1. Description

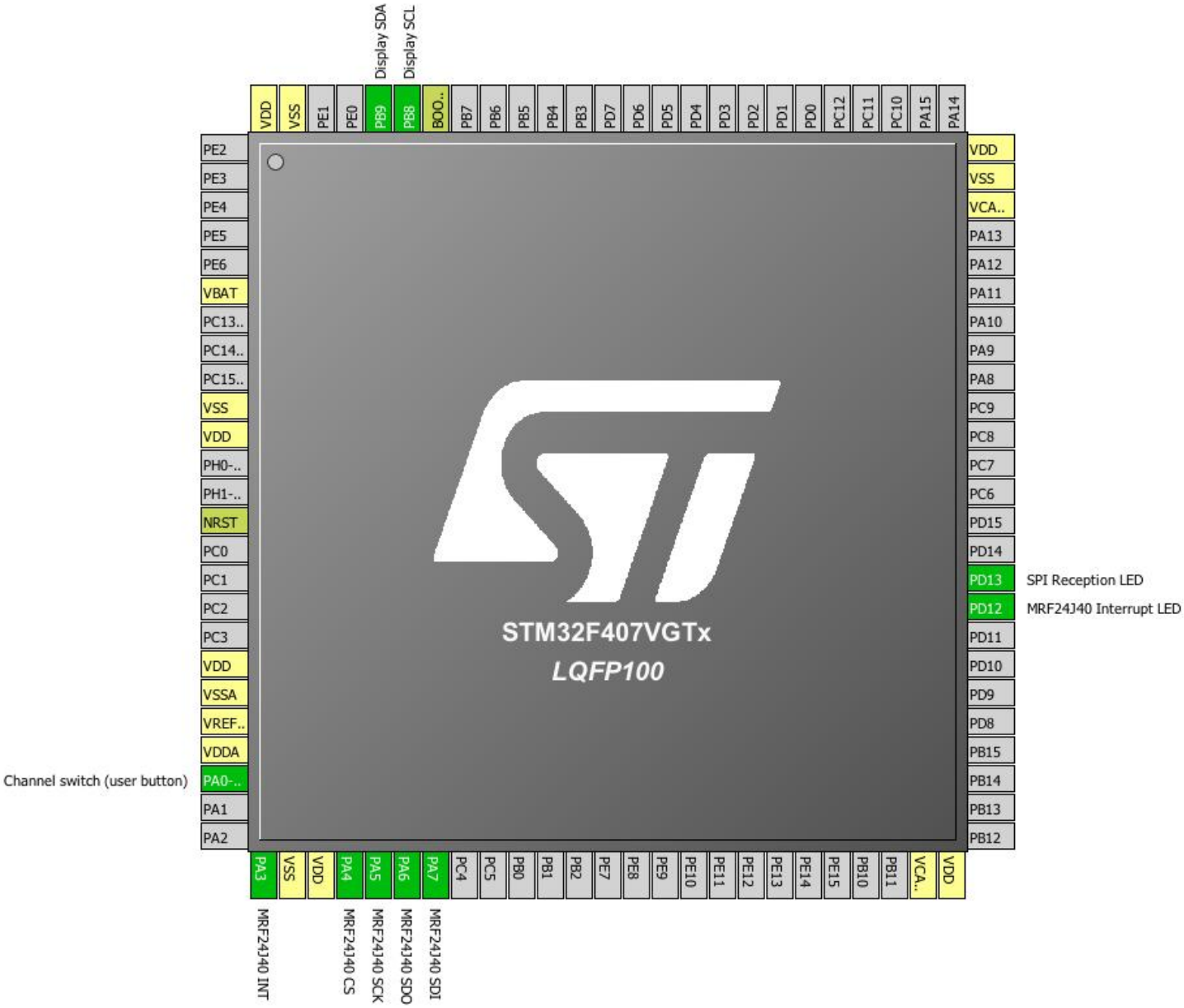
1.1. Project

Project Name	stm32-zigbee-sniffer
Board Name	STM32F407G-DISC1
Generated with:	STM32CubeMX 4.14.0
Date	04/27/2016

1.2. MCU

MCU Series	STM32F4
MCU Line	STM32F407/417
MCU name	STM32F407VGTx
MCU Package	LQFP100
MCU Pin number	100

2. Pinout Configuration

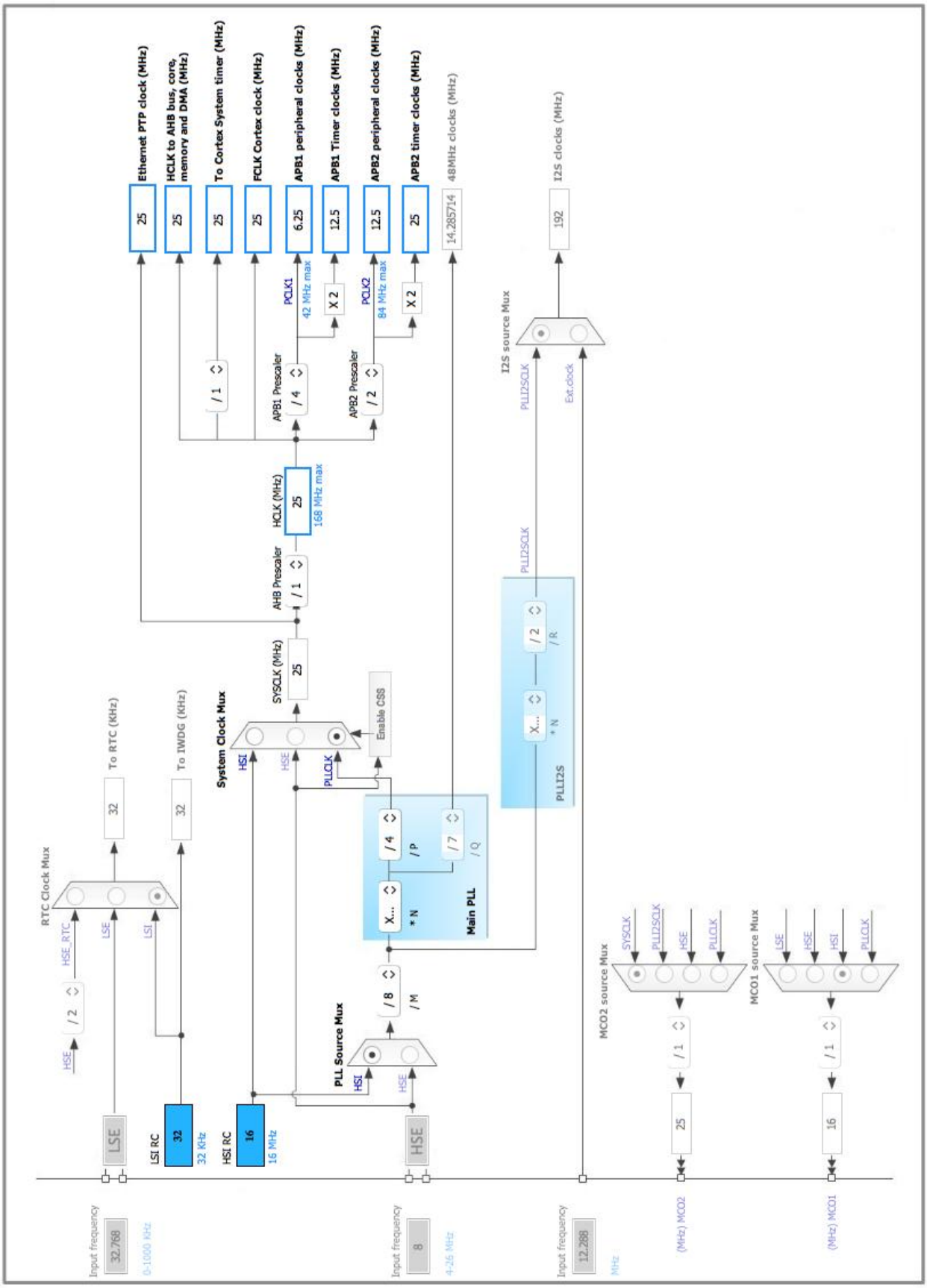


3. Pins Configuration

Pin Number LQFP100	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
6	VBAT	Power		
10	VSS	Power		
11	VDD	Power		
14	NRST	Reset		
19	VDD	Power		
20	VSSA	Power		
21	VREF+	Power		
22	VDDA	Power		
23	PA0-WKUP	I/O	GPIO_EXTI0	Channel switch (user button)
26	PA3	I/O	GPIO_EXTI3	MRF24J40 INT
27	VSS	Power		
28	VDD	Power		
29	PA4 *	I/O	GPIO_Output	MRF24J40 CS
30	PA5	I/O	SPI1_SCK	MRF24J40 SCK
31	PA6	I/O	SPI1_MISO	MRF24J40 SDO
32	PA7	I/O	SPI1_MOSI	MRF24J40 SDI
49	VCAP_1	Power		
50	VDD	Power		
59	PD12 *	I/O	GPIO_Output	MRF24J40 Interrupt LED
60	PD13 *	I/O	GPIO_Output	SPI Reception LED
73	VCAP_2	Power		
74	VSS	Power		
75	VDD	Power		
94	BOOT0	Boot		
95	PB8	I/O	I2C1_SCL	Display SCL
96	PB9	I/O	I2C1_SDA	Display SDA
99	VSS	Power		
100	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. 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	**1.5625 MBits/s ***
Clock Polarity (CPOL)	Low
Clock Phase (CPHA)	1 Edge

Advanced Parameters:

CRC Calculation	Disabled
NSS Signal Type	Software

5.3. SYS

Timebase Source: SysTick

*** 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	PB8	I2C1_SCL	Alternate Function Open Drain	Pull-up	**High ***	Display SCL
	PB9	I2C1_SDA	Alternate Function Open Drain	Pull-up	**High ***	Display SDA
SPI1	PA5	SPI1_SCK	Alternate Function Push Pull	No pull-up and no pull-down	**High ***	MRF24J40 SCK
	PA6	SPI1_MISO	Alternate Function Push Pull	No pull-up and no pull-down	**High ***	MRF24J40 SDO
	PA7	SPI1_MOSI	Alternate Function Push Pull	No pull-up and no pull-down	**High ***	MRF24J40 SDI
GPIO	PA0-WKUP	GPIO_EXTI0	**External Interrupt Mode with Falling edge trigger detection**	No pull-up and no pull-down	n/a	Channel switch (user button)
	PA3	GPIO_EXTI3	**External Interrupt Mode with Falling edge trigger detection**	No pull-up and no pull-down	n/a	MRF24J40 INT
	PA4	GPIO_Output	Output Push Pull	**Pull-up ***	**Medium ***	MRF24J40 CS
	PD12	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	MRF24J40 Interrupt LED
	PD13	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	SPI Reception LED

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
Debug monitor	true	0	0
System tick timer	true	0	0
EXTI line0 interrupt	true	0	0
EXTI line3 interrupt	true	0	0
SPI1 global interrupt	true	0	0
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
I2C1 event interrupt	unused		
I2C1 error interrupt	unused		

*** User modified value**

7. Power Plugin report

7.1. Microcontroller Selection

Series	STM32F4
Line	STM32F407/417
MCU	STM32F407VGTx
Datasheet	022152_Rev6

7.2. Parameter Selection

Temperature	25
Vdd	3.3

8. Software Project

8.1. Project Settings

Name	Value
Project Name	stm32-zigbee-sniffer
Project Folder	/Users/evgeniyMorozov/Documents/git/stm32-zigbee-sniffer/docs/stm32-zigbee-
Toolchain / IDE	Other Toolchains (GPDSC)
Firmware Package Name and Version	STM32Cube FW_F4 V1.11.0

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