1. Description

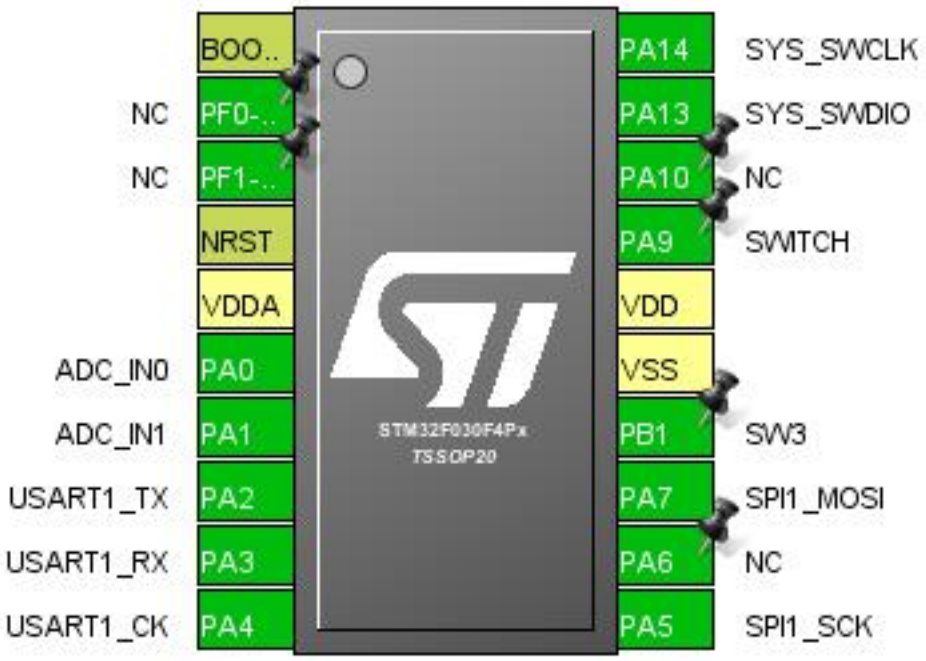
1.1. Project

Project Name	uCProject
Board Name	custom
Generated with:	STM32CubeMX 5.1.0
Date	08/09/2019

1.2. MCU

MCU Series	STM32F0
MCU Line	STM32F0x0 Value Line
MCU name	STM32F030F4Px
MCU Package	TSSOP20
MCU Pin number	20

2. Pinout Configuration

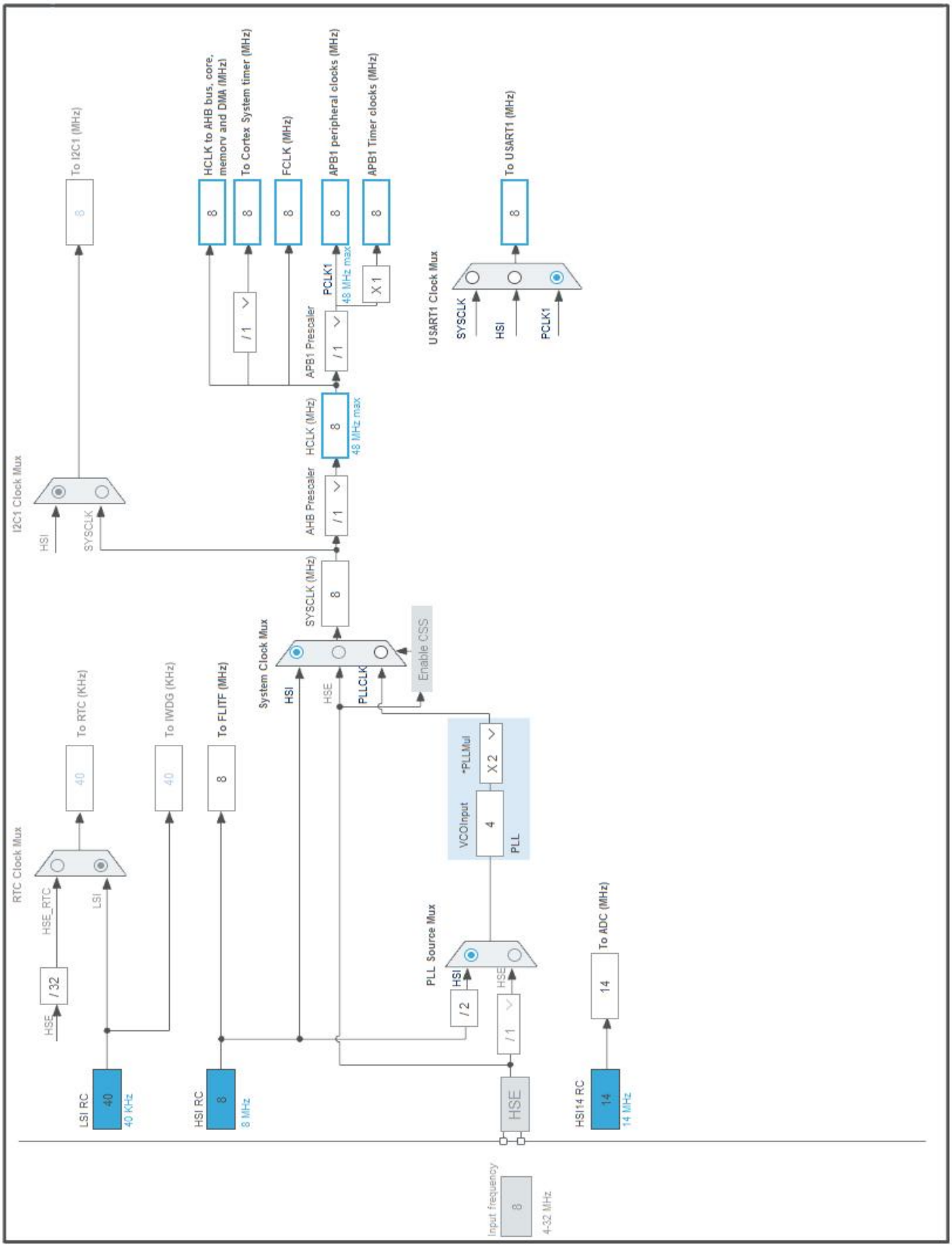


3. Pins Configuration

Pin Number TSSOP20	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	BOOT0	Boot		
2	PF0-OSC_IN *	I/O	GPIO_Input	NC
3	PF1-OSC_OUT *	I/O	GPIO_Input	NC
4	NRST	Reset		
5	VDDA	Power		
6	PA0	I/O	ADC_IN0	
7	PA1	I/O	ADC_IN1	
8	PA2	I/O	USART1_TX	
9	PA3	I/O	USART1_RX	
10	PA4	I/O	USART1_CK	
11	PA5	I/O	SPI1_SCK	
12	PA6 *	I/O	GPIO_Input	NC
13	PA7	I/O	SPI1_MOSI	
14	PB1 *	I/O	GPIO_Input	SW3
15	VSS	Power		
16	VDD	Power		
17	PA9 *	I/O	GPIO_Input	SWITCH
18	PA10 *	I/O	GPIO_Input	NC
19	PA13	I/O	SYS_SWDIO	
20	PA14	I/O	SYS_SWCLK	

* The pin is affected with an I/O function

4. Clock Tree Configuration



5. Software Project

5.1. Project Settings

Name	Value
Project Name	uCProject
Project Folder	C:\altium-projects\frm-voltrod\uCProject
Toolchain / IDE	EWARM V8
Firmware Package Name and Version	STM32Cube FW_F0 V1.9.0

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	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	STM32F0
Line	STM32F0x0 Value Line
MCU	STM32F030F4Px
Datasheet	024849_Rev2

6.2. Parameter Selection

Temperature	25
Vdd	3.6

7. IPs and Middleware Configuration

7.1. ADC

mode: IN0

mode: IN1

7.1.1. Parameter Settings:

ADC_Settings:

Clock Prescaler	Asynchronous clock mode
Resolution	ADC 12-bit resolution
Data Alignment	Right alignment
Scan Conversion Mode	Forward
Continuous Conversion Mode	Disabled
Discontinuous Conversion Mode	Disabled
DMA Continuous Requests	Disabled
End Of Conversion Selection	End of single conversion
Overrun behaviour	Overrun data preserved
Low Power Auto Wait	Disabled
Low Power Auto Power Off	Disabled

ADC_Regular_ConversionMode:

Sampling Time	1.5 Cycles
External Trigger Conversion Source	Regular Conversion launched by software
External Trigger Conversion Edge	None

WatchDog:

Enable Analog WatchDog Mode	false

7.2. RCC

7.2.1. Parameter Settings:

System Parameters:

VDD voltage (V)	3.3
Prefetch Buffer	Enabled
Flash Latency(WS)	0 WS (1 CPU cycle)

RCC Parameters:

HSI Calibration Value	16
HSI14 Calibration Value	16
HSE Startup Timout Value (ms)	100
LSE Startup Timout Value (ms)	5000

7.3. SPI1

Mode: Transmit Only Master

7.3.1. Parameter Settings:

Basic Parameters:

Frame Format	Motorola
Data Size	4 Bits
First Bit	MSB First

Clock Parameters:

Prescaler (for Baud Rate)	2
Baud Rate	**4.0 MBits/s ***
Clock Polarity (CPOL)	Low
Clock Phase (CPHA)	1 Edge

Advanced Parameters:

CRC Calculation	Disabled
NSSP Mode	Enabled
NSS Signal Type	Software

7.4. SYS

mode: Debug Serial Wire

Timebase Source: SysTick

7.5. USART1

Mode: Synchronous

7.5.1. 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

Clock Parameters:

Clock Polarity	Low

Clock Phase	One Edge
Clock Last Bit	Disable

*** User modified value**

8. System Configuration

8.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
ADC	PA0	ADC_IN0	Analog mode	No pull-up and no pull-down	n/a	
	PA1	ADC_IN1	Analog mode	No pull-up and no pull-down	n/a	
SPI1	PA5	SPI1_SCK	Alternate Function Push Pull	No pull-up and no pull-down	**High ***	
	PA7	SPI1_MOSI	Alternate Function Push Pull	No pull-up and no pull-down	**High ***	
SYS	PA13	SYS_SWDIO	n/a	n/a	n/a	
	PA14	SYS_SWCLK	n/a	n/a	n/a	
USART1	PA2	USART1_TX	Alternate Function Push Pull	No pull-up and no pull-down	**High ***	
	PA3	USART1_RX	Alternate Function Push Pull	No pull-up and no pull-down	**High ***	
	PA4	USART1_CK	Alternate Function Push Pull	No pull-up and no pull-down	**High ***	
GPIO	PF0-OSC_IN	GPIO_Input	Input mode	**Pull-up ***	n/a	NC
	PF1-OSC_OUT	GPIO_Input	Input mode	**Pull-up ***	n/a	NC
	PA6	GPIO_Input	Input mode	**Pull-up ***	n/a	NC
	PB1	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	SW3
	PA9	GPIO_Input	Input mode	**Pull-up ***	n/a	SWITCH
	PA10	GPIO_Input	Input mode	**Pull-up ***	n/a	NC

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
System service call via SWI instruction	true	0	0
Pendable request for system service	true	0	0
System tick timer	true	0	0
Flash global interrupt	unused		
RCC global interrupt	unused		
ADC interrupt	unused		
SPI1 global interrupt	unused		
USART1 global interrupt	unused		

*** User modified value**

9. Software Pack Report