1. Description

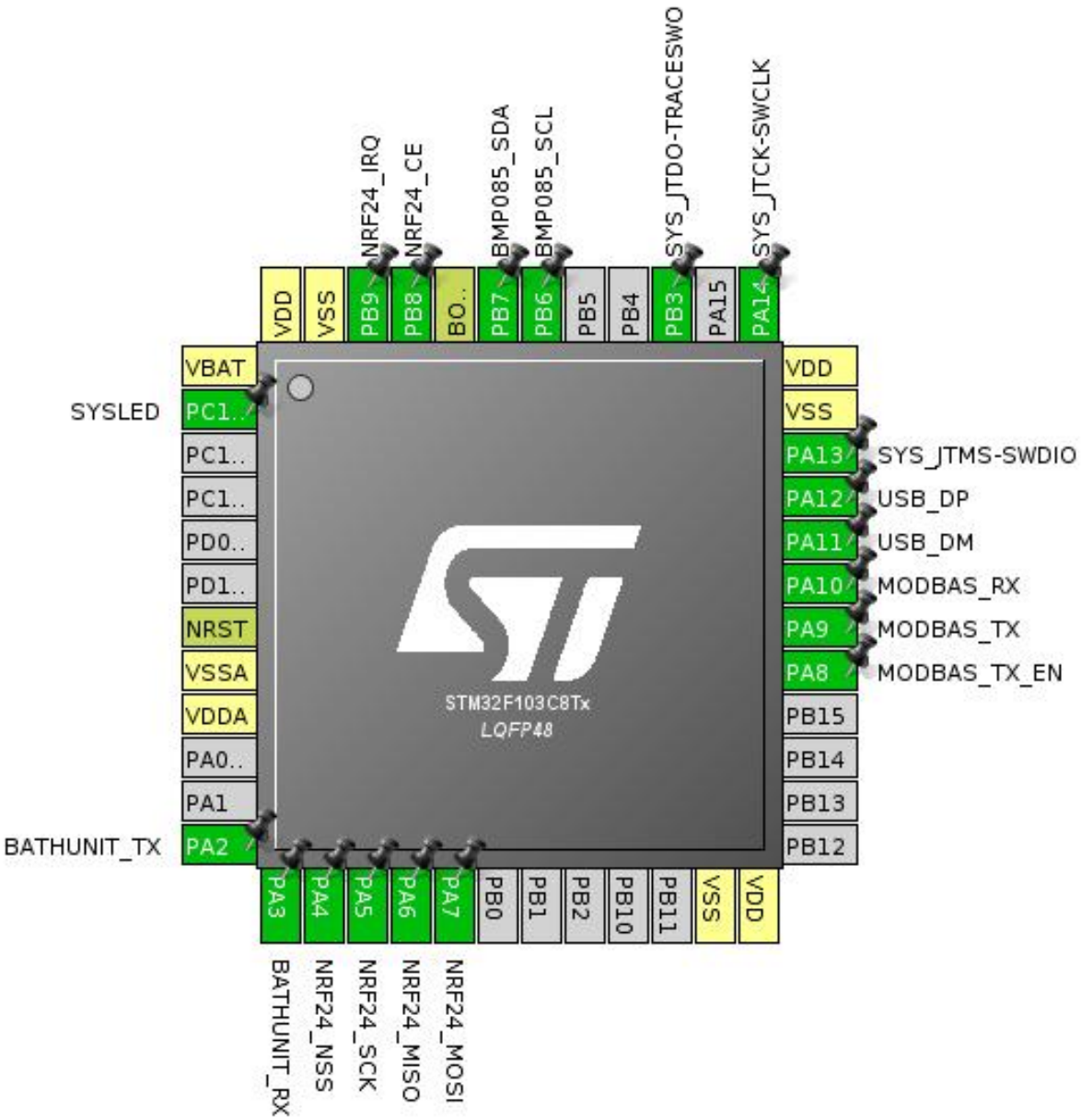
1.1. Project

Project Name	sensor-server-lqfp48
Board Name	No information
Generated with:	STM32CubeMX 4.9.0
Date	08/05/2015

1.2. MCU

MCU Series	STM32F1
MCU Line	STM32F103
MCU name	STM32F103C8Tx
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		
2	PC13-TAMPER-RTC *	I/O	GPIO_Output	SYSLED
7	NRST	Reset		
8	VSSA	Power		
9	VDDA	Power		
12	PA2	I/O	USART2_TX	BATHUNIT_TX
13	PA3	I/O	USART2_RX	BATHUNIT_RX
14	PA4	I/O	SPI1_NSS	NRF24_NSS
15	PA5	I/O	SPI1_SCK	NRF24_SCK
16	PA6	I/O	SPI1_MISO	NRF24_MISO
17	PA7	I/O	SPI1_MOSI	NRF24_MOSI
23	VSS	Power		
24	VDD	Power		
29	PA8 *	I/O	GPIO_Output	MODBAS_TX_EN
30	PA9	I/O	USART1_TX	MODBAS_TX
31	PA10	I/O	USART1_RX	MODBAS_RX
32	PA11	I/O	USB_DM	
33	PA12	I/O	USB_DP	
34	PA13	I/O	SYS_JTMS-SWDIO	
35	VSS	Power		
36	VDD	Power		
37	PA14	I/O	SYS_JTCK-SWCLK	
39	PB3	I/O	SYS_JTDO-TRACESWO	
42	PB6	I/O	I2C1_SCL	BMP085_SCL
43	PB7	I/O	I2C1_SDA	BMP085_SDA
44	BOOT0	Boot		
45	PB8 *	I/O	GPIO_Output	NRF24_CE
46	PB9 *	I/O	GPIO_Input	NRF24_IRQ
47	VSS	Power		
48	VDD	Power		

* The pin is affected with an I/O function

4. IPs and Middleware Configuration

4.1. I2C1

I2C: I2C

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

4.2. SPI1

Mode: Full-Duplex Master

mode: Hardware NSS Signal

Basic Parameters:

Frame Format	Motorola
Data Size	8 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
NSS Signal Type	Output Hardware

4.3. SYS

Debug: Trace-Asynchronous_SW

4.4. TIM2

Clock Source : Internal Clock

Counter Settings:

Prescaler (PSC - 16 bits value)	0
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	0
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)

4.5. USART1

Mode: Asynchronous

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

4.6. USART2

Mode: Asynchronous

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

4.7. USB

mode: Device (FS)

Basic Parameters:

Speed	Full Speed 12MBit/s
Endpoint 0 Max Packet size	8 Bytes

Power Parameters:

Low Power	Disabled
Link Power Management	Disabled
Battery Charging	Disabled

*** User modified value**

5. System Configuration

5.1. 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 ***	BMP085_SCL
	PB7	I2C1_SDA	Alternate Function Open Drain	n/a	**High ***	BMP085_SDA
SPI1	PA4	SPI1_NSS	Input mode	No pull-up and no pull-down	n/a	NRF24_NSS
	PA5	SPI1_SCK	Alternate Function Push Pull	n/a	**High ***	NRF24_SCK
	PA6	SPI1_MISO	Input mode	No pull-up and no pull-down	**n/a**	NRF24_MISO
	PA7	SPI1_MOSI	Alternate Function Push Pull	n/a	**High ***	NRF24_MOSI
SYS	PA13	SYS_JTMS-SWDIO	n/a	n/a	n/a	
	PA14	SYS_JTCK-SWCLK	n/a	n/a	n/a	
	PB3	SYS_JTDO-TRACESWO	n/a	n/a	n/a	
USART1	PA9	USART1_TX	Alternate Function Push Pull	n/a	**High ***	MODBAS_TX
	PA10	USART1_RX	Input mode	No pull-up and no pull-down	**n/a**	MODBAS_RX
USART2	PA2	USART2_TX	Alternate Function Push Pull	n/a	**High ***	BATHUNIT_TX
	PA3	USART2_RX	Input mode	No pull-up and no pull-down	**n/a**	BATHUNIT_RX
USB	PA11	USB_DM	n/a	n/a	n/a	
	PA12	USB_DP	n/a	n/a	n/a	
GPIO	PC13-TAMPER-RTC	GPIO_Output	Output Push Pull	n/a	Low	SYSLED
	PA8	GPIO_Output	Output Push Pull	n/a	Low	MODBAS_TX_EN
	PB8	GPIO_Output	Output Push Pull	n/a	Low	NRF24_CE
	PB9	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	NRF24_IRQ

5.2. DMA configuration

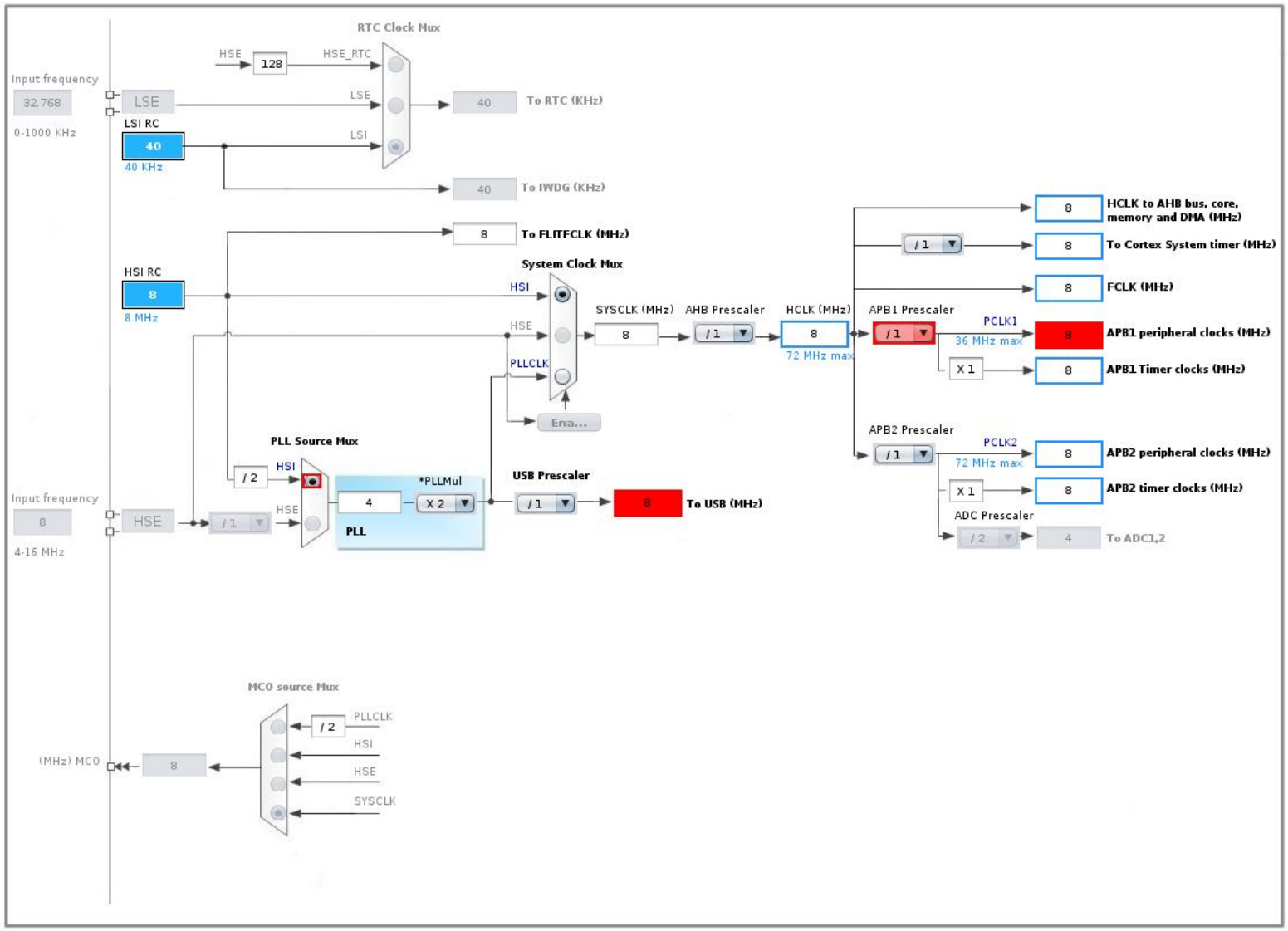
nothing configured in DMA service

5.3. NVIC configuration

Interrupt Table	Enable	Preenmption Priority	SubPriority
System tick timer	true	0	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		
RCC global interrupt	unused		
USB high priority or CAN TX interrupts	unused		
USB low priority or CAN RX0 interrupts	unused		
TIM2 global interrupt	unused		
I2C1 event interrupt	unused		
I2C1 error interrupt	unused		
SPI1 global interrupt	unused		
USART1 global interrupt	unused		
USART2 global interrupt	unused		

*** User modified value**

6. Clock Tree Configuration



7. Power Plugin report

7.1. Microcontroller Selection

Series	STM32F1
Line	STM32F103
MCU	STM32F103C8Tx
Datasheet	13587_Rev16

7.2. Parameter Selection

Temperature	25
Vdd	3.3