

## 1. Description

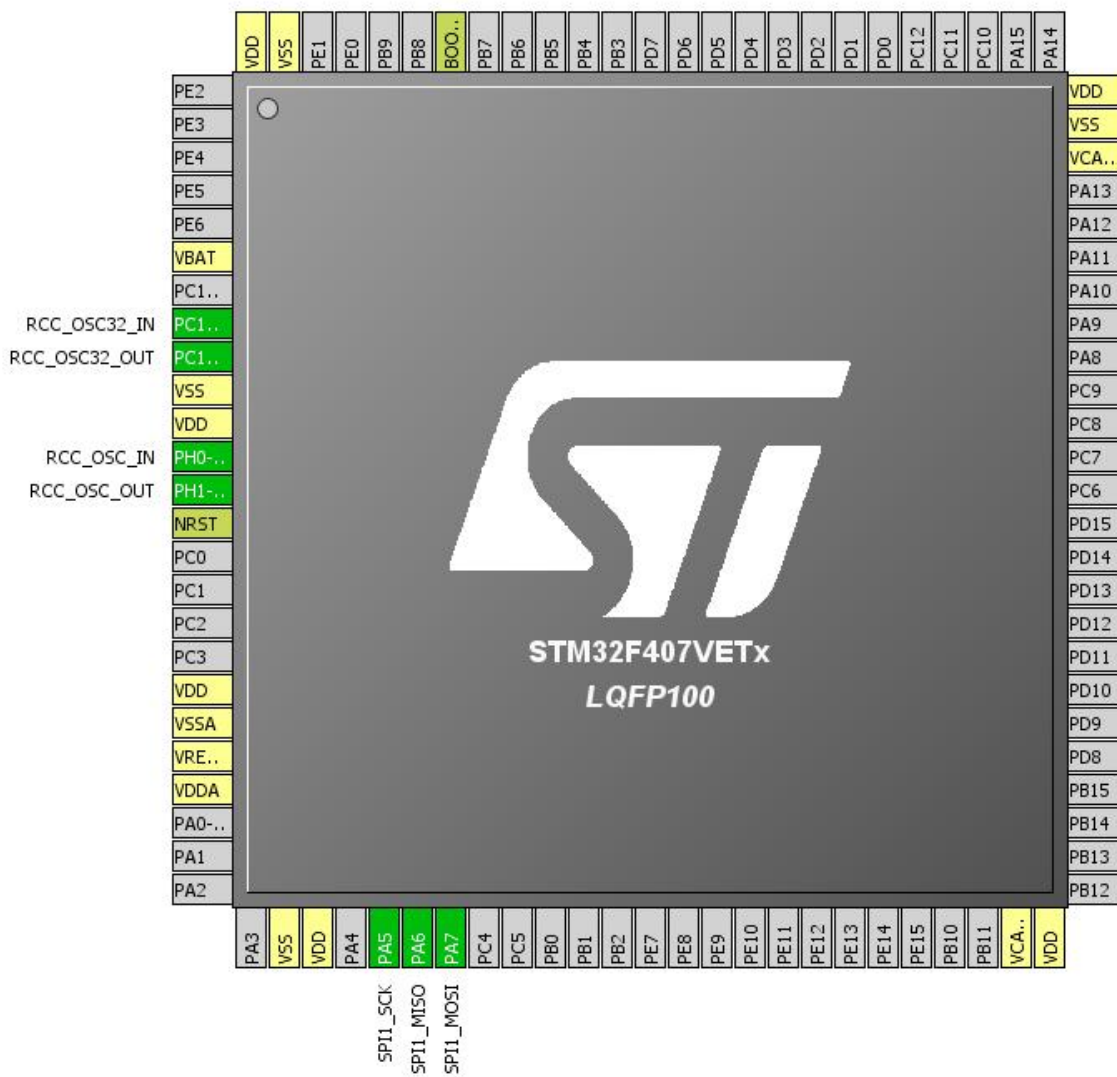
### 1.1. Project

Project Name	Vimana_Boot
Board Name	custom
Generated with:	STM32CubeMX 4.26.1
Date	10/23/2018

### 1.2. MCU

MCU Series	STM32F4
MCU Line	STM32F407/417
MCU name	STM32F407VETx
MCU Package	LQFP100
MCU Pin number	100

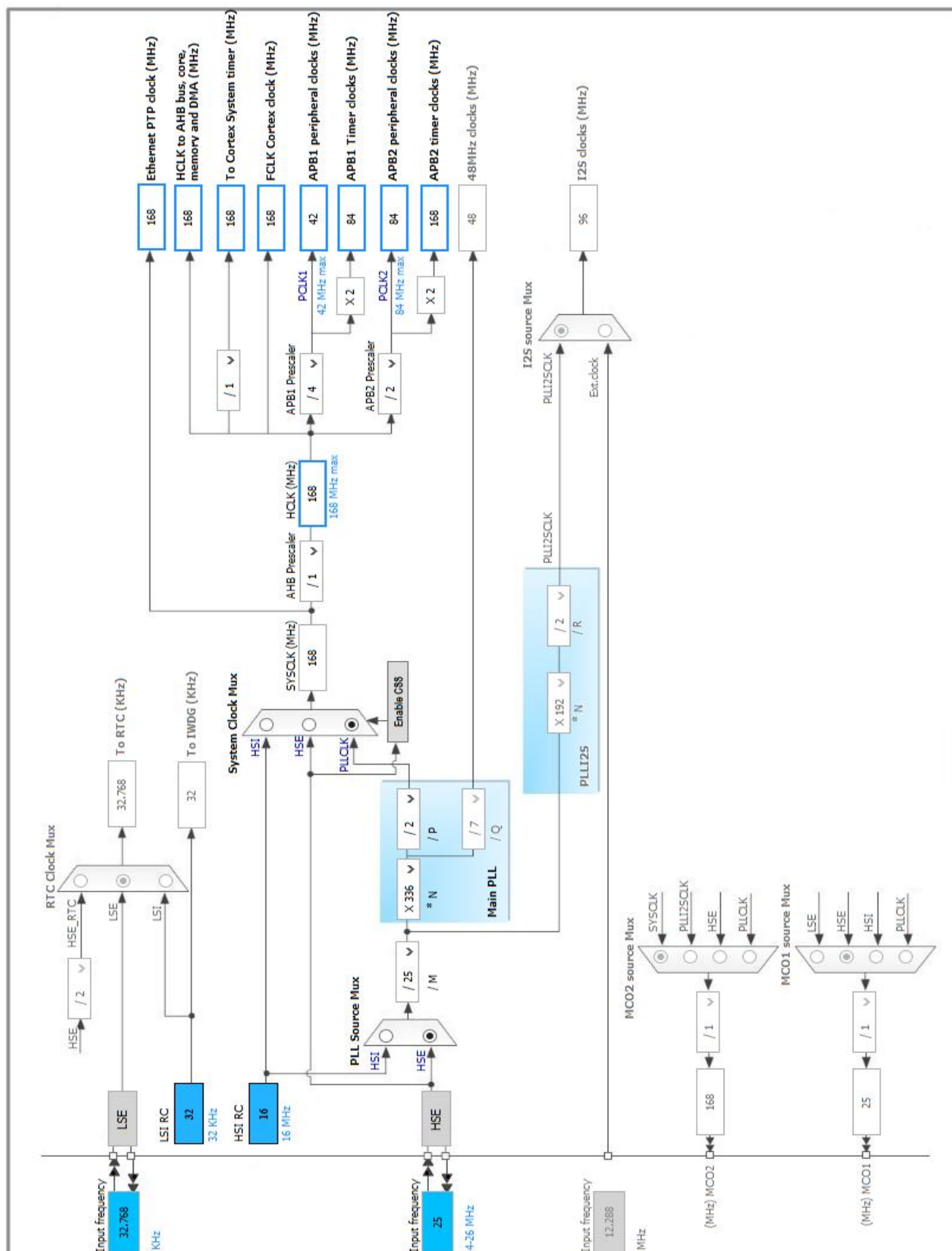
## 2. Pinout Configuration



### 3. Pins Configuration

Pin Number LQFP100	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
6	VBAT	Power		
8	PC14-OSC32_IN	I/O	RCC_OSC32_IN	
9	PC15-OSC32_OUT	I/O	RCC_OSC32_OUT	
10	VSS	Power		
11	VDD	Power		
12	PH0-OSC_IN	I/O	RCC_OSC_IN	
13	PH1-OSC_OUT	I/O	RCC_OSC_OUT	
14	NRST	Reset		
19	VDD	Power		
20	VSSA	Power		
21	VREF+	Power		
22	VDDA	Power		
27	VSS	Power		
28	VDD	Power		
30	PA5	I/O	SPI1_SCK	
31	PA6	I/O	SPI1_MISO	
32	PA7	I/O	SPI1_MOSI	
49	VCAP_1	Power		
50	VDD	Power		
73	VCAP_2	Power		
74	VSS	Power		
75	VDD	Power		
94	BOOT0	Boot		
99	VSS	Power		
100	VDD	Power		

#### 4. Clock Tree Configuration



## 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
Instruction Cache	Enabled
Prefetch Buffer	Enabled
Data Cache	Enabled
Flash Latency(WS)	5 WS (6 CPU cycle)

##### RCC Parameters:

HSI Calibration Value	16
HSE Startup Timeout Value (ms)	100
LSE Startup Timeout Value (ms)	5000

##### Power Parameters:

Power Regulator Voltage Scale	Power Regulator Voltage Scale 1
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### 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)	2
Baud Rate	<b>42.0 MBits/s *</b>
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
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	
	PH0-OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	
	PH1-OSC_OUT	RCC_OSC_OUT	n/a	n/a	n/a	
SPI1	PA5	SPI1_SCK	Alternate Function Push Pull	No pull-up and no pull-down	<b>Very High</b> *	
	PA6	SPI1_MISO	Alternate Function Push Pull	No pull-up and no pull-down	<b>Very High</b> *	
	PA7	SPI1_MOSI	Alternate Function Push Pull	No pull-up and no pull-down	<b>Very High</b> *	

### 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
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		
FPU global interrupt	unused		

\* User modified value



## ***7. Power Consumption Calculator report***

### 7.1. Microcontroller Selection

Series	STM32F4
Line	STM32F407/417
MCU	STM32F407VETx
Datasheet	022152_Rev8

### 7.2. Parameter Selection

Temperature	25
Vdd	3.3

## 8. Software Project

### 8.1. Project Settings

Name	Value
Project Name	Vimana_Boot
Project Folder	D:\Vimana\Project\VIMANA_BOOT\Vimana_Boot
Toolchain / IDE	MDK-ARM V5
Firmware Package Name and Version	STM32Cube FW_F4 V1.21.0

### 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	Yes
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***