1. Description

1.1. Project

Project Name	STM32L431RC_BearPiLCD
Board Name	custom
Generated with:	STM32CubeMX 4.27.0
Date	07/18/2019

1.2. MCU

MCU Series	STM32L4
MCU Line	STM32L4x1
MCU name	STM32L431RCTx
MCU Package	LQFP64
MCU Pin number	64

2. Pinout Configuration
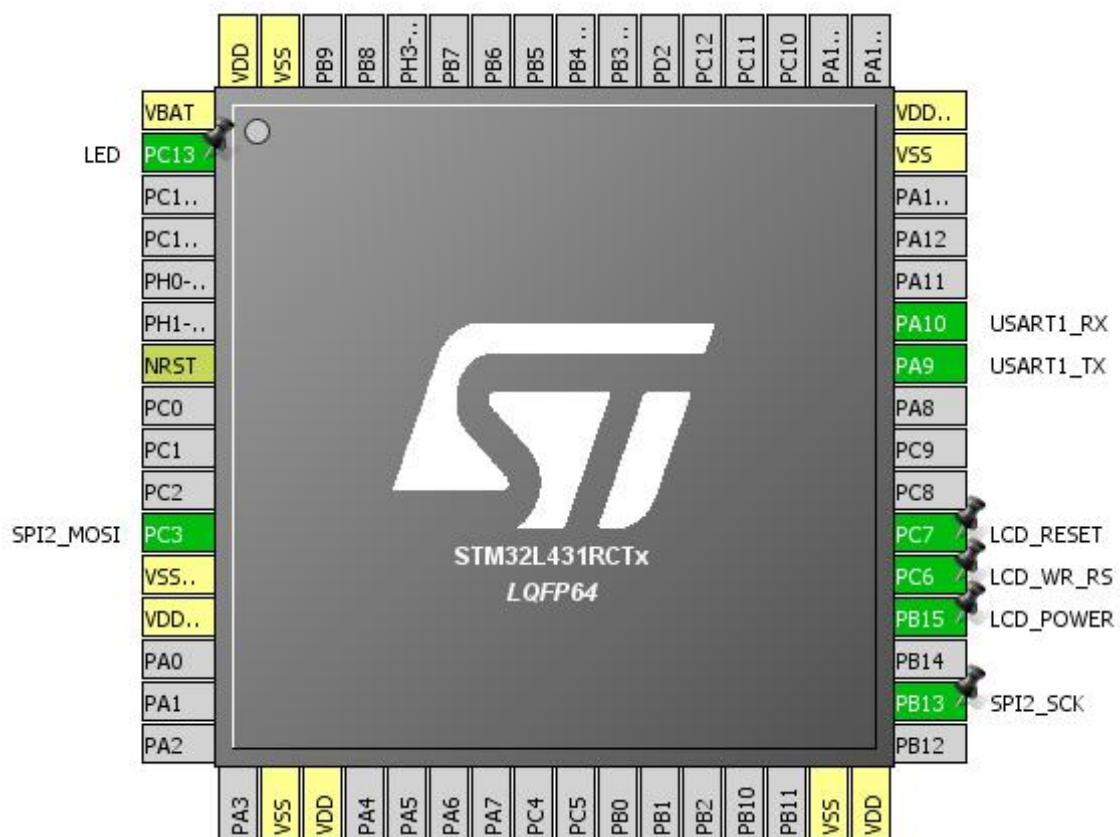
3. Pins Configuration

Pin Number LQFP64	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VBAT	Power		
2	PC13 *	I/O	GPIO_Output	LED
7	NRST	Reset		
11	PC3	I/O	SPI2_MOSI	
12	VSSA/VREF-	Power		
13	VDDA/VREF+	Power		
18	VSS	Power		
19	VDD	Power		
31	VSS	Power		
32	VDD	Power		
34	PB13	I/O	SPI2_SCK	
36	PB15 *	I/O	GPIO_Output	LCD_POWER
37	PC6 *	I/O	GPIO_Output	LCD_WR_RS
38	PC7 *	I/O	GPIO_Output	LCD_RESET
42	PA9	I/O	USART1_TX	
43	PA10	I/O	USART1_RX	
47	VSS	Power		
48	VDDUSB	Power		
63	VSS	Power		
64	VDD	Power		

 * The pin is affected with an I/O function

4. Clock Tree Configuration
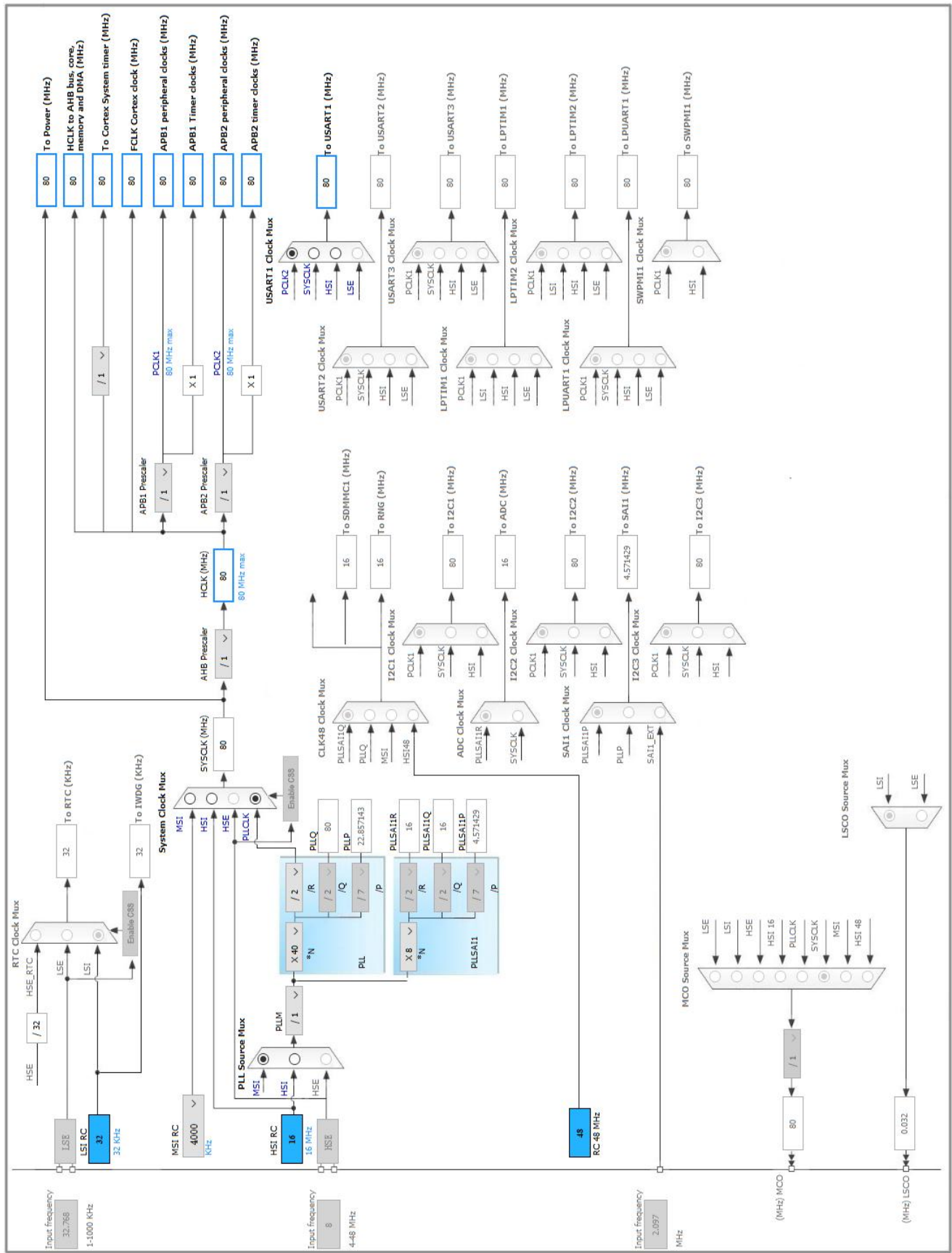
5. IPs and Middleware Configuration

5.1. SPI2

Mode: Transmit Only Master

5.1.1. Parameter Settings:

Basic Parameters:

Frame Format	Motorola
Data Size	**8 Bits ***
First Bit	MSB First

Clock Parameters:

Prescaler (for Baud Rate)	2
Baud Rate	**40.0 MBits/s ***
Clock Polarity (CPOL)	**High ***
Clock Phase (CPHA)	**2 Edge ***

Advanced Parameters:

CRC Calculation	Disabled
NSS Signal Type	Software

5.2. SYS

Timebase Source: SysTick

5.3. USART1

Mode: Asynchronous

5.3.1. 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:

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

* User modified value

6. System Configuration

6.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
SPI2	PC3	SPI2_MOSI	Alternate Function Push Pull	No pull-up and no pull-down	**Very High** *	
	PB13	SPI2_SCK	Alternate Function Push Pull	No pull-up and no pull-down	**Very High** *	
USART1	PA9	USART1_TX	Alternate Function Push Pull	No pull-up and no pull-down	**Very High** *	
	PA10	USART1_RX	Alternate Function Push Pull	No pull-up and no pull-down	**Very High** *	
GPIO	PC13	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED
	PB15	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LCD_POWER
	PC6	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LCD_WR_RS
	PC7	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LCD_RESET

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
Memory management fault	true	0	0
Prefetch fault, memory access fault	true	0	0
Undefined instruction or illegal state	true	0	0
System service call via SWI instruction	true	0	0
Debug monitor	true	0	0
Pendable request for system service	true	0	0
System tick timer	true	0	0
PVD/PVM1/PVM2/PVM3/PVM4 interrupts through EXTI lines 16/35/36/37/38	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
SPI2 global interrupt	unused		
USART1 global interrupt	unused		
FPU global interrupt	unused		

* User modified value

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32L4
Line	STM32L4x1
MCU	STM32L431RCTx
Datasheet	028800_Rev1

7.2. Parameter Selection

Temperature	25
Vdd	null

8. Software Project

8.1. Project Settings

Name	Value
Project Name	STM32L431RC_BearPiLCD
Project Folder	D:\1BearPiCode\STM32L431RC_BearPiLCD
Toolchain / IDE	MDK-ARM V5
Firmware Package Name and Version	STM32Cube FW_L4 V1.13.0

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	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

9. Software Pack Report