1. Description

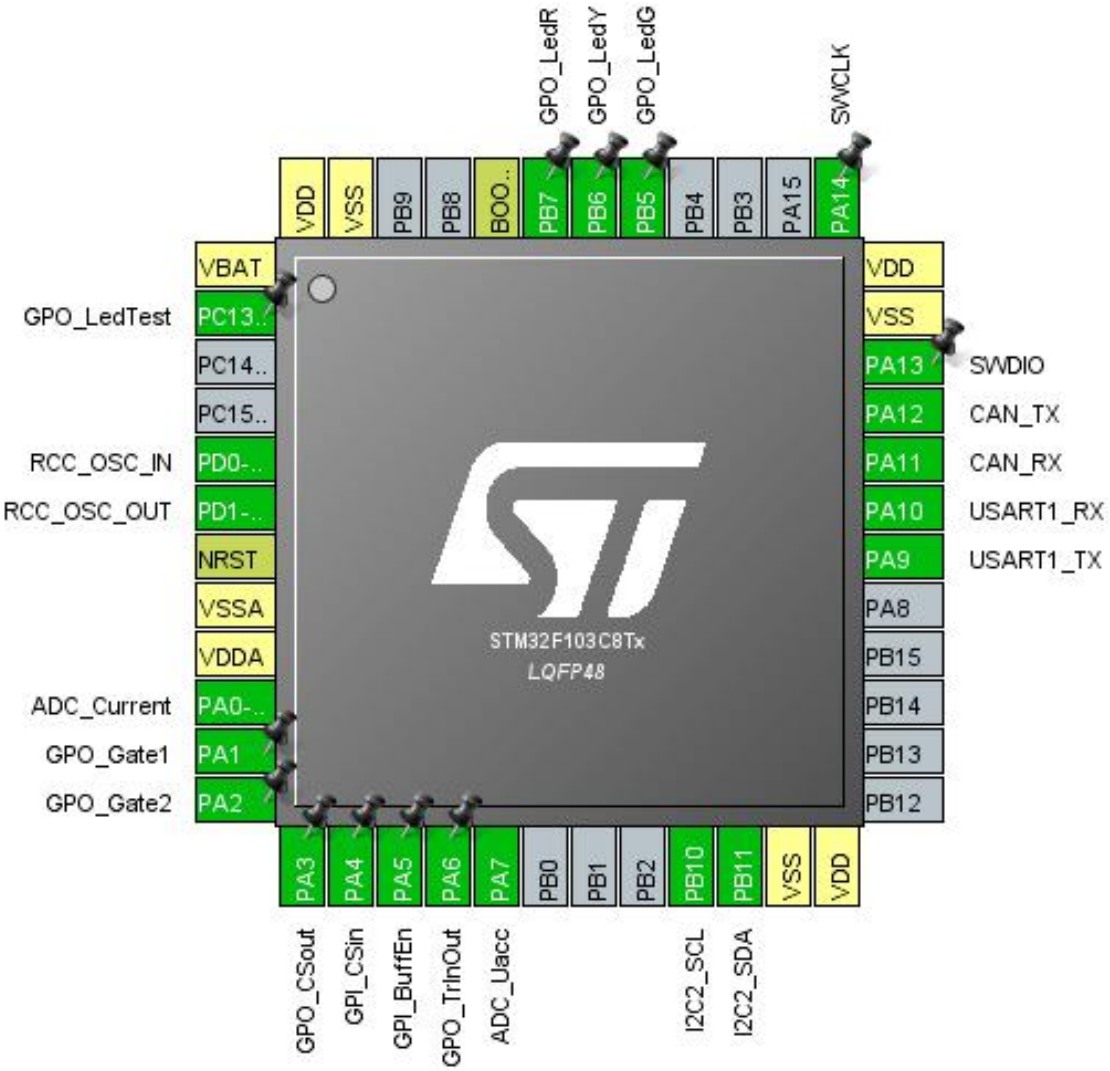
1.1. Project

Project Name	Balance
Board Name	custom
Generated with:	STM32CubeMX 5.0.1
Date	02/14/2019

1.2. MCU

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

2. Pinout Configuration

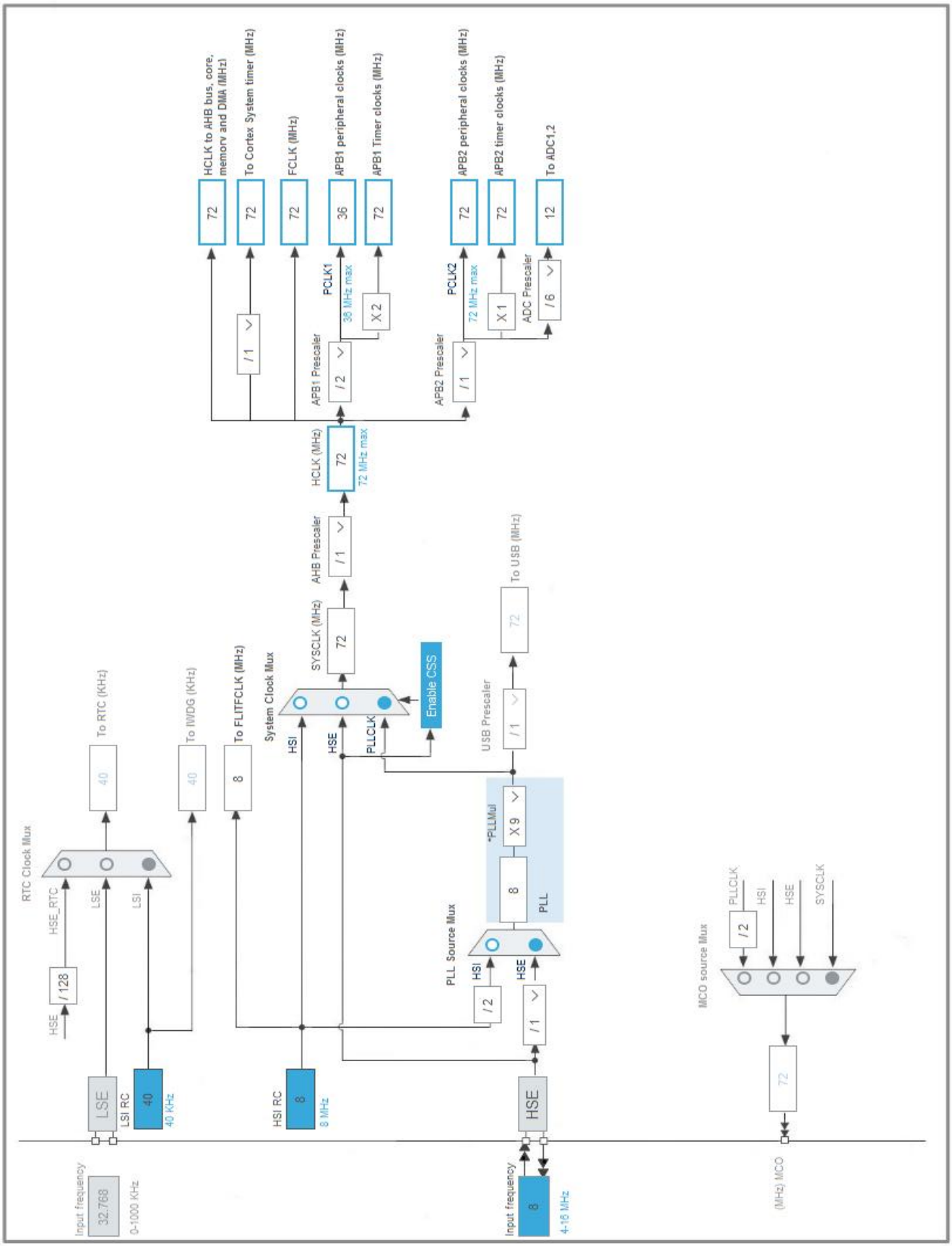


3. Pins Configuration

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	GPO_LedTest
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	ADC1_IN0	ADC_Current
11	PA1 *	I/O	GPIO_Output	GPO_Gate1
12	PA2 *	I/O	GPIO_Output	GPO_Gate2
13	PA3 *	I/O	GPIO_Output	GPO_CSout
14	PA4 *	I/O	GPIO_Input	GPI_CSin
15	PA5 *	I/O	GPIO_Input	GPI_BuffEn
16	PA6 *	I/O	GPIO_Output	GPO_TrInOut
17	PA7	I/O	ADC1_IN7	ADC_Uacc
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	
32	PA11	I/O	CAN_RX	
33	PA12	I/O	CAN_TX	
34	PA13	I/O	SYS_JTMS-SWDIO	SWDIO
35	VSS	Power		
36	VDD	Power		
37	PA14	I/O	SYS_JTCK-SWCLK	SWCLK
41	PB5 *	I/O	GPIO_Output	GPO_LedG
42	PB6 *	I/O	GPIO_Output	GPO_LedY
43	PB7 *	I/O	GPIO_Output	GPO_LedR
44	BOOT0	Boot		
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	Balance
Project Folder	D:_STM32_PROJECTS\Board_Balance_v10\Balance_v10\Balance
Toolchain / IDE	Other Toolchains (GPDSC)
Firmware Package Name and Version	STM32Cube FW_F1 V1.7.0

5.2. 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

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. ADC1

mode: IN0

mode: IN7

7.1.1. Parameter Settings:

ADCs_Common_Settings:

Mode	Independent mode

ADC_Settings:

Data Alignment	Right alignment
Scan Conversion Mode	Disabled
Continuous Conversion Mode	Disabled
Discontinuous Conversion Mode	Disabled

ADC_Regular_ConversionMode:

Enable Regular Conversions	Enable
Number Of Conversion	1
External Trigger Conversion Source	Regular Conversion launched by software
Rank	1
Channel	Channel 0
Sampling Time	1.5 Cycles

ADC_Injected_ConversionMode:

Number Of Conversions	0

WatchDog:

Enable Analog WatchDog Mode	false

7.2. CAN

mode: Mode

7.2.1. Parameter Settings:

Bit Timings Parameters:

Prescaler (for Time Quantum)	16
Time Quantum	**444.44444444444446 ***
Time Quanta in Bit Segment 1	1 Time
Time Quanta in Bit Segment 2	1 Time
Time for one Bit	**1333 ***
ReSynchronization Jump Width	1 Time

Basic Parameters:

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

Advanced Parameters:

Operating Mode	Normal

7.3. I2C2

I2C: I2C

7.3.1. 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

7.4. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

7.4.1. 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

7.5. SYS

Debug: Serial Wire

Timebase Source: SysTick

7.6. USART1

Mode: Asynchronous

7.6.1. 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
ADC1	PA0-WKUP	ADC1_IN0	Analog mode	n/a	n/a	ADC_Current
	PA7	ADC1_IN7	Analog mode	n/a	n/a	ADC_Uacc
CAN	PA11	CAN_RX	Input mode	No pull-up and no pull-down	n/a	
	PA12	CAN_TX	Alternate Function Push Pull	n/a	**High ***	
I2C2	PB10	I2C2_SCL	Alternate Function Open Drain	n/a	**High ***	
	PB11	I2C2_SDA	Alternate Function Open Drain	n/a	**High ***	
RCC	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	SWDIO
	PA14	SYS_JTCK-SWCLK	n/a	n/a	n/a	SWCLK
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_Output	Output Push Pull	No pull-up and no pull-down	Low	GPO_LedTest
	PA1	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	GPO_Gate1
	PA2	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	GPO_Gate2
	PA3	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	GPO_CSout
	PA4	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	GPI_CSin
	PA5	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	GPI_BuffEn
	PA6	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	GPO_TrInOut
	PB5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	GPO_LedG
	PB6	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	GPO_LedY
	PB7	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	GPO_LedR

8.2. DMA configuration

nothing configured in DMA service

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
USART1 global interrupt	true	0	0
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
ADC1 and ADC2 global interrupts	unused		
USB high priority or CAN TX interrupts	unused		
USB low priority or CAN RX0 interrupts	unused		
CAN RX1 interrupt	unused		
CAN SCE interrupt	unused		
I2C2 event interrupt	unused		
I2C2 error interrupt	unused		

*** User modified value**

9. Software Pack Report