

1. Description

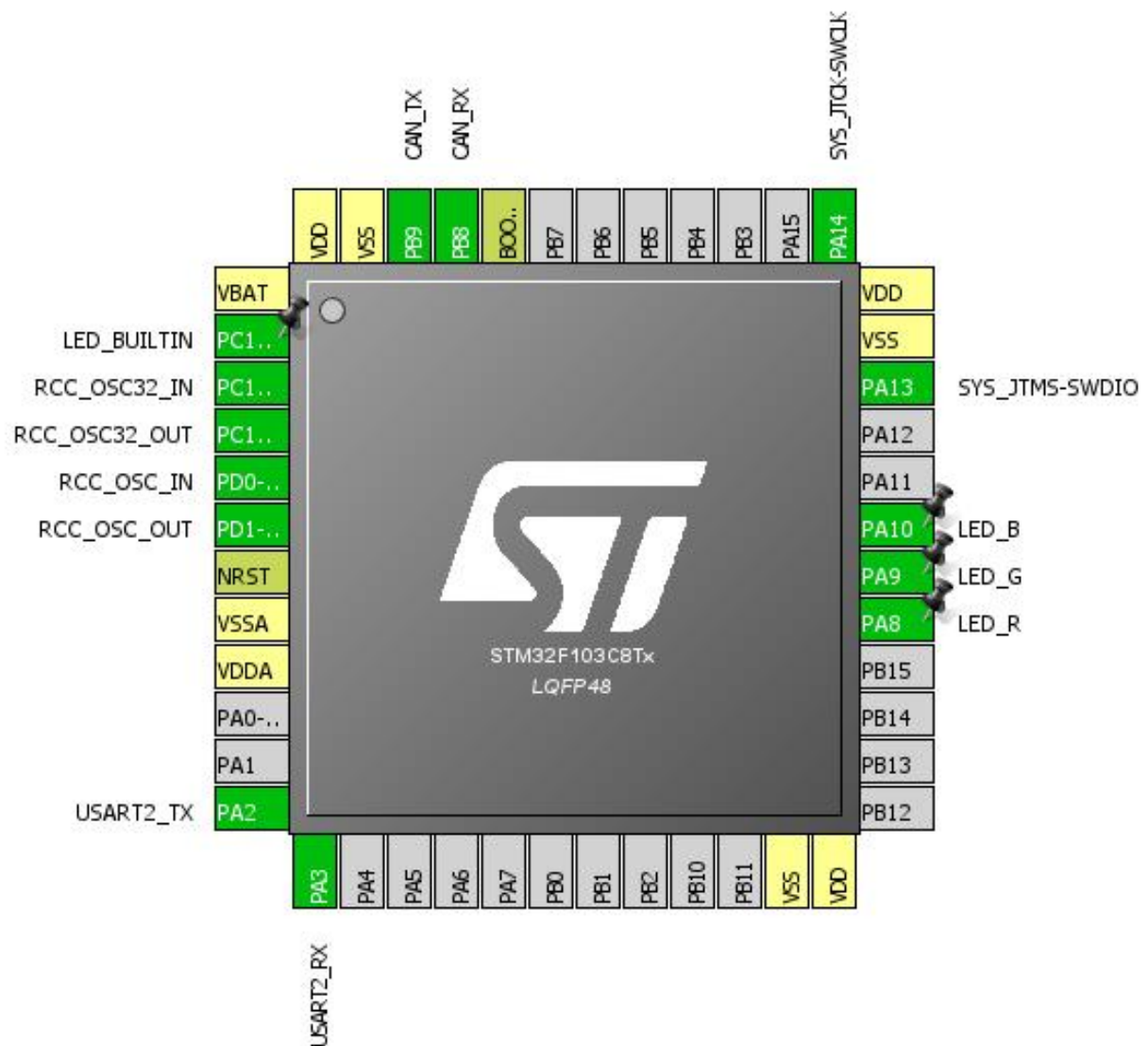
1.1. Project

Project Name	cubemx_can
Board Name	cubemx_can
Generated with:	STM32CubeMX 4.22.0
Date	08/03/2017

1.2. MCU

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

2. Pinout Configuration

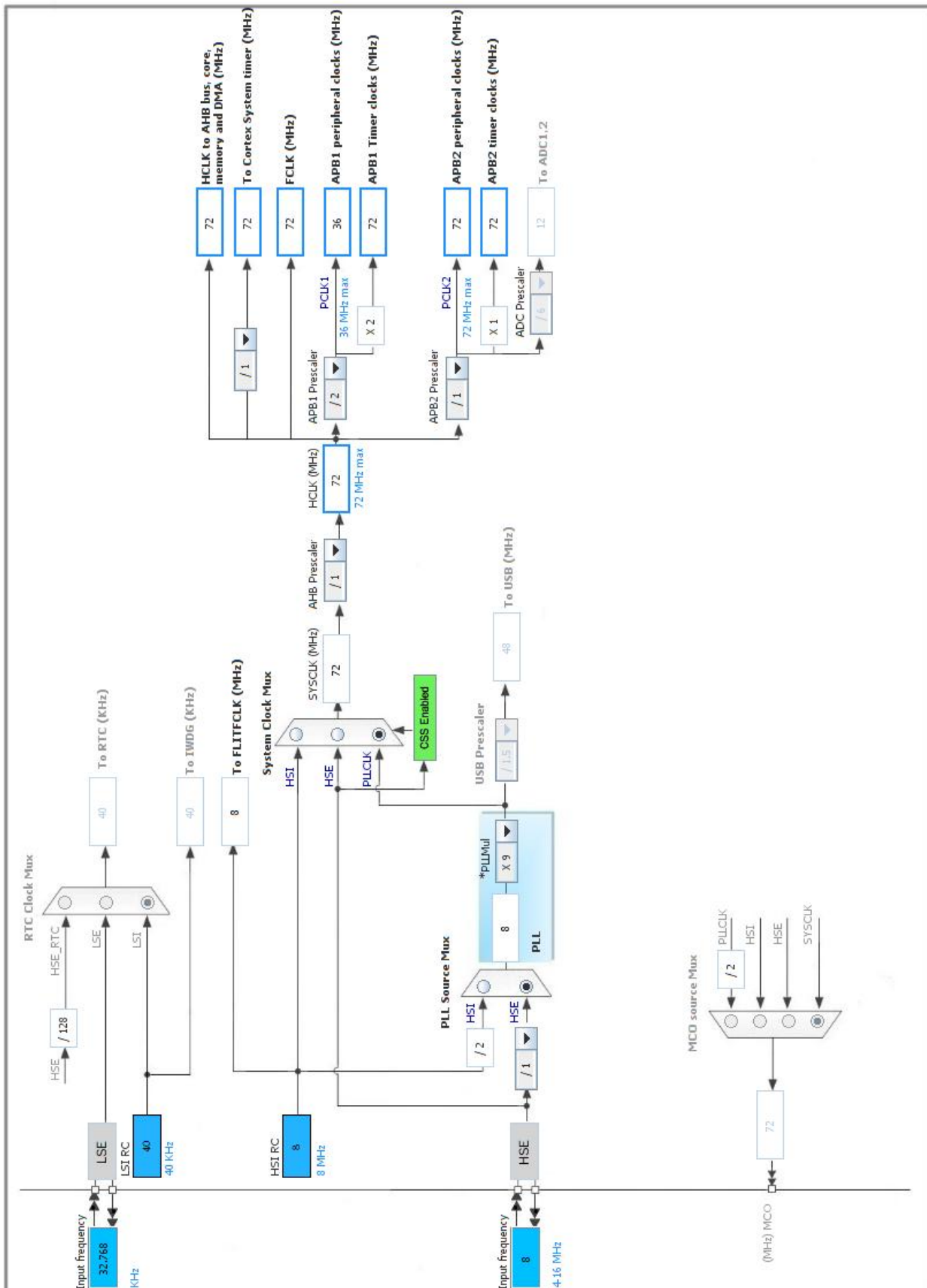


3. Pins Configuration

Pin Number LQFP48	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VBAT	Power		
2	PC13-TAMPER-RTC *	I/O	GPIO_Output	LED_BUILTIN
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		
12	PA2	I/O	USART2_TX	
13	PA3	I/O	USART2_RX	
23	VSS	Power		
24	VDD	Power		
29	PA8 *	I/O	GPIO_Output	LED_R
30	PA9 *	I/O	GPIO_Output	LED_G
31	PA10 *	I/O	GPIO_Output	LED_B
34	PA13	I/O	SYS_JTMS-SWDIO	
35	VSS	Power		
36	VDD	Power		
37	PA14	I/O	SYS_JTCK-SWCLK	
44	BOOT0	Boot		
45	PB8	I/O	CAN_RX	
46	PB9	I/O	CAN_TX	
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. CAN

mode: Mode

5.1.1. Parameter Settings:

Bit Timings Parameters:

Prescaler (for Time Quantum)	6 *
Time Quantum	166.66666666666669 *
Time Quanta in Bit Segment 1	5 Times *
Time Quanta in Bit Segment 2	6 Times *
Time for one Bit	2000 *
ReSynchronization Jump Width	1 Time

Basic Parameters:

Time Triggered Communication Mode	Disable
Automatic Bus-Off Management	Enable *
Automatic Wake-Up Mode	Disable
No-Automatic Retransmission	Enable *
Receive Fifo Locked Mode	Disable
Transmit Fifo Priority	Disable

Advanced Parameters:

Operating Mode	Normal
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5.2. CRC

mode: Activated

5.3. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

Low Speed Clock (LSE) : Crystal/Ceramic Resonator

5.3.1. 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 Timeout Value (ms)	100
LSE Startup Timeout Value (ms)	5000

5.4. SYS

Debug: Serial Wire

Timebase Source: TIM4

5.5. USART2

Mode: Asynchronous

5.5.1. 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

* User modified value

6. System Configuration

6.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
CAN	PB8	CAN_RX	Input mode	No pull-up and no pull-down	n/a	
	PB9	CAN_TX	Alternate Function Push Pull	n/a	High *	
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	PA13	SYS_JTMS-SWDIO	n/a	n/a	n/a	
	PA14	SYS_JTCK-SWCLK	n/a	n/a	n/a	
USART2	PA2	USART2_TX	Alternate Function Push Pull	n/a	High *	
	PA3	USART2_RX	Input mode	No pull-up and no pull-down	n/a	
GPIO	PC13-TAMPER-RTC	GPIO_Output	Output Push Pull	n/a	Low	LED_BUILTIN
	PA8	GPIO_Output	Output Push Pull	n/a	Low	LED_R
	PA9	GPIO_Output	Output Push Pull	n/a	Low	LED_G
	PA10	GPIO_Output	Output Push Pull	n/a	Low	LED_B

6.2. DMA configuration

DMA request	Stream	Direction	Priority
USART2_TX	DMA1_Channel7	Memory To Peripheral	Low
USART2_RX	DMA1_Channel6	Peripheral To Memory	Low

USART2_TX: DMA1_Channel7 DMA request Settings:

Mode: Normal
 Peripheral Increment: Disable
 Memory Increment: **Enable ***
 Peripheral Data Width: Byte
 Memory Data Width: Byte

USART2_RX: DMA1_Channel6 DMA request Settings:

Mode: Normal
 Peripheral Increment: Disable
 Memory Increment: **Enable ***
 Peripheral Data Width: Byte
 Memory Data Width: Byte

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
DMA1 channel6 global interrupt	true	0	0
DMA1 channel7 global interrupt	true	0	0
USB low priority or CAN RX0 interrupts	true	0	0
CAN RX1 interrupt	true	0	0
CAN SCE interrupt	true	0	0
TIM4 global interrupt	true	0	0
USART2 global interrupt	true	0	0
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
USB high priority or CAN TX interrupts	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	cubemx_can
Project Folder	/home/wang/stm32/cubemx_can
Toolchain / IDE	SW4STM32
Firmware Package Name and Version	STM32Cube FW_F1 V1.6.0

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)	Yes