

1. Description

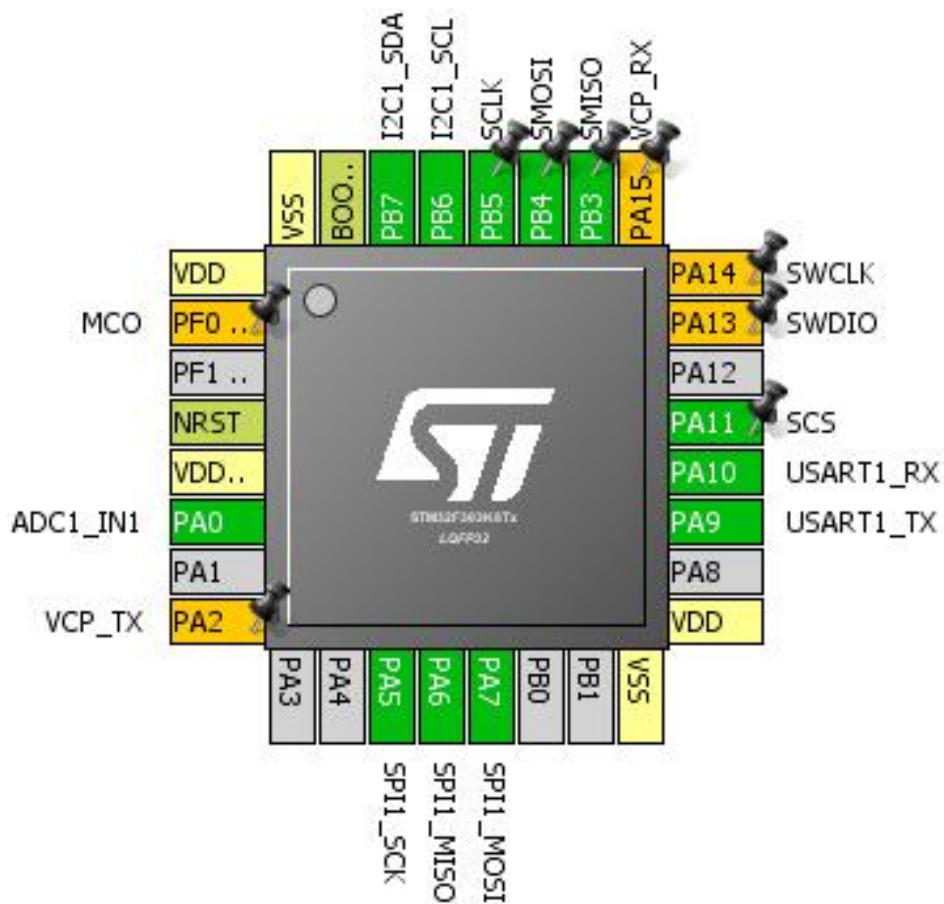
1.1. Project

Project Name	STM32F303_GPIO_SD1
Board Name	NUCLEO-F303K8
Generated with:	STM32CubeMX 4.17.0
Date	11/19/2016

1.2. MCU

MCU Series	STM32F3
MCU Line	STM32F303
MCU name	STM32F303K8Tx
MCU Package	LQFP32
MCU Pin number	32

2. Pinout Configuration



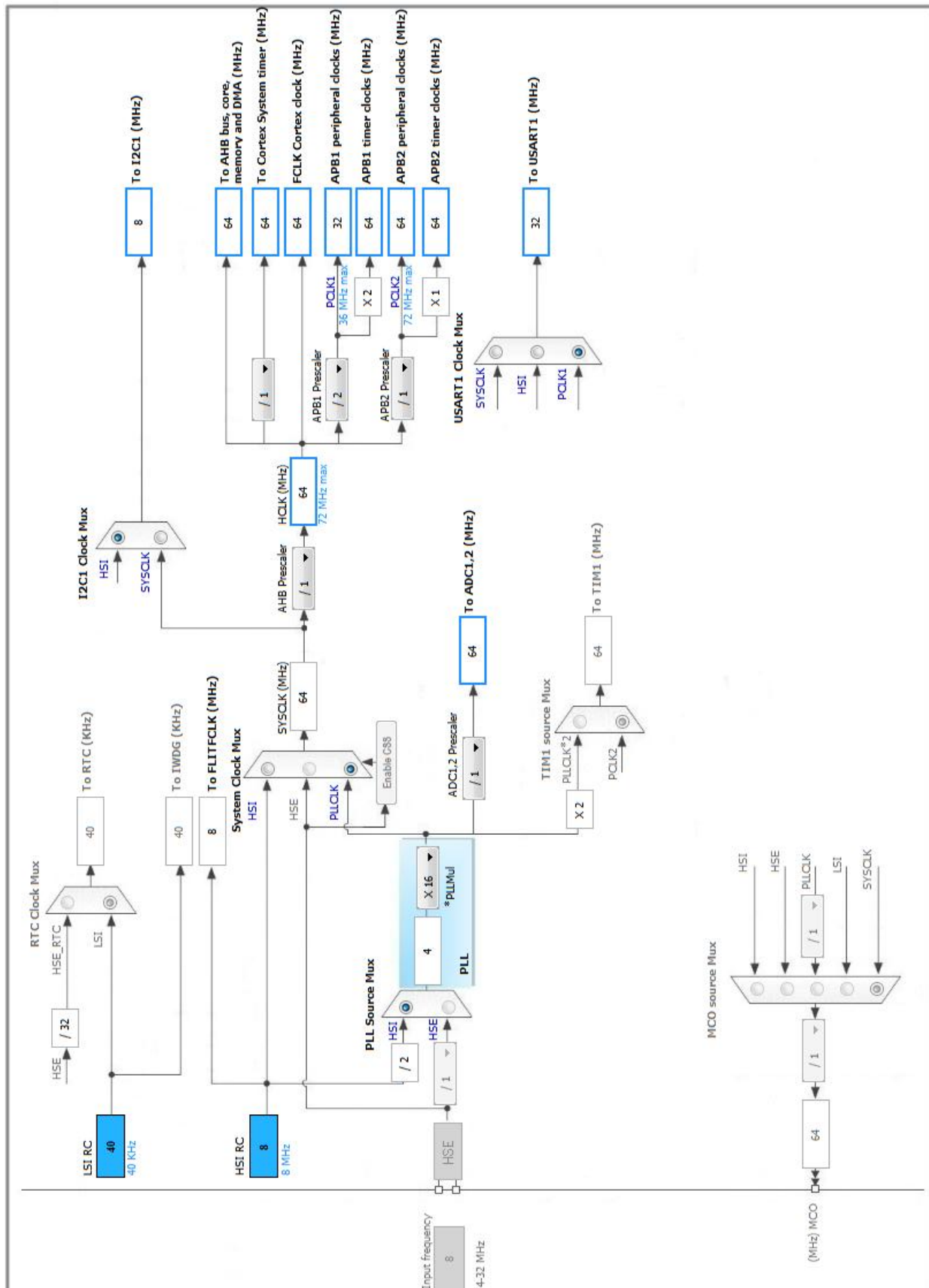
3. Pins Configuration

Pin Number LQFP32	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VDD	Power		
2	PF0 / OSC_IN *	I/O	RCC_OSC_IN	MCO
4	NRST	Reset		
5	VDDA/VREF+	Power		
6	PA0	I/O	ADC1_IN1	
8	PA2 *	I/O	USART2_TX	VCP_TX
11	PA5	I/O	SPI1_SCK	
12	PA6	I/O	SPI1_MISO	
13	PA7	I/O	SPI1_MOSI	
16	VSS	Power		
17	VDD	Power		
19	PA9	I/O	USART1_TX	
20	PA10	I/O	USART1_RX	
21	PA11 **	I/O	GPIO_Output	SCS
23	PA13 *	I/O	SYS_JTMS-SWDIO	SWDIO
24	PA14 *	I/O	SYS_JTCK-SWCLK	SWCLK
25	PA15 *	I/O	USART2_RX	VCP_RX
26	PB3 **	I/O	GPIO_Input	SMISO
27	PB4 **	I/O	GPIO_Output	SMOSI
28	PB5 **	I/O	GPIO_Output	SCLK
29	PB6	I/O	I2C1_SCL	
30	PB7	I/O	I2C1_SDA	
31	BOOT0	Boot		
32	VSS	Power		

** The pin is affected with an I/O function

* The pin is affected with a peripheral function but no peripheral mode is activated

4. Clock Tree Configuration



5. IPs and Middleware Configuration

5.1. ADC1

IN1: IN1 Single-ended

5.1.1. Parameter Settings:

ADCs_Common_Settings:

Mode Independent mode

ADC_Settings:

Clock Prescaler ADC Asynchronous clock mode

Resolution ADC 12-bit resolution

Data Alignment Right alignment

Scan Conversion Mode Disabled

Continuous Conversion Mode Disabled

Discontinuous Conversion Mode Disabled

DMA Continuous Requests Disabled

End Of Conversion Selection End of single conversion

Overrun behaviour Overrun data overwritten

Low Power Auto Wait Disabled

ADC_Regular_ConversionMode:

Enable Regular Conversions Enable

Number Of Conversion 1

External Trigger Conversion Edge None

Rank 1

Channel Channel 1

Sampling Time 1.5 Cycles

Offset Number No offset

Offset 0

ADC_Injected_ConversionMode:

Enable Injected Conversions Enable

Number Of Conversions 0

Analog Watchdog 1:

Enable Analog WatchDog1 Mode false

Analog Watchdog 2:

Enable Analog WatchDog2 Mode false

Analog Watchdog 3:

Enable Analog WatchDog3 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	0x2000090E

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. SPI1

Mode: Full-Duplex Master

5.3.1. Parameter Settings:

Basic Parameters:

Frame Format	Motorola
Data Size	4 Bits
First Bit	MSB First

Clock Parameters:

Prescaler (for Baud Rate)	16 *
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

5.4. SYS

Timebase Source: SysTick

5.5. USART1

Mode: Asynchronous

5.5.1. Parameter Settings:

Basic Parameters:

Baud Rate	9600 *
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

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
ADC1	PA0	ADC1_IN1	Analog mode	No pull up pull down	n/a	
I2C1	PB6	I2C1_SCL	Alternate Function Open Drain	Pull up	High *	
	PB7	I2C1_SDA	Alternate Function Open Drain	Pull up	High *	
SPI1	PA5	SPI1_SCK	Alternate Function Push Pull	No pull up pull down	High *	
	PA6	SPI1_MISO	Alternate Function Push Pull	No pull up pull down	High *	
	PA7	SPI1_MOSI	Alternate Function Push Pull	No pull up pull down	High *	
USART1	PA9	USART1_TX	Alternate Function Push Pull	Pull up	High *	
	PA10	USART1_RX	Alternate Function Push Pull	Pull up	High *	
Single Mapped Signals	PF0 / OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	MCO
	PA2	USART2_TX	Alternate Function Push Pull	No pull up pull down	High *	VCP_TX
	PA13	SYS_JTMS-SWDIO	n/a	n/a	n/a	SWDIO
	PA14	SYS_JTCK-SWCLK	n/a	n/a	n/a	SWCLK
	PA15	USART2_RX	Alternate Function Push Pull	No pull up pull down	High *	VCP_RX
GPIO	PA11	GPIO_Output	Output Push Pull	Pull up *	High *	SCS
	PB3	GPIO_Input	Input mode	Pull up *	n/a	SMISO
	PB4	GPIO_Output	Output Push Pull	Pull up *	High *	SMOSI
	PB5	GPIO_Output	Output Push Pull	Pull up *	High *	SCLK

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
Memory management fault	true	0	0
Pre-fetch 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
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
ADC1 and ADC2 interrupts	unused		
I2C1 event global interrupt / I2C1 wake-up interrupt through EXT line 23	unused		
I2C1 error interrupt	unused		
SPI1 global interrupt	unused		
USART1 global interrupt / USART1 wake-up interrupt through EXT line 25	unused		
Floating point unit interrupt	unused		

* User modified value

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32F3
Line	STM32F303
MCU	STM32F303K8Tx
Datasheet	025083_Rev4

7.2. Parameter Selection

Temperature	25
Vdd	3.6

8. Software Project

8.1. Project Settings

Name	Value
Project Name	STM32F303_GPIO_SD1
Project Folder	C:\Users\stern\workspace\STM32F303_GPIO_SD1
Toolchain / IDE	SW4STM32
Firmware Package Name and Version	STM32Cube FW_F3 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	No
Backup previously generated files when re-generating	Yes
Delete previously generated files when not re-generated	Yes
Set all free pins as analog (to optimize the power consumption)	No