

1. Description

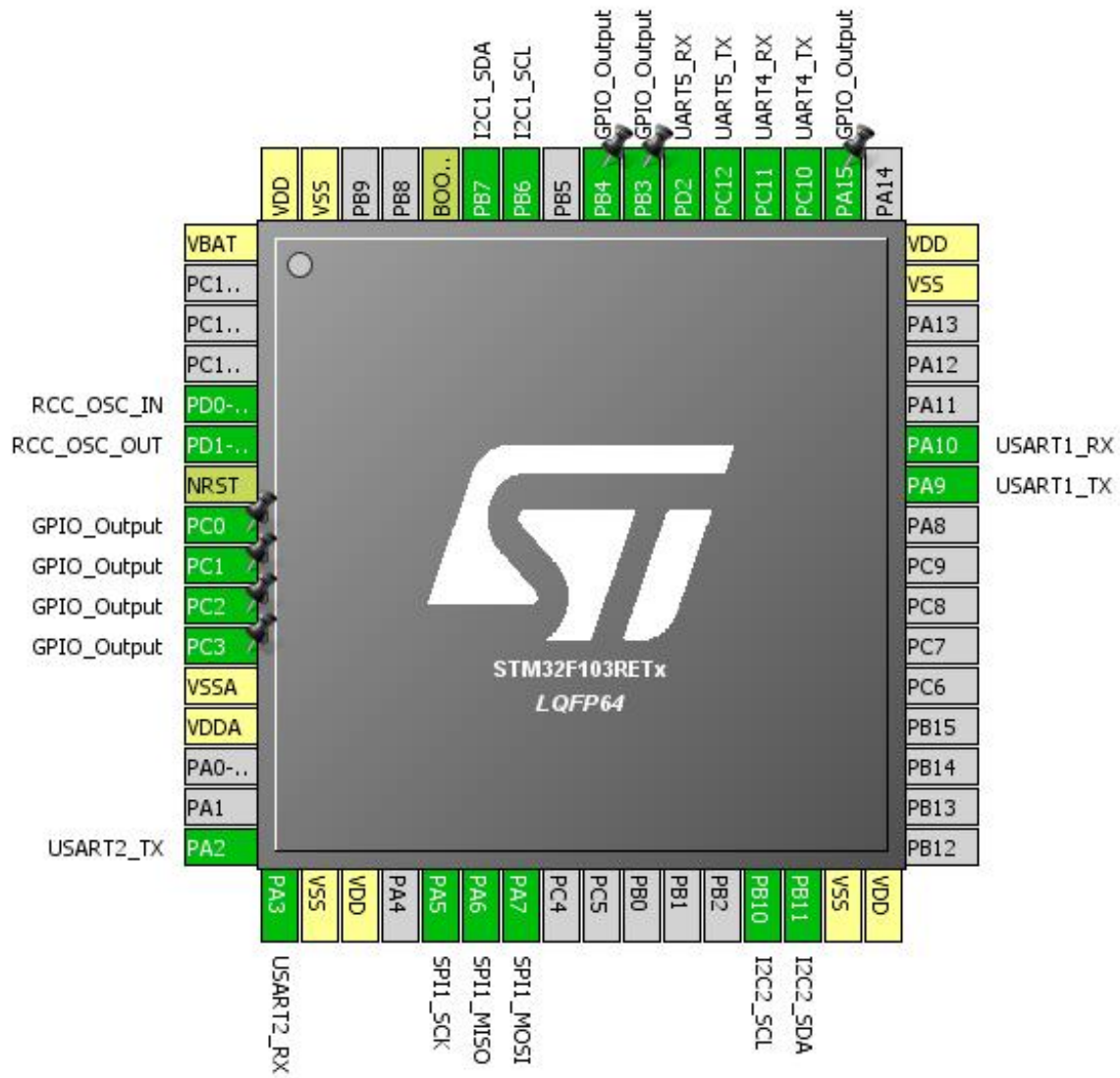
1.1. Project

Project Name	sen_rX_TX_interrupt
Board Name	sen_rX_TX_interrupt
Generated with:	STM32CubeMX 4.11.0
Date	11/07/2021

1.2. MCU

MCU Series	STM32F1
MCU Line	STM32F103
MCU name	STM32F103RETx
MCU Package	LQFP64
MCU Pin number	64

2. Pinout Configuration



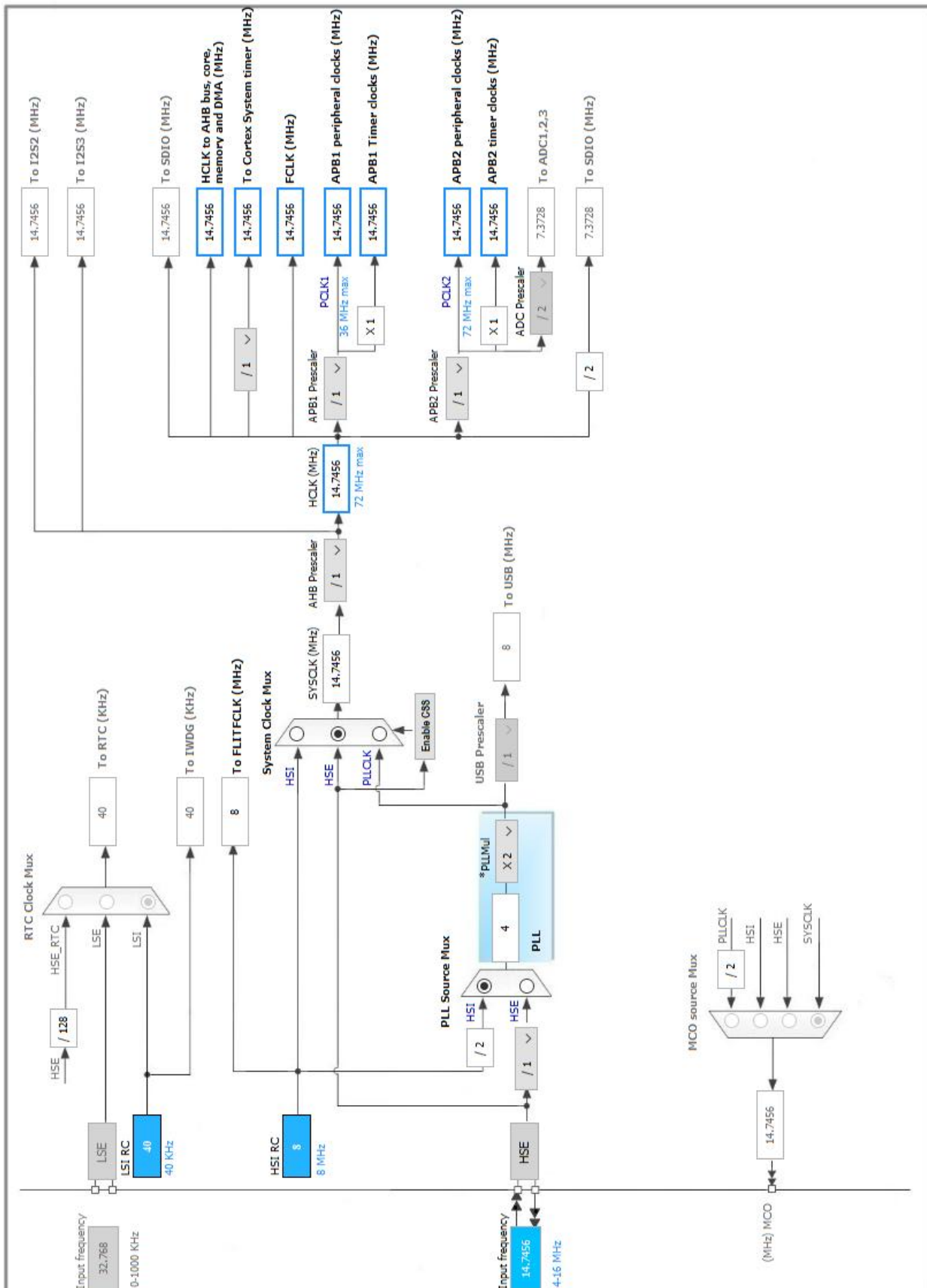
3. Pins Configuration

Pin Number LQFP64	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VBAT	Power		
5	PD0-OSC_IN	I/O	RCC_OSC_IN	
6	PD1-OSC_OUT	I/O	RCC_OSC_OUT	
7	NRST	Reset		
8	PC0 *	I/O	GPIO_Output	
9	PC1 *	I/O	GPIO_Output	
10	PC2 *	I/O	GPIO_Output	
11	PC3 *	I/O	GPIO_Output	
12	VSSA	Power		
13	VDDA	Power		
16	PA2	I/O	USART2_TX	
17	PA3	I/O	USART2_RX	
18	VSS	Power		
19	VDD	Power		
21	PA5	I/O	SPI1_SCK	
22	PA6	I/O	SPI1_MISO	
23	PA7	I/O	SPI1_MOSI	
29	PB10	I/O	I2C2_SCL	
30	PB11	I/O	I2C2_SDA	
31	VSS	Power		
32	VDD	Power		
42	PA9	I/O	USART1_TX	
43	PA10	I/O	USART1_RX	
47	VSS	Power		
48	VDD	Power		
50	PA15 *	I/O	GPIO_Output	
51	PC10	I/O	UART4_TX	
52	PC11	I/O	UART4_RX	
53	PC12	I/O	UART5_TX	
54	PD2	I/O	UART5_RX	
55	PB3 *	I/O	GPIO_Output	
56	PB4 *	I/O	GPIO_Output	
58	PB6	I/O	I2C1_SCL	
59	PB7	I/O	I2C1_SDA	
60	BOOT0	Boot		
63	VSS	Power		

Pin Number LQFP64	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
64	VDD	Power		

* The pin is affected with an I/O function

4. Clock Tree Configuration



5. IPs and Middleware Configuration

5.1. I2C1

I2C: I2C

5.1.1. 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

5.2. I2C2

I2C: I2C

5.2.1. 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

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)	0 WS (1 CPU cycle)

RCC Parameters:

HSI Calibration Value	16
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5.4. SPI1

Mode: Full-Duplex Master

5.4.1. Parameter Settings:

Basic Parameters:

Frame Format	Motorola
Data Size	8 Bits
First Bit	MSB First

Clock Parameters:

Prescaler (for Baud Rate)	128 *
Baud Rate	115.2 KBits/s *
Clock Polarity (CPOL)	Low
Clock Phase (CPHA)	1 Edge

Advanced Parameters:

CRC Calculation	Disabled
NSS Signal Type	Software

5.5. TIM2

Clock Source : Internal Clock

5.5.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	799 *
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	1843 *
Internal Clock Division (CKD)	No Division
Trigger Output (TRGO) Parameters:	
Master/Slave Mode	Disable (no sync between this TIM (Master) and its Slaves
Trigger Event Selection	Reset (UG bit from TIMx_EGR)

5.6. UART4

Mode: Asynchronous

5.6.1. 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

5.7. UART5

Mode: Asynchronous

5.7.1. 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

5.8. USART1

Mode: Asynchronous

5.8.1. 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

5.9. USART2

Mode: Asynchronous

5.9.1. 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
I2C1	PB6	I2C1_SCL	Alternate Function Open Drain	n/a	High *	
	PB7	I2C1_SDA	Alternate Function Open Drain	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	
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 *	
UART4	PC10	UART4_TX	Alternate Function Push Pull	n/a	High *	
	PC11	UART4_RX	Input mode	Pull-up *	n/a	
UART5	PC12	UART5_TX	Alternate Function Push Pull	n/a	High *	
	PD2	UART5_RX	Input mode	Pull-up *	n/a	
USART1	PA9	USART1_TX	Alternate Function Push Pull	n/a	High *	
	PA10	USART1_RX	Input mode	Pull-up *	n/a	
USART2	PA2	USART2_TX	Alternate Function Push Pull	n/a	High *	
	PA3	USART2_RX	Input mode	Pull-up *	n/a	
GPIO	PC0	GPIO_Output	Output Push Pull	n/a	Low	
	PC1	GPIO_Output	Output Push Pull	n/a	Low	
	PC2	GPIO_Output	Output Push Pull	n/a	Low	
	PC3	GPIO_Output	Output Push Pull	n/a	Low	
	PA15	GPIO_Output	Output Push Pull	n/a	Low	
	PB3	GPIO_Output	Output Push Pull	n/a	High *	
	PB4	GPIO_Output	Output Push Pull	n/a	Low	

6.2. DMA configuration

nothing configured in DMA service

6.3. NVIC configuration

Interrupt Table	Enable	Preenmption Priority	SubPriority
System tick timer	true	0	0
TIM2 global interrupt	true	0	0
I2C2 event interrupt	true	4	0
SPI1 global interrupt	true	6	0
USART1 global interrupt	true	0	0
UART4 global interrupt	true	1	0
UART5 global interrupt	true	2	0
Non maskable interrupt	unused		
Memory management fault	unused		
Prefetch fault, memory access fault	unused		
Undefined instruction or illegal state	unused		
Debug monitor	unused		
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
I2C1 event interrupt	unused		
I2C1 error interrupt	unused		
I2C2 error interrupt	unused		
USART2 global interrupt	unused		

* User modified value

7. Power Plugin report

7.1. Microcontroller Selection

Series	STM32F1
Line	STM32F103
MCU	STM32F103RETx
Datasheet	14611_Rev11

7.2. Parameter Selection

Temperature	25
Vdd	3.3

8. Software Project

8.1. Project Settings

Name	Value
Project Name	sen_rX_TX_interrupt
Project Folder	C:\Users\user\Desktop\main_board_git_ignore
Toolchain / IDE	EWARM
Firmware Package Name and Version	STM32Cube FW_F1 V1.2.0

8.2. 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