

1. Description

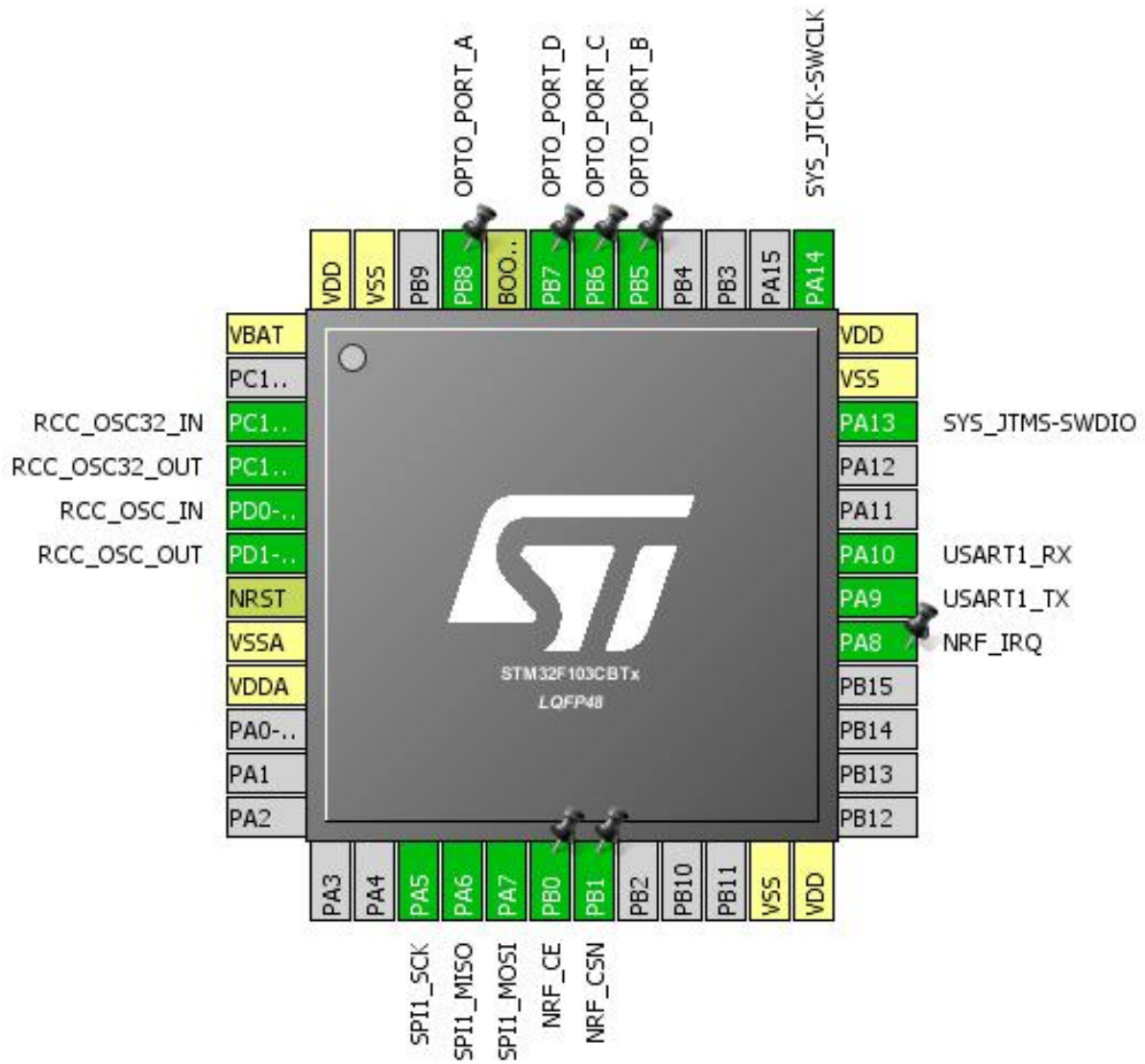
1.1. Project

Project Name	SMRR_F103_MX
Board Name	SMRR_F103_MX
Generated with:	STM32CubeMX 4.25.0
Date	05/24/2018

1.2. MCU

MCU Series	STM32F1
MCU Line	STM32F103
MCU name	STM32F103CBTx
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		
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		
15	PA5	I/O	SPI1_SCK	
16	PA6	I/O	SPI1_MISO	
17	PA7	I/O	SPI1_MOSI	
18	PB0 *	I/O	GPIO_Output	NRF_CE
19	PB1 *	I/O	GPIO_Output	NRF_CSN
23	VSS	Power		
24	VDD	Power		
29	PA8 *	I/O	GPIO_Input	NRF_IRQ
30	PA9	I/O	USART1_TX	
31	PA10	I/O	USART1_RX	
34	PA13	I/O	SYS_JTMS-SWDIO	
35	VSS	Power		
36	VDD	Power		
37	PA14	I/O	SYS_JTCK-SWCLK	
41	PB5 *	I/O	GPIO_Output	OPTO_PORT_B
42	PB6 *	I/O	GPIO_Output	OPTO_PORT_C
43	PB7 *	I/O	GPIO_Output	OPTO_PORT_D
44	BOOT0	Boot		
45	PB8 *	I/O	GPIO_Output	OPTO_PORT_A
47	VSS	Power		
48	VDD	Power		

* The pin is affected with an I/O function

5. IPs and Middleware Configuration

5.1. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

Low Speed Clock (LSE) : Crystal/Ceramic Resonator

5.1.1. 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 Timeout Value (ms)	100
LSE Startup Timeout Value (ms)	5000

5.2. SPI1

Mode: Full-Duplex Master

5.2.1. Parameter Settings:

Basic Parameters:

Frame Format	Motorola
Data Size	8 Bits
First Bit	MSB First

Clock Parameters:

Prescaler (for Baud Rate)	8 *
Baud Rate	9.0 MBits/s *
Clock Polarity (CPOL)	Low
Clock Phase (CPHA)	1 Edge

Advanced Parameters:

CRC Calculation	Disabled
NSS Signal Type	Software

5.3. SYS

Debug: Serial Wire

Timebase Source: SysTick

5.4. USART1

Mode: Asynchronous

5.4.1. 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

6. System Configuration

6.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
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	
SPI1	PA5	SPI1_SCK	Alternate Function Push Pull	n/a	High *	
	PA6	SPI1_MISO	Input mode	No pull-up and no pull-down	n/a	
	PA7	SPI1_MOSI	Alternate Function Push Pull	n/a	High *	
SYS	PA13	SYS_JTMS-SWDIO	n/a	n/a	n/a	
	PA14	SYS_JTCK-SWCLK	n/a	n/a	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	PB0	GPIO_Output	Output Push Pull	n/a	Low	NRF_CE
	PB1	GPIO_Output	Output Push Pull	n/a	Low	NRF_CSN
	PA8	GPIO_Input	Input mode	Pull-up *	n/a	NRF_IRQ
	PB5	GPIO_Output	Output Push Pull	n/a	Low	OPTO_PORT_B
	PB6	GPIO_Output	Output Push Pull	n/a	Low	OPTO_PORT_C
	PB7	GPIO_Output	Output Push Pull	n/a	Low	OPTO_PORT_D
	PB8	GPIO_Output	Output Push Pull	n/a	Low	OPTO_PORT_A

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
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
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
SPI1 global interrupt	unused		
USART1 global interrupt	unused		

* User modified value

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32F1
Line	STM32F103
MCU	STM32F103CBTx
Datasheet	13587_Rev17

7.2. Parameter Selection

Temperature	25
Vdd	3.3

8. Software Project

8.1. Project Settings

Name	Value
Project Name	SMRR_F103_MX
Project Folder	C:\Work\STM32_workspace_9.0\SMRR_F103_MX\SMRR_F103_MX
Toolchain / IDE	TrueSTUDIO
Firmware Package Name and Version	STM32Cube FW_F1 V1.6.1

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	No
Delete previously generated files when not re-generated	Yes
Set all free pins as analog (to optimize the power consumption)	Yes

9. Software Pack Report