1. Description

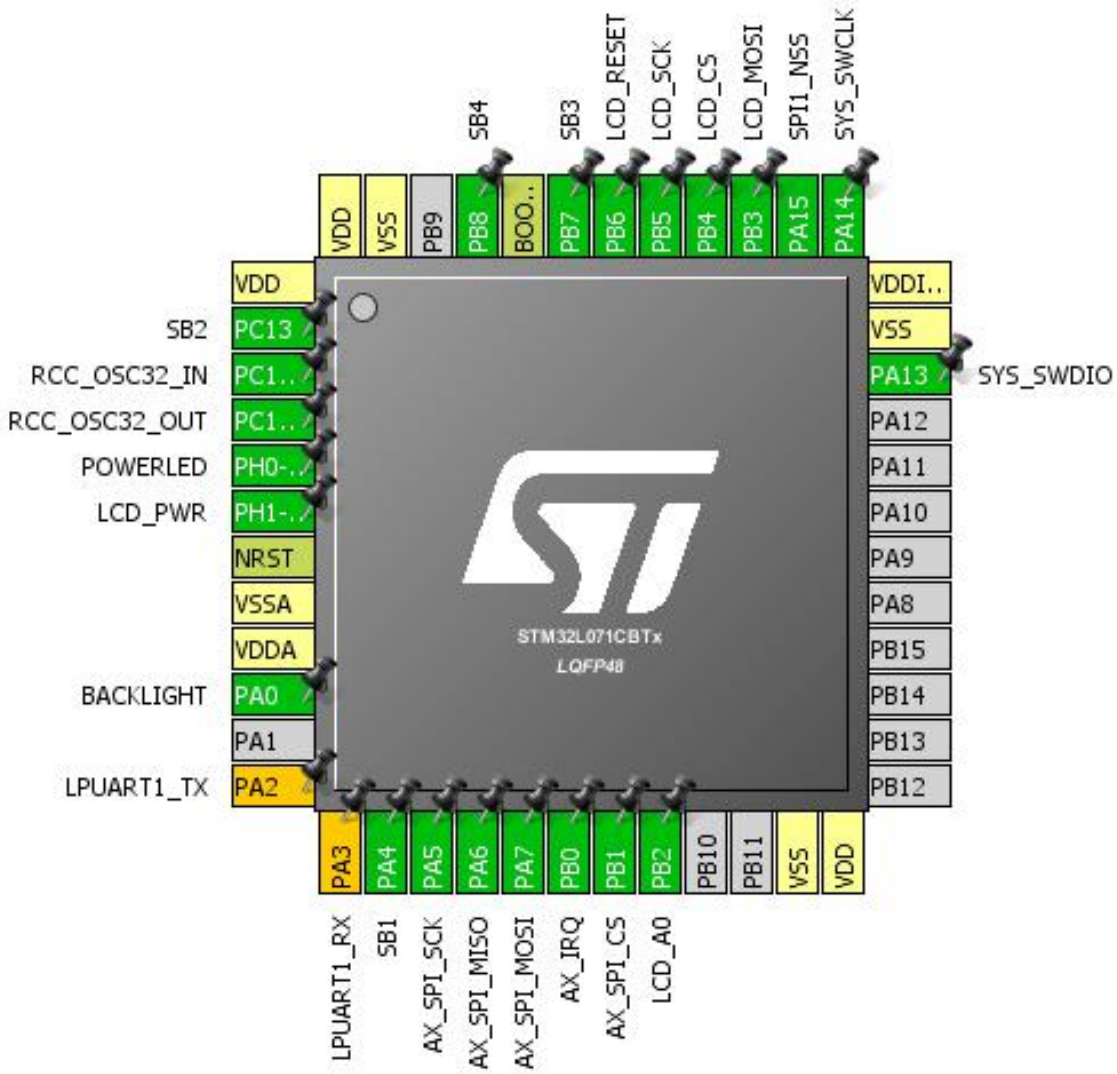
1.1. Project

Project Name	DevKit-STM32-AX5043
Board Name	custom
Generated with:	STM32CubeMX 4.27.0
Date	10/29/2018

1.2. MCU

MCU Series	STM32L0
MCU Line	STM32L0x1
MCU name	STM32L071CBTx
MCU Package	LQFP48
MCU Pin number	48

2. Pinout Configuration



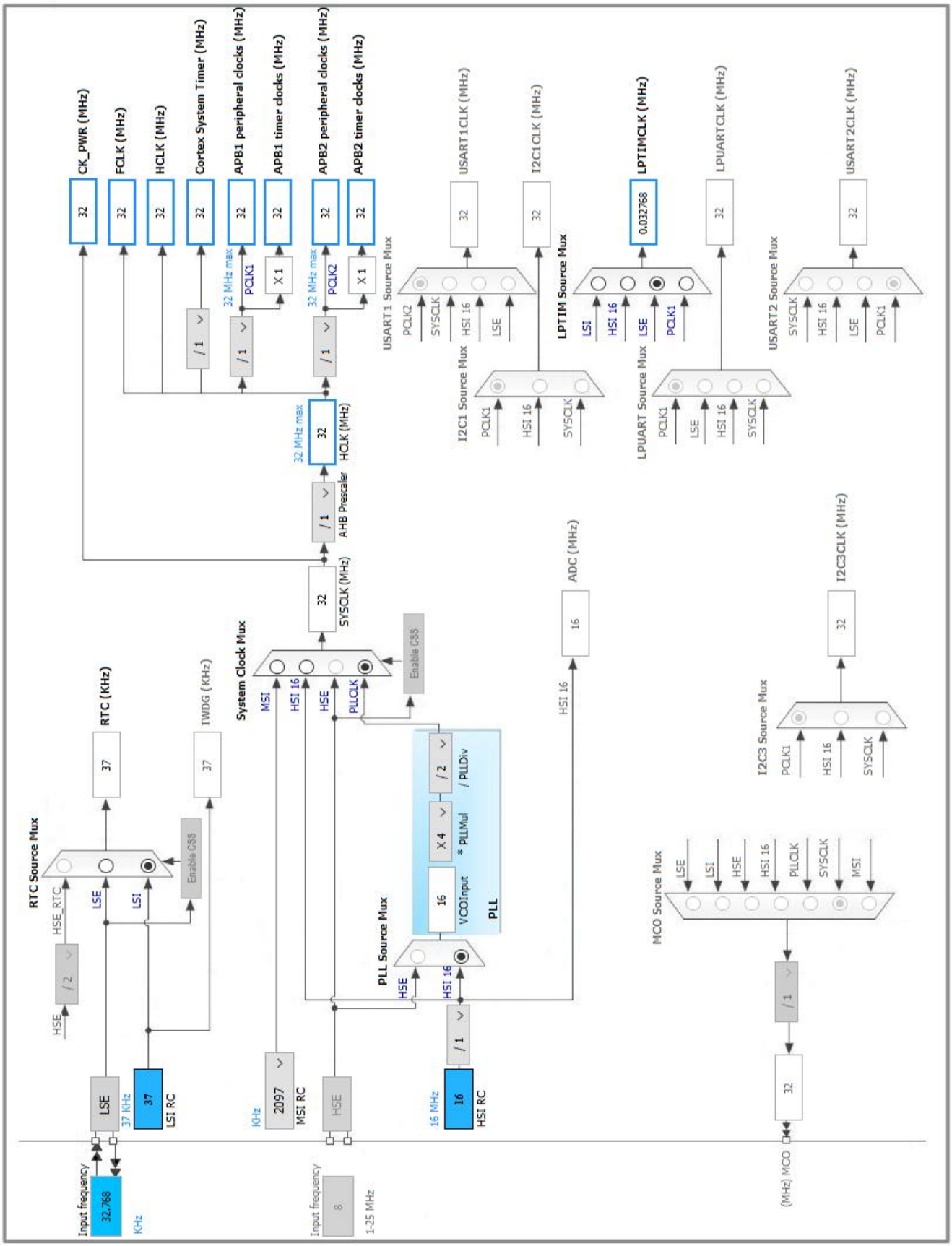
3. Pins Configuration

Pin Number LQFP48	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VDD	Power		
2	PC13 *	I/O	GPIO_Input	SB2
3	PC14-OSC32_IN	I/O	RCC_OSC32_IN	
4	PC15-OSC32_OUT	I/O	RCC_OSC32_OUT	
5	PH0-OSC_IN *	I/O	GPIO_Output	POWERLED
6	PH1-OSC_OUT *	I/O	GPIO_Output	LCD_PWR
7	NRST	Reset		
8	VSSA	Power		
9	VDDA	Power		
10	PA0 *	I/O	GPIO_Output	BACKLIGHT
12	PA2 **	I/O	LPUART1_TX	
13	PA3 **	I/O	LPUART1_RX	
14	PA4 *	I/O	GPIO_Input	SB1
15	PA5	I/O	SPI1_SCK	AX_SPI_SCK
16	PA6	I/O	SPI1_MISO	AX_SPI_MISO
17	PA7	I/O	SPI1_MOSI	AX_SPI_MOSI
18	PB0	I/O	GPIO_EXTI0	AX_IRQ
19	PB1 *	I/O	GPIO_Output	AX_SPI_CS
20	PB2 *	I/O	GPIO_Output	LCD_A0
23	VSS	Power		
24	VDD	Power		
34	PA13	I/O	SYS_SWDIO	
35	VSS	Power		
36	VDDIO2	Power		
37	PA14	I/O	SYS_SWCLK	
38	PA15	I/O	SPI1_NSS	
39	PB3 *	I/O	GPIO_Output	LCD_MOSI
40	PB4 *	I/O	GPIO_Output	LCD_CS
41	PB5 *	I/O	GPIO_Output	LCD_SCK
42	PB6 *	I/O	GPIO_Output	LCD_RESET
43	PB7 *	I/O	GPIO_Input	SB3
44	BOOT0	Boot		
45	PB8 *	I/O	GPIO_Input	SB4
47	VSS	Power		
48	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. LPTIM1

Mode: Counts internal clock events

5.1.1. Parameter Settings:

Clock:

Clock Prescaler	**Prescaler Div32 ***

Preload:

Update Mode	Update Immediate

Trigger:

Trigger Source	Software Trigger

5.2. RCC

Low Speed Clock (LSE) : Crystal/Ceramic Resonator

5.2.1. Parameter Settings:

System Parameters:

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

RCC Parameters:

HSI Calibration Value	16
MSI Calibration Value	0
HSE Startup Timout Value (ms)	100
LSE Startup Timout Value (ms)	5000
LSE Drive Capability	LSE oscillator low drive capability

Power Parameters:

Power Regulator Voltage Scale	Power Regulator Voltage Scale 1

5.3. RTC

mode: Activate Clock Source

mode: Activate Calendar

Alarm A: Internal Alarm A

5.3.1. Parameter Settings:

General:

Hour Format	Hourformat 24
Asynchronous Predivider value	127
Synchronous Predivider value	255

Calendar Time:

Data Format	BCD data format
Hours	0
Minutes	0
Seconds	0
Day Light Saving: value of hour adjustment	Daylightsaving None
Store Operation	Storeoperation Reset

Calendar Date:

Week Day	Monday
Month	January
Date	1
Year	0

Alarm A:

Hours	0
Minutes	0
Seconds	0
Sub Seconds	0
Alarm Mask Date Week day	Disable
Alarm Mask Hours	Disable
Alarm Mask Minutes	Disable
Alarm Mask Seconds	Disable
Alarm Sub Second Mask	All Alarm SS fields are masked.
Alarm Date Week Day Sel	Date
Alarm Date	1

5.4. SPI1

Mode: Full-Duplex Master

Hardware NSS Signal: Hardware NSS Output Signal

5.4.1. Parameter Settings:

Basic Parameters:

Frame Format	Motorola

Data Size	8 Bits
First Bit	MSB First

Clock Parameters:

Prescaler (for Baud Rate)	2
Baud Rate	**16.0 MBits/s ***
Clock Polarity (CPOL)	Low
Clock Phase (CPHA)	1 Edge

Advanced Parameters:

CRC Calculation	Disabled
NSS Signal Type	Output Hardware

5.5. SYS

mode: Debug Serial Wire

Timebase Source: SysTick

*** User modified value**

6. System Configuration

6.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
RCC	PC14-OSC32_IN	RCC_OSC32_IN	n/a	n/a	n/a	
	PC15-OSC32_OUT	RCC_OSC32_OUT	n/a	n/a	n/a	
SPI1	PA5	SPI1_SCK	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	AX_SPI_SCK
	PA6	SPI1_MISO	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	AX_SPI_MISO
	PA7	SPI1_MOSI	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	AX_SPI_MOSI
	PA15	SPI1_NSS	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	
SYS	PA13	SYS_SWDIO	n/a	n/a	n/a	
	PA14	SYS_SWCLK	n/a	n/a	n/a	
Single Mapped Signals	PA2	LPUART1_TX	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	
	PA3	LPUART1_RX	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	
GPIO	PC13	GPIO_Input	Input mode	**Pull-up ***	n/a	SB2
	PH0-OSC_IN	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	POWERLED
	PH1-OSC_OUT	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LCD_PWR
	PA0	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	BACKLIGHT
	PA4	GPIO_Input	Input mode	**Pull-up ***	n/a	SB1
	PB0	GPIO_EXTI0	External Interrupt Mode with Rising edge trigger detection	No pull-up and no pull-down	n/a	AX_IRQ
	PB1	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	AX_SPI_CS
	PB2	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LCD_A0
	PB3	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LCD_MOSI
	PB4	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LCD_CS
	PB5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LCD_SCK
	PB6	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LCD_RESET
	PB7	GPIO_Input	Input mode	**Pull-up ***	n/a	SB3

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
	PB8	GPIO_Input	Input mode	**Pull-up ***	n/a	SB4

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	1	0
Pendable request for system service	true	1	0
System tick timer	true	1	0
RTC global interrupt through EXTI lines 17, 19 and 20 and LSE CSS interrupt through EXTI line 19	true	1	0
EXTI line 0 and line 1 interrupts	true	0	0
LPTIM1 global interrupt / LPTIM1 wake-up interrupt through EXTI line 29	true	1	0
PVD interrupt through EXTI line 16	unused		
Flash and EEPROM global interrupt	unused		
RCC global interrupt	unused		
SPI1 global interrupt	unused		

*** User modified value**

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32L0
Line	STM32L0x1
MCU	STM32L071CBTx
Datasheet	027101_Rev3

7.2. Parameter Selection

Temperature	25
Vdd	3.0

8. Software Project

8.1. Project Settings

Name	Value
Project Name	DevKit-STM32-AX5043
Project Folder	C:\Users\Sergey\Documents\IAR\DevKit-STM32-AX5043
Toolchain / IDE	EWARM V7
Firmware Package Name and Version	STM32Cube FW_L0 V1.10.0

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	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