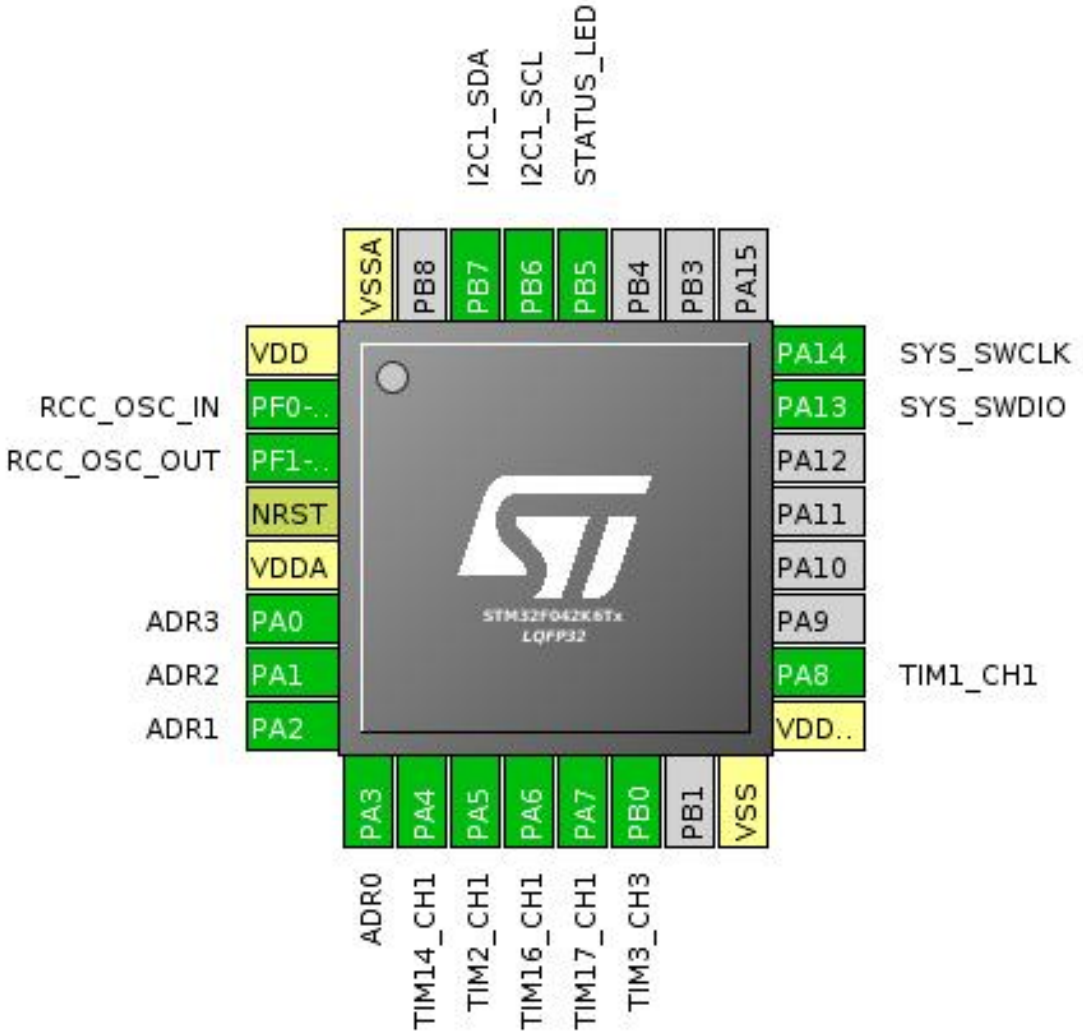
1.1. Project

Project Name	DQ6od
Board Name	DQ6oc
Generated with:	STM32CubeMX 4.26.0
Date	07/19/2018

1.2. MCU

MCU Series	STM32F0
MCU Line	STM32F0x2
MCU name	STM32F042K6Tx
MCU Package	LQFP32
MCU Pin number	32

2. Pinout Configuration

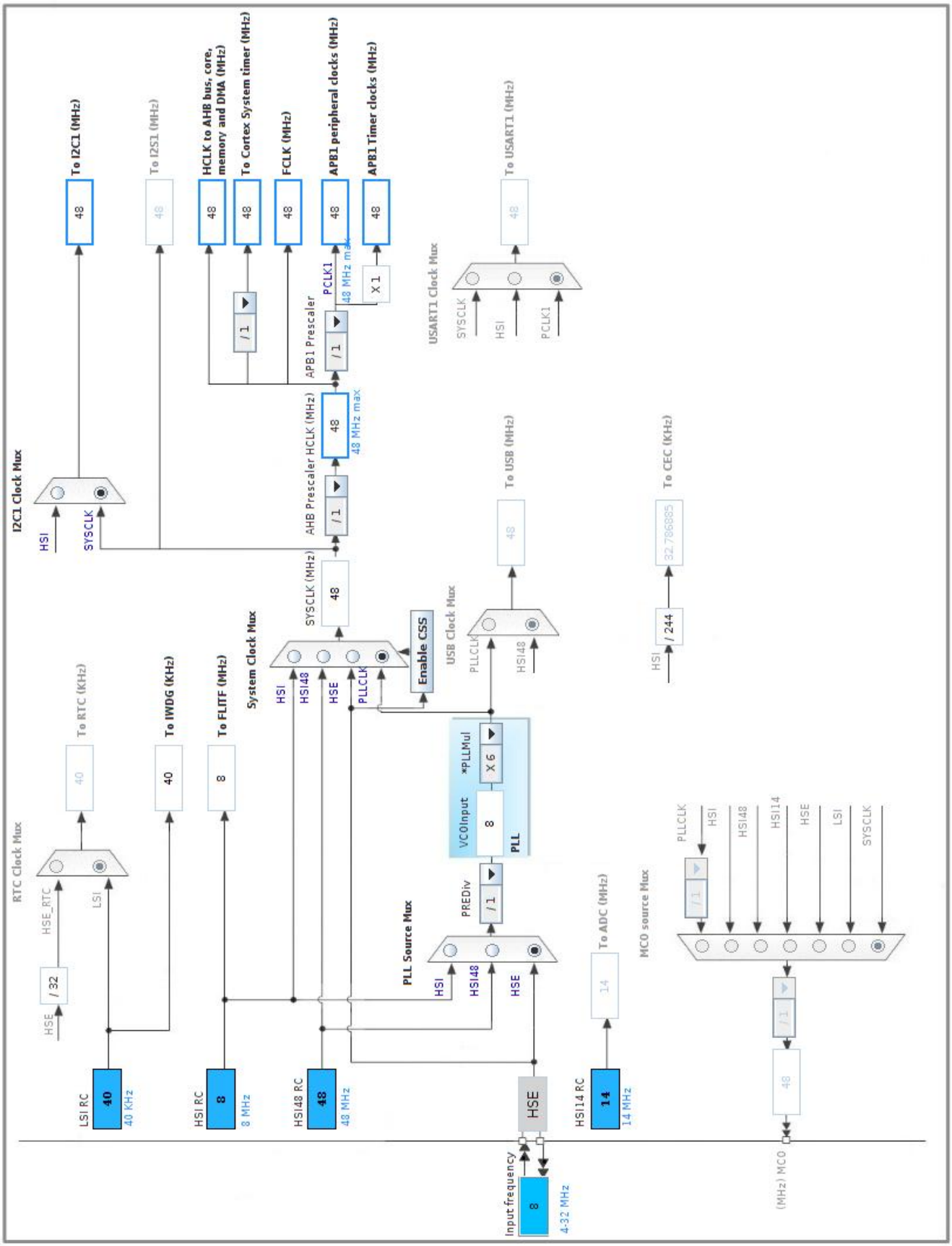


3. Pins Configuration

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		
6	PA0 *	I/O	GPIO_Input	ADR3
7	PA1 *	I/O	GPIO_Input	ADR2
8	PA2 *	I/O	GPIO_Input	ADR1
9	PA3 *	I/O	GPIO_Input	ADR0
10	PA4	I/O	TIM14_CH1	
11	PA5	I/O	TIM2_CH1	
12	PA6	I/O	TIM16_CH1	
13	PA7	I/O	TIM17_CH1	
14	PB0	I/O	TIM3_CH3	
16	VSS	Power		
17	VDDIO2	Power		
18	PA8	I/O	TIM1_CH1	
23	PA13	I/O	SYS_SWDIO	
24	PA14	I/O	SYS_SWCLK	
28	PB5 *	I/O	GPIO_Output	STATUS_LED
29	PB6	I/O	I2C1_SCL	
30	PB7	I/O	I2C1_SDA	
32	VSSA	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	Standard Mode
I2C Speed Frequency (KHz)	100
Rise Time (ns)	0
Fall Time (ns)	0
Coefficient of Digital Filter	0
Analog Filter	Enabled
Timing	**0x20303E5D ***

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. IWDG

mode: Activated

5.2.1. Parameter Settings:

Watchdog Clocking:

IWDG counter clock prescaler	4
IWDG window value	4095
IWDG down-counter reload value	4095

5.3. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

5.3.1. Parameter Settings:

System Parameters:

VDD voltage (V)	3.3

Prefetch Buffer	Enabled
Flash Latency(WS)	1 WS (2 CPU cycle)

RCC Parameters:

HSE Startup Timout Value (ms)	100
LSE Startup Timout Value (ms)	5000

5.4. SYS

mode: Debug Serial Wire

Timebase Source: SysTick

5.5. TIM1

Channel1: PWM Generation CH1

5.5.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**47 ***
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**100 ***
Internal Clock Division (CKD)	No Division
Repetition Counter (RCR - 8 bits value)	0
auto-reload preload	Disable

Trigger Output (TRGO) Parameters:

Master/Slave Mode (MSM bit)	Disable (Trigger input effect not delayed)
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

5.6. TIM2

Channel1: PWM Generation CH1

5.6.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**47 ***
Counter Mode	Up
Counter Period (AutoReload Register - 32 bits value)	**100 ***
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	Reset (UG bit from TIMx_EGR)

PWM Generation Channel 1:

Mode	PWM mode 1
Pulse (32 bits value)	**10 ***
Fast Mode	Disable
CH Polarity	High

5.7. TIM3

Channel3: PWM Generation CH3

5.7.1. 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
auto-reload preload	Disable

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 3:

Mode	PWM mode 1
Pulse (16 bits value)	0

Fast Mode	Disable
CH Polarity	High

5.8. TIM14

mode: Activated

Channel1: PWM Generation CH1

5.8.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**47 ***
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**100 ***
Internal Clock Division (CKD)	No Division
auto-reload preload	Disable

PWM Generation Channel 1:

Mode	PWM mode 1
Pulse (16 bits value)	**50 ***
Fast Mode	Disable
CH Polarity	High

5.9. TIM16

mode: Activated

Channel1: PWM Generation CH1

5.9.1. 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

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

5.10. TIM17

mode: Activated

Channel1: PWM Generation CH1

5.10.1. 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

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
I2C1	PB6	I2C1_SCL	Alternate Function Open Drain	**No pull-up and no pull-down ***	**High ***	
	PB7	I2C1_SDA	Alternate Function Open Drain	**No pull-up and no pull-down ***	**High ***	
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	PA8	TIM1_CH1	Alternate Function Push Pull	No pull-up and no pull-down	Low	
TIM2	PA5	TIM2_CH1	Alternate Function Push Pull	No pull-up and no pull-down	Low	
TIM3	PB0	TIM3_CH3	Alternate Function Push Pull	No pull-up and no pull-down	Low	
TIM14	PA4	TIM14_CH1	Alternate Function Push Pull	No pull-up and no pull-down	Low	
TIM16	PA6	TIM16_CH1	Alternate Function Push Pull	No pull-up and no pull-down	Low	
TIM17	PA7	TIM17_CH1	Alternate Function Push Pull	No pull-up and no pull-down	Low	
GPIO	PA0	GPIO_Input	Input mode	**Pull-up ***	n/a	ADR3
	PA1	GPIO_Input	Input mode	**Pull-up ***	n/a	ADR2
	PA2	GPIO_Input	Input mode	**Pull-up ***	n/a	ADR1
	PA3	GPIO_Input	Input mode	**Pull-up ***	n/a	ADR0
	PB5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	STATUS_LED

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
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		
TIM2 global interrupt	unused		
TIM3 global interrupt	unused		
TIM14 global interrupt	unused		
TIM16 global interrupt	unused		
TIM17 global interrupt	unused		
I2C1 event global interrupt / I2C1 wake-up interrupt through EXTI line 23	unused		

*** User modified value**

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32F0
Line	STM32F0x2
MCU	STM32F042K6Tx
Datasheet	025832_Rev5

7.2. Parameter Selection

Temperature	25
Vdd	3.6

8. Software Pack Report

9. Software Project

9.1. Project Settings

Name	Value
Project Name	DQ6od
Project Folder	/home/fcos/workspace/git_source/i2c-hat
Toolchain / IDE	TrueSTUDIO
Firmware Package Name and Version	STM32Cube FW_F0 V1.9.0

9.2. 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