1. Description

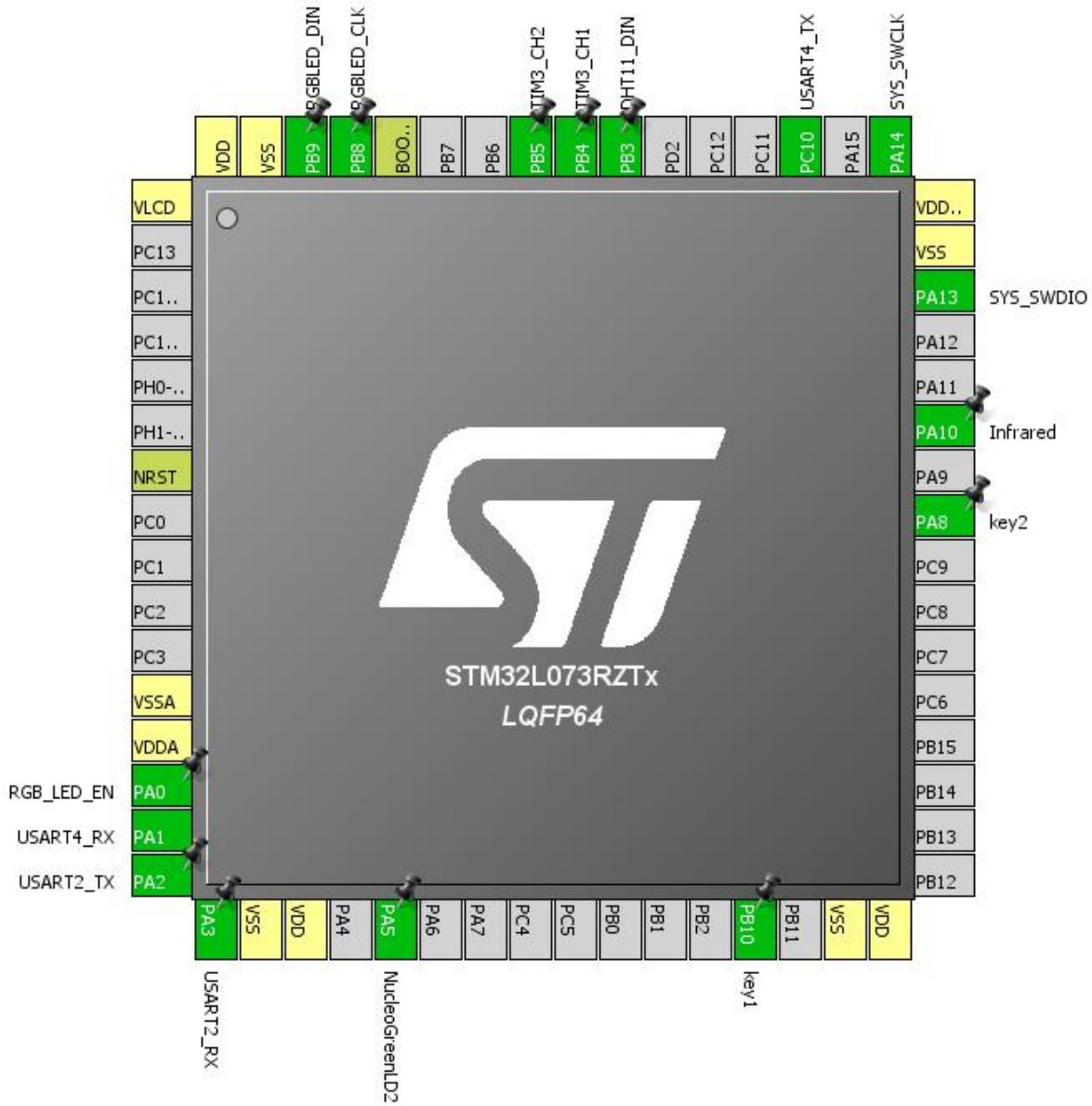
1.1. Project

Project Name	GokitShield_Nucleo64_STM32L073RZ
Board Name	GokitShield_Nucleo64_STM32L073RZ
Generated with:	STM32CubeMX 4.18.0
Date	12/27/2016

1.2. MCU

MCU Series	STM32L0
MCU Line	STM32L0x3
MCU name	STM32L073RZTx
MCU Package	LQFP64
MCU Pin number	64

2. Pinout Configuration

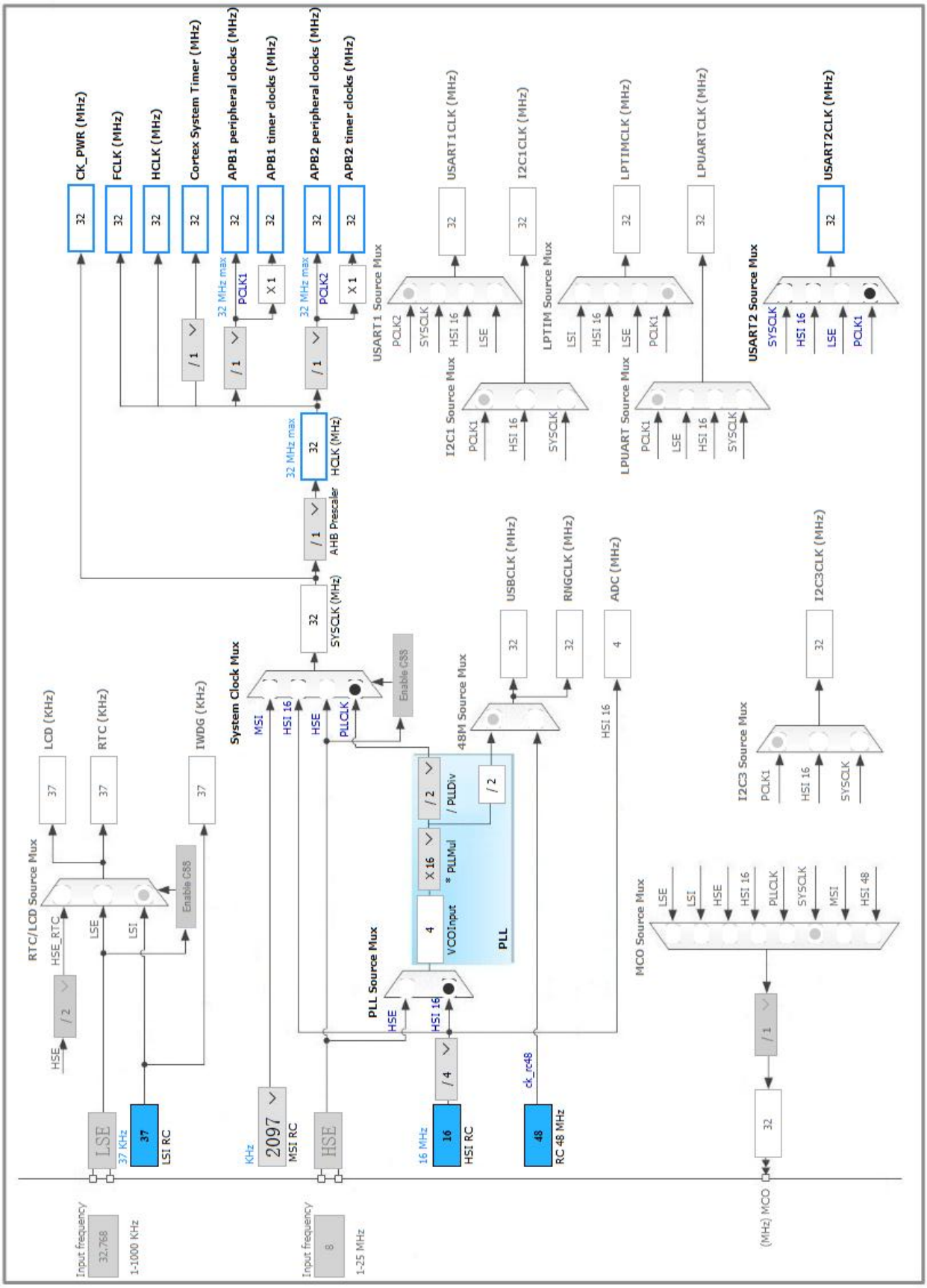


3. Pins Configuration

Pin Number LQFP64	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VLCD	Power		
7	NRST	Reset		
12	VSSA	Power		
13	VDDA	Power		
14	PA0 *	I/O	GPIO_Output	RGB_LED_EN
15	PA1	I/O	USART4_RX	
16	PA2	I/O	USART2_TX	
17	PA3	I/O	USART2_RX	
18	VSS	Power		
19	VDD	Power		
21	PA5 *	I/O	GPIO_Output	NucleoGreenLD2
29	PB10 *	I/O	GPIO_Input	key1
31	VSS	Power		
32	VDD	Power		
41	PA8 *	I/O	GPIO_Input	key2
43	PA10 *	I/O	GPIO_Input	Infrared
46	PA13	I/O	SYS_SWDIO	
47	VSS	Power		
48	VDD_USB	Power		
49	PA14	I/O	SYS_SWCLK	
51	PC10	I/O	USART4_TX	
55	PB3 *	I/O	GPIO_Output	DHT11_DIN
56	PB4	I/O	TIM3_CH1	
57	PB5	I/O	TIM3_CH2	
60	BOOT0	Boot		
61	PB8 *	I/O	GPIO_Output	RGBLED_CLK
62	PB9 *	I/O	GPIO_Output	RGBLED_DIN
63	VSS	Power		
64	VDD	Power		

* The pin is affected with an I/O function

4. Clock Tree Configuration



5. IPs and Middleware Configuration

5.1. SYS

mode: Debug Serial Wire

Timebase Source: SysTick

5.2. TIM3

Clock Source : Internal Clock

Channel1: PWM Generation CH1

Channel2: PWM Generation CH2

5.2.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**9 ***
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**3199 ***
Internal Clock Division (CKD)	No Division

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)

PWM Generation Channel 1:

Mode	PWM mode 1
Pulse (16 bits value)	0
Fast Mode	**Enable ***
CH Polarity	High

PWM Generation Channel 2:

Mode	PWM mode 1
Pulse (16 bits value)	**500 ***
Fast Mode	**Enable ***
CH Polarity	High

5.3. TIM6

mode: Activated

5.3.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**31 ***
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**999 ***

Trigger Output (TRGO) Parameters:

Trigger Event Selection	Reset (UG bit from TIMx_EGR)

5.4. TIM7

mode: Activated

5.4.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**31 ***
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**999 ***

Trigger Output (TRGO) Parameters:

Trigger Event Selection	Reset (UG bit from TIMx_EGR)

5.5. USART2

Mode: Asynchronous

5.5.1. Parameter Settings:

Basic Parameters:

Baud Rate	**9600 ***
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

5.6. USART4

Mode: Asynchronous

5.6.1. 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:

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
SYS	PA13	SYS_SWDIO	n/a	n/a	n/a	
	PA14	SYS_SWCLK	n/a	n/a	n/a	
TIM3	PB4	TIM3_CH1	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PB5	TIM3_CH2	Alternate Function Push Pull	No pull-up and no pull-down	Low	
USART2	PA2	USART2_TX	Alternate Function Push Pull	Pull-up	**Very High ***	
	PA3	USART2_RX	Alternate Function Push Pull	Pull-up	**Very High ***	
USART4	PA1	USART4_RX	Alternate Function Push Pull	Pull-up	**Very High ***	
	PC10	USART4_TX	Alternate Function Push Pull	Pull-up	**Very High ***	
GPIO	PA0	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**Very High ***	RGB_LED_EN
	PA5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**Very High ***	NucleoGreenLD2
	PB10	GPIO_Input	Input mode	**Pull-up ***	**n/a**	key1
	PA8	GPIO_Input	Input mode	**Pull-up ***	**n/a**	key2
	PA10	GPIO_Input	Input mode	No pull-up and no pull-down	**n/a**	Infrared
	PB3	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**Very High ***	DHT11_DIN
	PB8	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**Very High ***	RGBLED_CLK
	PB9	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**Very High ***	RGBLED_DIN

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	1	0
TIM6 global interrupt and DAC1/DAC2 underrun error interrupts	true	3	0
TIM7 global interrupt	true	3	0
USART2 global interrupt / USART2 wake-up interrupt through EXTI line 26	true	0	0
PVD interrupt through EXTI line 16	unused		
Flash and EEPROM global interrupt	unused		
RCC and CRS global interrupt	unused		
USART4 and USART5 interrupt	unused		
TIM3 global interrupt	unused		

*** User modified value**

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32L0
Line	STM32L0x3
MCU	STM32L073RZTx
Datasheet	027096_Rev2

7.2. Parameter Selection

Temperature	25
Vdd	3.0

8. Software Project

8.1. Project Settings

Name	Value
Project Name	GokitShield_Nucleo64_STM32L073RZ
Project Folder	C:\Users\DengQ\Desktop\CubeMXNucleo-L073
Toolchain / IDE	EWARM
Firmware Package Name and Version	STM32Cube FW_L0 V1.7.0

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