1. Description

1.1. Project

Project Name	spi_multi_master
Board Name	custom
Generated with:	STM32CubeMX 4.27.0
Date	10/25/2018

1.2. MCU

MCU Series	STM32H7
MCU Line	STM32H743/753
MCU name	STM32H743ZITx
MCU Package	LQFP144
MCU Pin number	144

2. Pinout Configuration
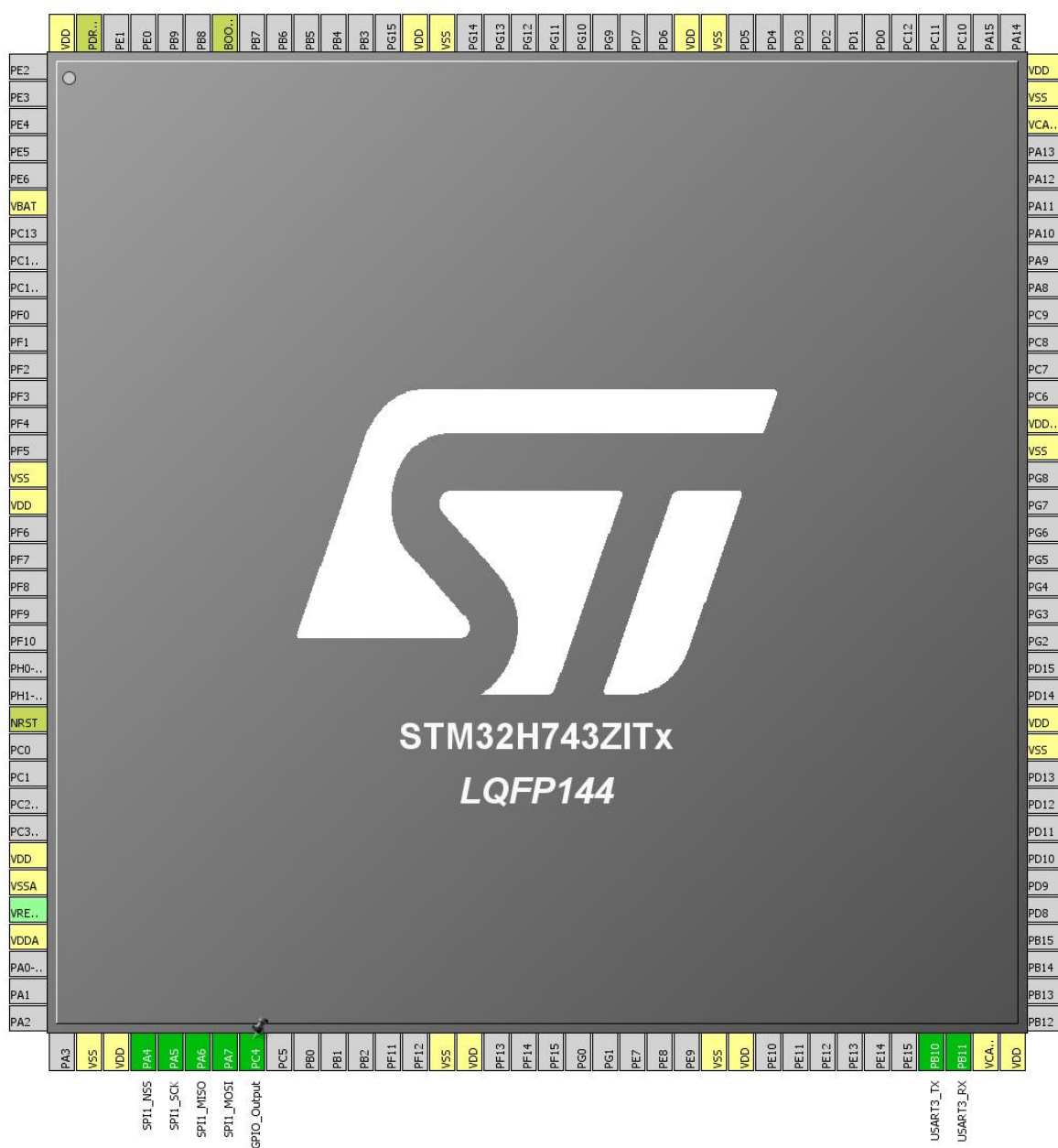
3. Pins Configuration

Pin Number LQFP144	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
6	VBAT	Power		
16	VSS	Power		
17	VDD	Power		
25	NRST	Reset		
30	VDD	Power		
31	VSSA	Power		
33	VDDA	Power		
38	VSS	Power		
39	VDD	Power		
40	PA4	I/O	SPI1_NSS	
41	PA5	I/O	SPI1_SCK	
42	PA6	I/O	SPI1_MISO	
43	PA7	I/O	SPI1_MOSI	
44	PC4 *	I/O	GPIO_Output	
51	VSS	Power		
52	VDD	Power		
61	VSS	Power		
62	VDD	Power		
69	PB10	I/O	USART3_TX	
70	PB11	I/O	USART3_RX	
71	VCAP1	Power		
72	VDD	Power		
83	VSS	Power		
84	VDD	Power		
94	VSS	Power		
95	VDD33_USB	Power		
106	VCAP2	Power		
107	VSS	Power		
108	VDD	Power		
120	VSS	Power		
121	VDD	Power		
130	VSS	Power		
131	VDD	Power		
138	BOOT0	Boot		
143	PDR_ON	Reset		
144	VDD	Power		

 * The pin is affected with an I/O function

4. Clock Tree Configuration
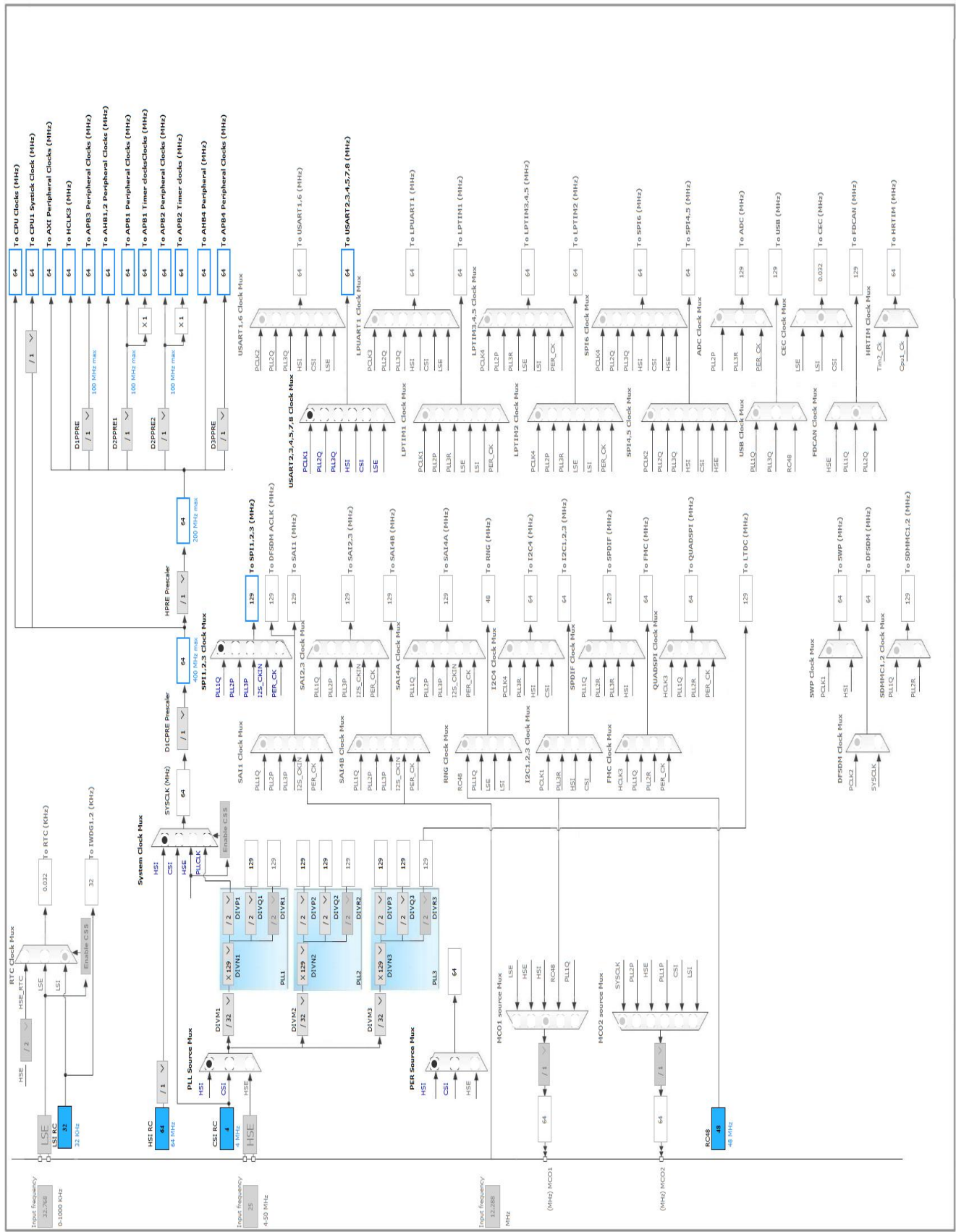
5. IPs and Middleware Configuration

5.1. SPI1

Mode: Full-Duplex Slave

Hardware NSS Signal: Hardware NSS Input Signal

5.1.1. Parameter Settings:

Basic Parameters:

Frame Format	Motorola
Data Size	4 Bits
First Bit	MSB First

Clock Parameters:

Clock Polarity (CPOL)	Low
Clock Phase (CPHA)	1 Edge

Advanced Parameters:

CRC Calculation	Disabled
NSS Signal Type	Input Hardware
Fifo Threshold	Fifo Threshold 01 Data
Tx Crc Initialization Pattern	All Zero Pattern
Rx Crc Initialization Pattern	All Zero Pattern
Nss Polarity	Nss Polarity Low
Master Ss Idleness	00 Cycle
Master Inter Data Idleness	00 Cycle
Master Receiver Auto Susp	Disable
Master Keep Io State	Master Keep Io State Disable
IO Swap	Disabled

5.2. SYS

Timebase Source: SysTick

5.3. USART3

Mode: Asynchronous

5.3.1. 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
Single Sample	Disable
Prescaler	clock /1
Fifo Mode	Disable
Txfifo Threshold	1 eighth full configuration
Rxfifo Threshold	1 eighth full configuration

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
SPI1	PA4	SPI1_NSS	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PA5	SPI1_SCK	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PA6	SPI1_MISO	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PA7	SPI1_MOSI	Alternate Function Push Pull	No pull-up and no pull-down	Low	
USART3	PB10	USART3_TX	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PB11	USART3_RX	Alternate Function Push Pull	No pull-up and no pull-down	Low	
GPIO	PC4	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	

6.2. DMA configuration

nothing configured in DMA service

6.3. BDMA configuration

nothing configured in DMA service

6.4. MDMA configuration

nothing configured in DMA service

6.5. 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 and AVD interrupts through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
SPI1 global interrupt	unused		
USART3 global interrupt	unused		
FPU global interrupt	unused		
HSEM1 global interrupt	unused		

* User modified value

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32H7
Line	STM32H743/753
MCU	STM32H743ZITx
Datasheet	030538_Rev1

7.2. Parameter Selection

Temperature	25
Vdd	3.0

8. Software Project

8.1. Project Settings

Name	Value
Project Name	spi_multi_master
Project Folder	C:\Users\Andrada Zoltan\Desktop\UBCOrbit\cdh_firmware_csdc5\STM32H743
Toolchain / IDE	SW4STM32
Firmware Package Name and Version	STM32Cube FW_H7 V1.3.0

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

9. Software Pack Report