1. Description

1.1. Project

Project Name	GPS_ioc
Board Name	GPS_ioc
Generated with:	STM32CubeMX 4.22.0
Date	11/17/2017

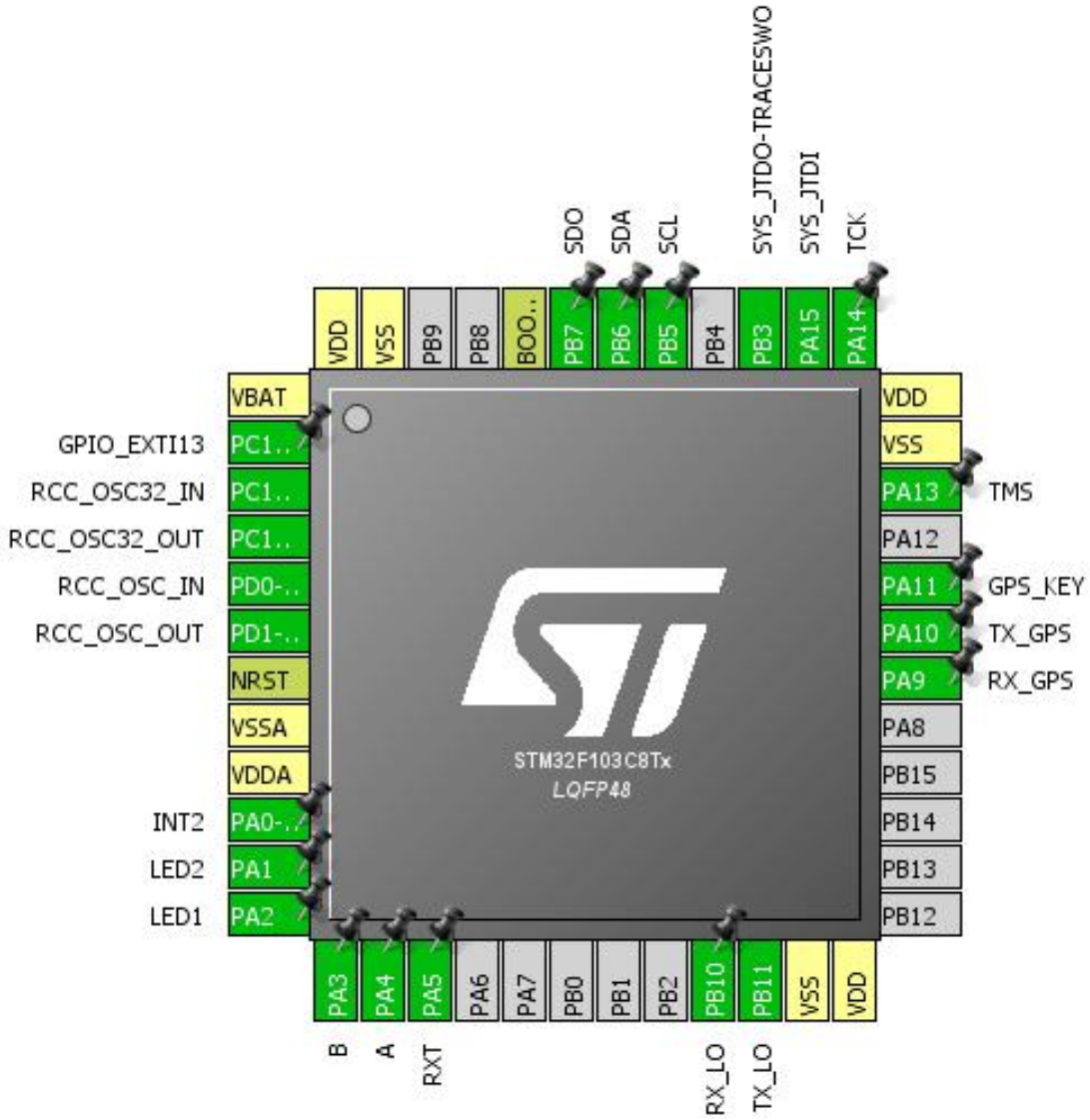
1.2. MCU

MCU Series	STM32F1
MCU Line	STM32F103
MCU name	STM32F103C8Tx
MCU Package	LQFP48
MCU Pin number	48

1.3. Caution

The report was generated although the configuration was in a modified state. It may be not accurate

2. Pinout Configuration

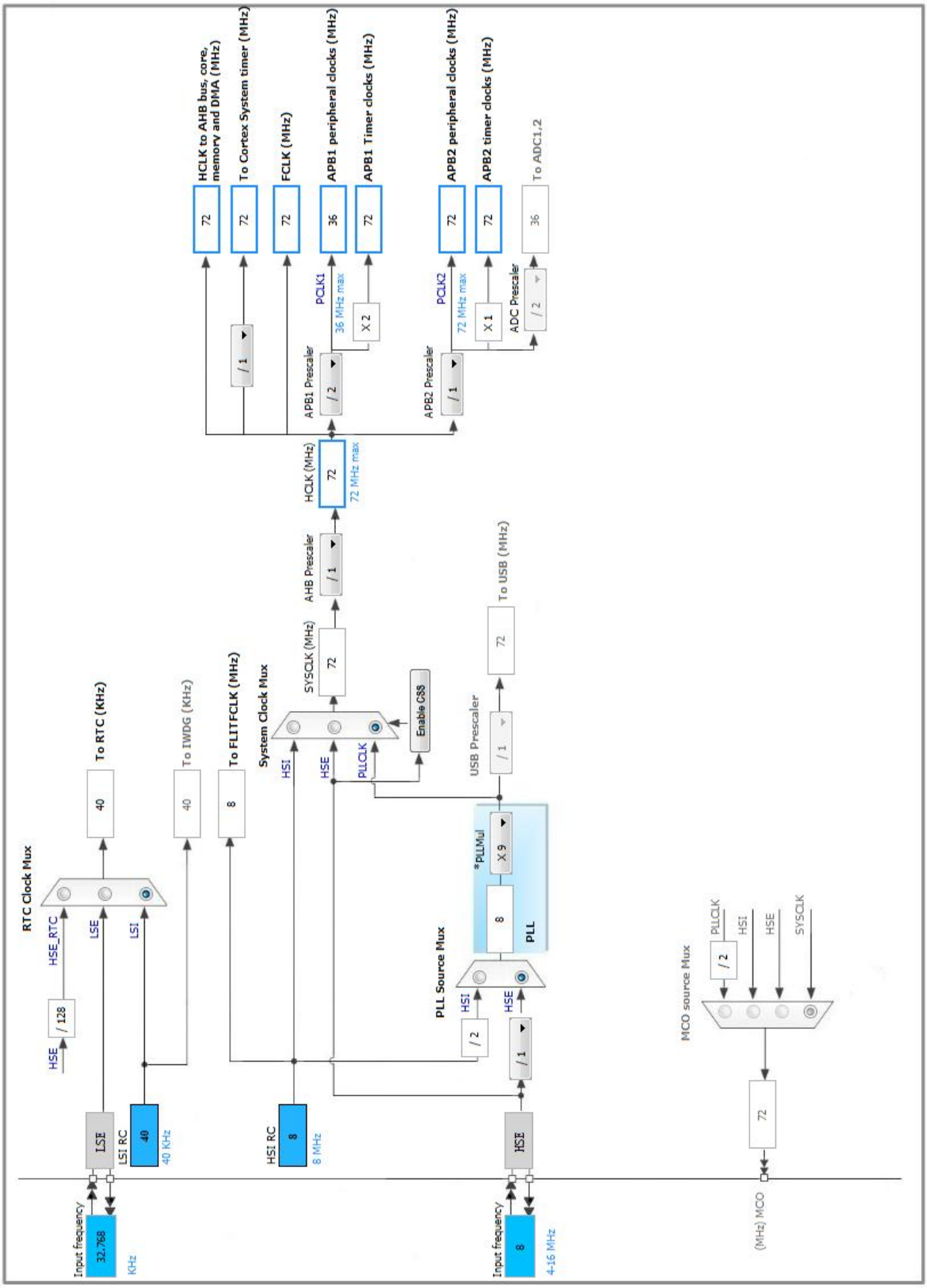


3. Pins Configuration

Pin Number LQFP48	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VBAT	Power		
2	PC13-TAMPER-RTC	I/O	GPIO_EXTI13	
3	PC14-OSC32_IN	I/O	RCC_OSC32_IN	
4	PC15-OSC32_OUT	I/O	RCC_OSC32_OUT	
5	PD0-OSC_IN	I/O	RCC_OSC_IN	
6	PD1-OSC_OUT	I/O	RCC_OSC_OUT	
7	NRST	Reset		
8	VSSA	Power		
9	VDDA	Power		
10	PA0-WKUP	I/O	SYS_WKUP	INT2
11	PA1 *	I/O	GPIO_Output	LED2
12	PA2 *	I/O	GPIO_Output	LED1
13	PA3 *	I/O	GPIO_Output	B
14	PA4 *	I/O	GPIO_Output	A
15	PA5 *	I/O	GPIO_Output	RXT
21	PB10	I/O	USART3_TX	RX_LO
22	PB11	I/O	USART3_RX	TX_LO
23	VSS	Power		
24	VDD	Power		
30	PA9	I/O	USART1_TX	RX_GPS
31	PA10	I/O	USART1_RX	TX_GPS
32	PA11 *	I/O	GPIO_Output	GPS_KEY
34	PA13	I/O	SYS_JTMS-SWDIO	TMS
35	VSS	Power		
36	VDD	Power		
37	PA14	I/O	SYS_JTCK-SWCLK	TCK
38	PA15	I/O	SYS_JTDI	
39	PB3	I/O	SYS_JTDO-TRACESWO	
41	PB5 *	I/O	GPIO_Output	SCL
42	PB6 *	I/O	GPIO_Output	SDA
43	PB7 *	I/O	GPIO_Output	SDO
44	BOOT0	Boot		
47	VSS	Power		
48	VDD	Power		

* The pin is affected with an I/O function

4. Clock Tree Configuration



5. IPs and Middleware Configuration

5.1. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

Low Speed Clock (LSE) : Crystal/Ceramic Resonator

5.1.1. Parameter Settings:

System Parameters:

VDD voltage (V)	3.3
Prefetch Buffer	Enabled
Flash Latency(WS)	2 WS (3 CPU cycle)

RCC Parameters:

HSI Calibration Value	16
HSE Startup Timout Value (ms)	100
LSE Startup Timout Value (ms)	5000

5.2. RTC

mode: Activate Clock Source

mode: Activate Calendar

5.2.1. Parameter Settings:

Calendar Time:

Data Format	BCD data format
Hours	1
Minutes	0
Seconds	0

General:

Auto Predivider Calculation	Enabled
Asynchronous Predivider value	Automatic Predivider Calculation Enabled
Output	Alarm pulse signal on the TAMPER pin

Calendar Date:

Week Day	Monday
Month	January
Date	1

Year	0

5.3. SYS

Debug: JTAG (4 pins)

mode: System Wake-Up

Timebase Source: SysTick

5.4. USART1

Mode: Asynchronous

5.4.1. 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

5.5. USART3

Mode: Asynchronous

5.5.1. Parameter Settings:

Basic Parameters:

Baud Rate	**38400 ***
Word Length	8 Bits (including Parity)
Parity	None
Stop Bits	1

Advanced Parameters:

Data Direction	Receive and Transmit
Over Sampling	16 Samples

*** 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	
	PD0-OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	
	PD1-OSC_OUT	RCC_OSC_OUT	n/a	n/a	n/a	
SYS	PA0-WKUP	SYS_WKUP	n/a	n/a	n/a	INT2
	PA13	SYS_JTMS-SWDIO	n/a	n/a	n/a	TMS
	PA14	SYS_JTCK-SWCLK	n/a	n/a	n/a	TCK
	PA15	SYS_JTDI	n/a	n/a	n/a	
	PB3	SYS_JTDO-TRACESWO	n/a	n/a	n/a	
USART1	PA9	USART1_TX	Alternate Function Push Pull	n/a	**High ***	RX_GPS
	PA10	USART1_RX	Input mode	No pull-up and no pull-down	**n/a**	TX_GPS
USART3	PB10	USART3_TX	Alternate Function Push Pull	n/a	**High ***	RX_LO
	PB11	USART3_RX	Input mode	No pull-up and no pull-down	**n/a**	TX_LO
GPIO	PC13-TAMPER-RTC	GPIO_EXTI13	External Interrupt Mode with Rising edge trigger detection	No pull-up and no pull-down	n/a	
	PA1	GPIO_Output	Output Push Pull	n/a	Low	LED2
	PA2	GPIO_Output	Output Push Pull	n/a	Low	LED1
	PA3	GPIO_Output	Output Push Pull	n/a	Low	B
	PA4	GPIO_Output	Output Push Pull	n/a	Low	A
	PA5	GPIO_Output	Output Push Pull	n/a	Low	RXT
	PA11	GPIO_Output	Output Push Pull	n/a	Low	GPS_KEY
	PB5	GPIO_Output	Output Push Pull	n/a	Low	SCL
	PB6	GPIO_Output	Output Push Pull	n/a	Low	SDA
	PB7	GPIO_Output	Output Push Pull	n/a	Low	SDO

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 interrupt through EXTI line 16	true	0	0
RTC global interrupt	true	0	0
EXTI line[15:10] interrupts	true	0	0
Flash global interrupt	unused		
RCC global interrupt	unused		
USART1 global interrupt	unused		
USART3 global interrupt	unused		

*** User modified value**

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32F1
Line	STM32F103
MCU	STM32F103C8Tx
Datasheet	13587_Rev17

7.2. Parameter Selection

Temperature	25
Vdd	3.3

8. Software Project

8.1. Project Settings

Name	Value
Project Name	GPS_ioc
Project Folder	E:\dingweimokuai\GPS_all\GPS_iocfenggu_digonghao\GPS_ioc
Toolchain / IDE	EWARM
Firmware Package Name and Version	STM32Cube FW_F1 V1.6.0

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