1. Description

1.1. Project

Project Name	STM32F031G4U6
Board Name	No information
Generated with:	STM32CubeMX 4.22.0
Date	05/02/2018

1.2. MCU

| MCU Series	STM32F0
MCU Line	STM32F0x1
MCU name	STM32F031G4Ux
MCU Package	UFQFPN28
MCU Pin number	28

2. Pinout Configuration
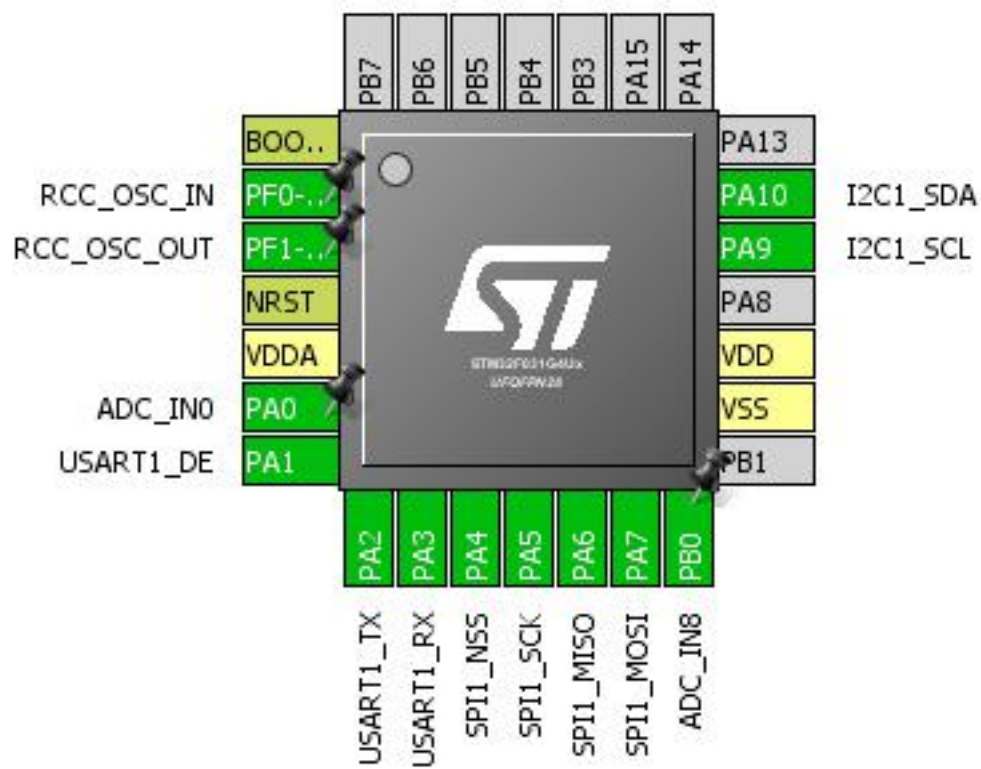
3. Pins Configuration

Pin Number UFQFPN28	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	BOOT0	Boot		
2	PF0-OSC_IN	I/O	RCC_OSC_IN	
3	PF1-OSC_OUT	I/O	RCC_OSC_OUT	
4	NRST	Reset		
5	VDDA	Power		
6	PA0	I/O	ADC_IN0	
7	PA1	I/O	USART1_DE	
8	PA2	I/O	USART1_TX	
9	PA3	I/O	USART1_RX	
10	PA4	I/O	SPI1_NSS	
11	PA5	I/O	SPI1_SCK	
12	PA6	I/O	SPI1_MISO	
13	PA7	I/O	SPI1_MOSI	
14	PB0	I/O	ADC_IN8	
16	VSS	Power		
17	VDD	Power		
19	PA9	I/O	I2C1_SCL	
20	PA10	I/O	I2C1_SDA	

4. Clock Tree Configuration
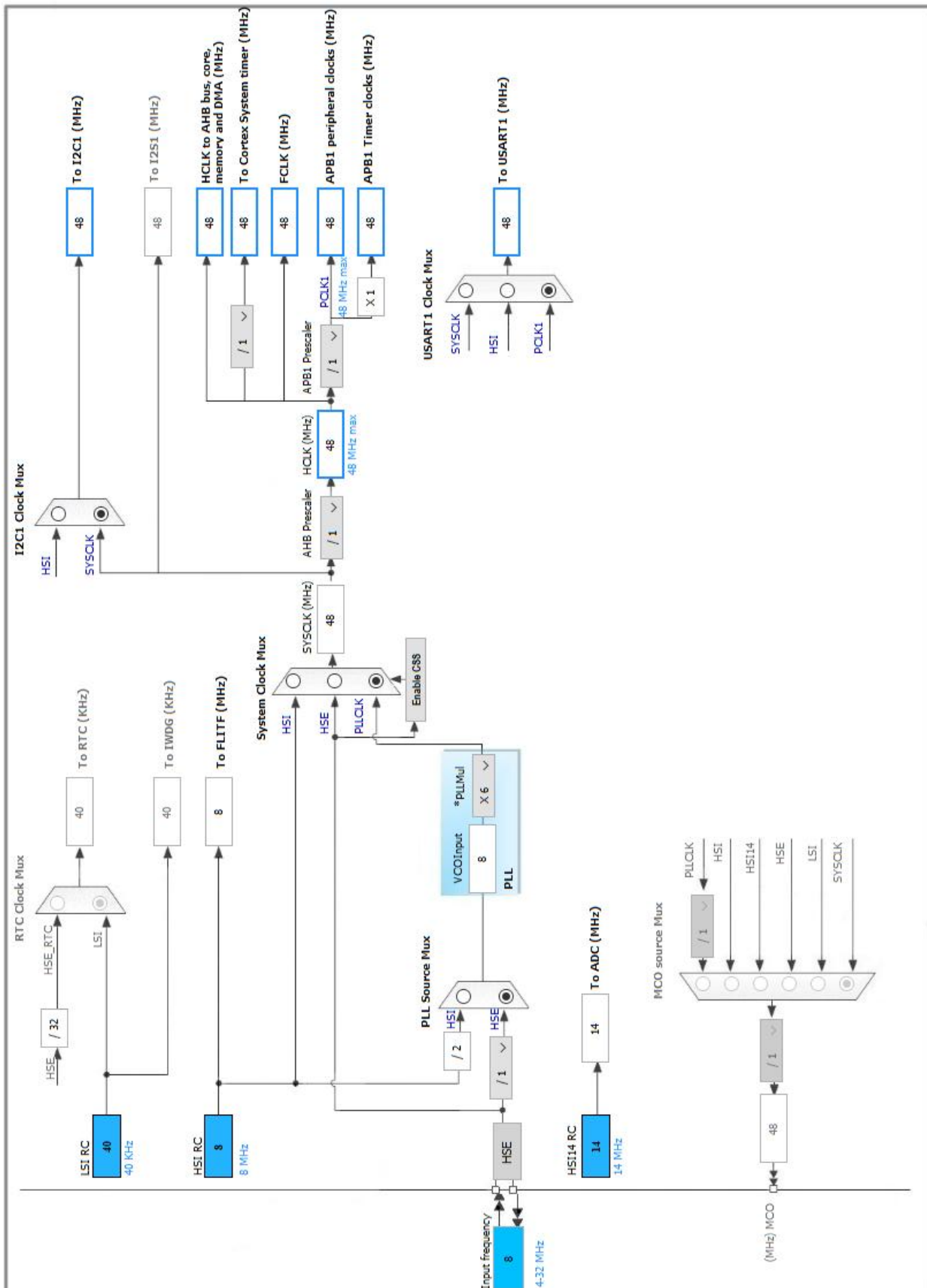
5. IPs and Middleware Configuration

5.1. ADC
mode: IN0
mode: IN8

5.1.1. 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

5.2. I2C1
I2C: I2C

5.2.1. Parameter Settings:

Timing configuration:

I2C Speed Mode	Standard Mode
I2C Speed Frequency (KHz)	100
Rise Time (ns)	0
Fall Time (ns)	0

Coefficient of Digital Filter	0
Analog Filter	Enabled
Timing	**0x20303E5D ***

Slave Features:

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

5.3. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

5.3.1. Parameter Settings:

System Parameters:

VDD voltage (V)	3.3
Prefetch Buffer	Enabled
Flash Latency(WS)	1 WS (2 CPU cycle)

RCC Parameters:

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

5.4. SPI1

Mode: Full-Duplex Slave
Hardware NSS Signal: Hardware NSS Input Signal

5.4.1. Parameter Settings:

Basic Parameters:

Frame Format	Motorola
Data Size	4 Bits
First Bit	MSB First

Clock Parameters:

Clock Polarity (CPOL)	Low

Clock Phase (CPHA)	1 Edge

Advanced Parameters:

CRC Calculation	Disabled
NSS Signal Type	Input Hardware

5.5. SYS

Timebase Source: SysTick

5.6. USART1

Mode: Asynchronous

mode: Hardware Flow Control (RS485)

5.6.1. 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
Single Sample	Disable
Polarity	High
Assertion Time	0
Deassertion Time	0

Advanced Features:

Auto Baudrate	Disable
TX Pin Active Level Inversion	Disable
RX Pin Active Level Inversion	Disable
Data Inversion	Disable
TX and RX Pins Swapping	Disable
Overrun	Enable
DMA on RX Error	Enable
MSB First	Disable

* User modified value

6. System Configuration

6.1. 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	
	PB0	ADC_IN8	Analog mode	No pull-up and no pull-down	n/a	
I2C1	PA9	I2C1_SCL	Alternate Function Open Drain	Pull-up	**High ***	
	PA10	I2C1_SDA	Alternate Function Open Drain	Pull-up	**High ***	
RCC	PF0-OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	
	PF1-OSC_OUT	RCC_OSC_OUT	n/a	n/a	n/a	
SPI1	PA4	SPI1_NSS	Alternate Function Push Pull	No pull-up and no pull-down	**High ***	
	PA5	SPI1_SCK	Alternate Function Push Pull	No pull-up and no pull-down	**High ***	
	PA6	SPI1_MISO	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 ***	
USART1	PA1	USART1_DE	Alternate Function Push Pull	No pull-up and no pull-down	**High ***	
	PA2	USART1_TX	Alternate Function Push Pull	Pull-up	**High ***	
	PA3	USART1_RX	Alternate Function Push Pull	Pull-up	**High ***	

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
System service call via SWI instruction	true	0	0
Pendable request for system service	true	0	0
System tick timer	true	0	0
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
ADC interrupt	unused		
I2C1 event global interrupt / I2C1 wake-up interrupt through EXTI line 23	unused		
SPI1 global interrupt	unused		
USART1 global interrupt / USART1 wake-up interrupt through EXTI line 25	unused		

* User modified value

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32F0
Line	STM32F0x1
MCU	STM32F031G4Ux
Datasheet	025743_Rev4

7.2. Parameter Selection

Temperature	25
Vdd	3.6