1. Description

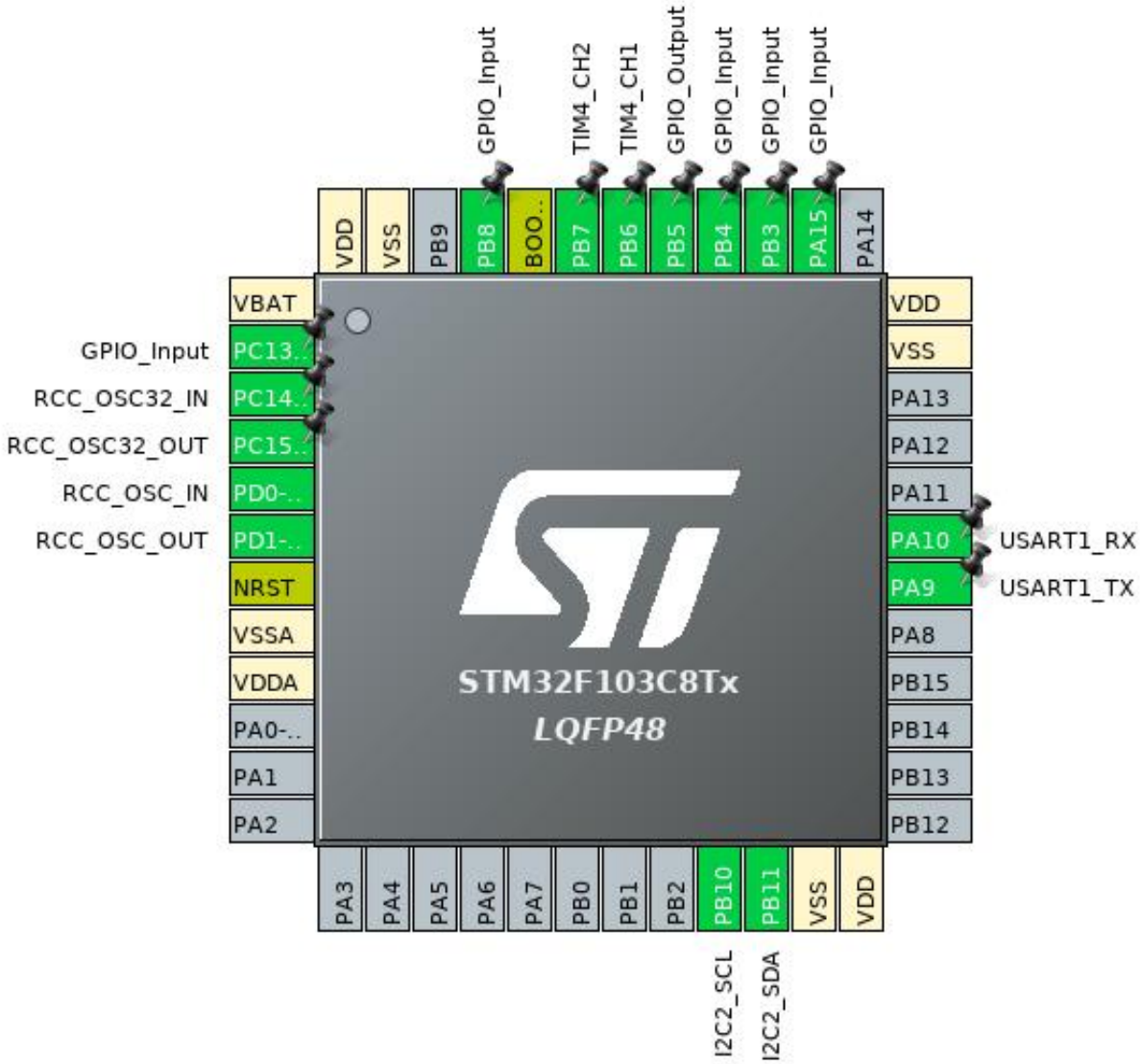
1.1. Project

Project Name	npdma
Board Name	custom
Generated with:	STM32CubeMX 5.4.0
Date	02/02/2020

1.2. MCU

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

2. Pinout Configuration

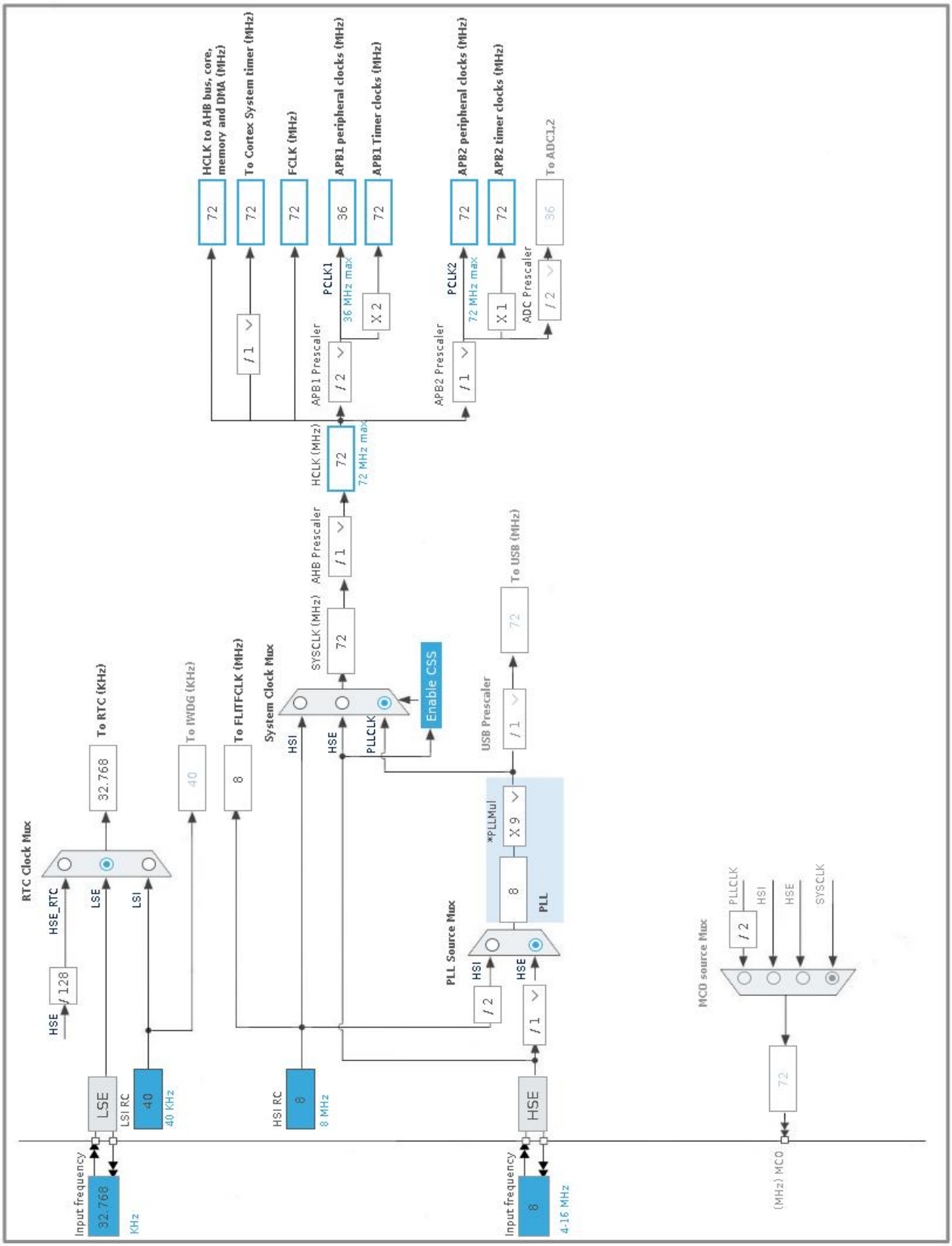


3. Pins Configuration

Pin Number LQFP48	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VBAT	Power		
2	PC13-TAMPER-RTC *	I/O	GPIO_Input	
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		
21	PB10	I/O	I2C2_SCL	
22	PB11	I/O	I2C2_SDA	
23	VSS	Power		
24	VDD	Power		
30	PA9	I/O	USART1_TX	
31	PA10	I/O	USART1_RX	
35	VSS	Power		
36	VDD	Power		
38	PA15 *	I/O	GPIO_Input	
39	PB3 *	I/O	GPIO_Input	
40	PB4 *	I/O	GPIO_Input	
41	PB5 *	I/O	GPIO_Output	
42	PB6	I/O	TIM4_CH1	
43	PB7	I/O	TIM4_CH2	
44	BOOT0	Boot		
45	PB8 *	I/O	GPIO_Input	
47	VSS	Power		
48	VDD	Power		

* The pin is affected with an I/O function

4. Clock Tree Configuration



5. Software Project

5.1. Project Settings

Name	Value
Project Name	npdma
Project Folder	/home/steve/stm/npdma/npdma
Toolchain / IDE	Makefile
Firmware Package Name and Version	STM32Cube FW_F1 V1.7.0

5.2. Code Generation Settings

Name	Value
STM32Cube MCU packages and embedded software	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

6. Power Consumption Calculator report

6.1. Microcontroller Selection

Series	STM32F1
Line	STM32F103
MCU	STM32F103C8Tx
Datasheet	13587_Rev17

6.2. Parameter Selection

Temperature	25
Vdd	3.3

7. IPs and Middleware Configuration

7.1. GPIO

7.2. I2C2

I2C: I2C

7.2.1. Parameter Settings:

Master Features:

I2C Speed Mode	Standard Mode
I2C Clock Speed (Hz)	100000

Slave Features:

Clock No Stretch Mode	Disabled
Primary Address Length selection	7-bit
Dual Address Acknowledged	Disabled
Primary slave address	0
General Call address detection	Disabled

7.3. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

Low Speed Clock (LSE) : Crystal/Ceramic Resonator

7.3.1. 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 Timout Value (ms)	100
LSE Startup Timout Value (ms)	5000

7.4. RTC

mode: Activate Clock Source

RTC OUT: No RTC Output

7.4.1. Parameter Settings:

Calendar Time:

Data Format	**Binary data format ***
Hours	0
Minutes	0
Seconds	0

General:

Auto Predivider Calculation	Enabled
Asynchronous Predivider value	Automatic Predivider Calculation Enabled
Output	No output on the TAMPER pin

Calendar Date:

Week Day	Monday
Month	January
Date	1
Year	0

7.5. SYS

Debug: No Debug

Timebase Source: SysTick

7.6. TIM2

Clock Source : Internal Clock

Channel1: Output Compare No Output

Channel2: Output Compare No Output

7.6.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	0
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	0
Internal Clock Division (CKD)	No Division
auto-reload preload	Disable

Trigger Output (TRGO) Parameters:

Master/Slave Mode (MSM bit)	Disable (Trigger input effect not delayed)
Trigger Event Selection	Reset (UG bit from TIMx_EGR)

Output Compare No Output Channel 1:

Mode	Frozen (used for Timing base)
Pulse (16 bits value)	0
CH Polarity	High

Output Compare No Output Channel 2:

Mode	Frozen (used for Timing base)
Pulse (16 bits value)	0
CH Polarity	High

7.7. TIM4

Channel1: Input Capture direct mode

Channel2: Input Capture direct mode

7.7.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	0
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	0
Internal Clock Division (CKD)	No Division
auto-reload preload	Disable

Trigger Output (TRGO) Parameters:

Master/Slave Mode (MSM bit)	Disable (Trigger input effect not delayed)
Trigger Event Selection	Reset (UG bit from TIMx_EGR)

Input Capture Channel 1:

Polarity Selection	Rising Edge
IC Selection	Direct
Prescaler Division Ratio	No division
Input Filter (4 bits value)	0

Input Capture Channel 2:

Polarity Selection	Rising Edge
IC Selection	Direct
Prescaler Division Ratio	No division
Input Filter (4 bits value)	0

7.8. USART1

Mode: Asynchronous

7.8.1. 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**

8. System Configuration

8.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
I2C2	PB10	I2C2_SCL	Alternate Function Open Drain	n/a	**High ***	
	PB11	I2C2_SDA	Alternate Function Open Drain	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	
TIM4	PB6	TIM4_CH1	Input mode	**Pull-up ***	n/a	
	PB7	TIM4_CH2	Input mode	**Pull-up ***	n/a	
USART1	PA9	USART1_TX	Alternate Function Push Pull	n/a	**High ***	
	PA10	USART1_RX	Input mode	No pull-up and no pull-down	**n/a**	
GPIO	PC13-TAMPER-RTC	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	
	PA15	GPIO_Input	Input mode	**Pull-up ***	n/a	
	PB3	GPIO_Input	Input mode	**Pull-up ***	n/a	
	PB4	GPIO_Input	Input mode	**Pull-up ***	n/a	
	PB5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PB8	GPIO_Input	Input mode	**Pull-up ***	n/a	

8.2. DMA configuration

DMA request	Stream	Direction	Priority
TIM2_UP	DMA1_Channel2	Memory To Peripheral	Low
TIM2_CH1	DMA1_Channel5	Memory To Peripheral	Low
TIM2_CH2/CH4	DMA1_Channel7	Memory To Peripheral	Low

TIM2_UP: DMA1_Channel2 DMA request Settings:

Mode:	**Circular ***
Peripheral Increment:	Disable
Memory Increment:	Disable
Peripheral Data Width:	Half Word
Memory Data Width:	Half Word

TIM2_CH1: DMA1_Channel5 DMA request Settings:

Mode:	**Circular ***
Peripheral Increment:	Disable
Memory Increment:	Disable
Peripheral Data Width:	Half Word
Memory Data Width:	Half Word

TIM2_CH2/CH4: DMA1_Channel7 DMA request Settings:

Mode:	**Circular ***
Peripheral Increment:	Disable
Memory Increment:	Disable
Peripheral Data Width:	Half Word
Memory Data Width:	Half Word

8.3. 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 channel2 global interrupt	true	0	0
DMA1 channel5 global interrupt	true	0	0
DMA1 channel7 global interrupt	true	0	0
PVD interrupt through EXTI line 16	unused		
RTC global interrupt	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
TIM2 global interrupt	unused		
TIM4 global interrupt	unused		
I2C2 event interrupt	unused		
I2C2 error interrupt	unused		
USART1 global interrupt	unused		
RTC alarm interrupt through EXTI line 17	unused		

*** User modified value**

9. Software Pack Report