

1. Description

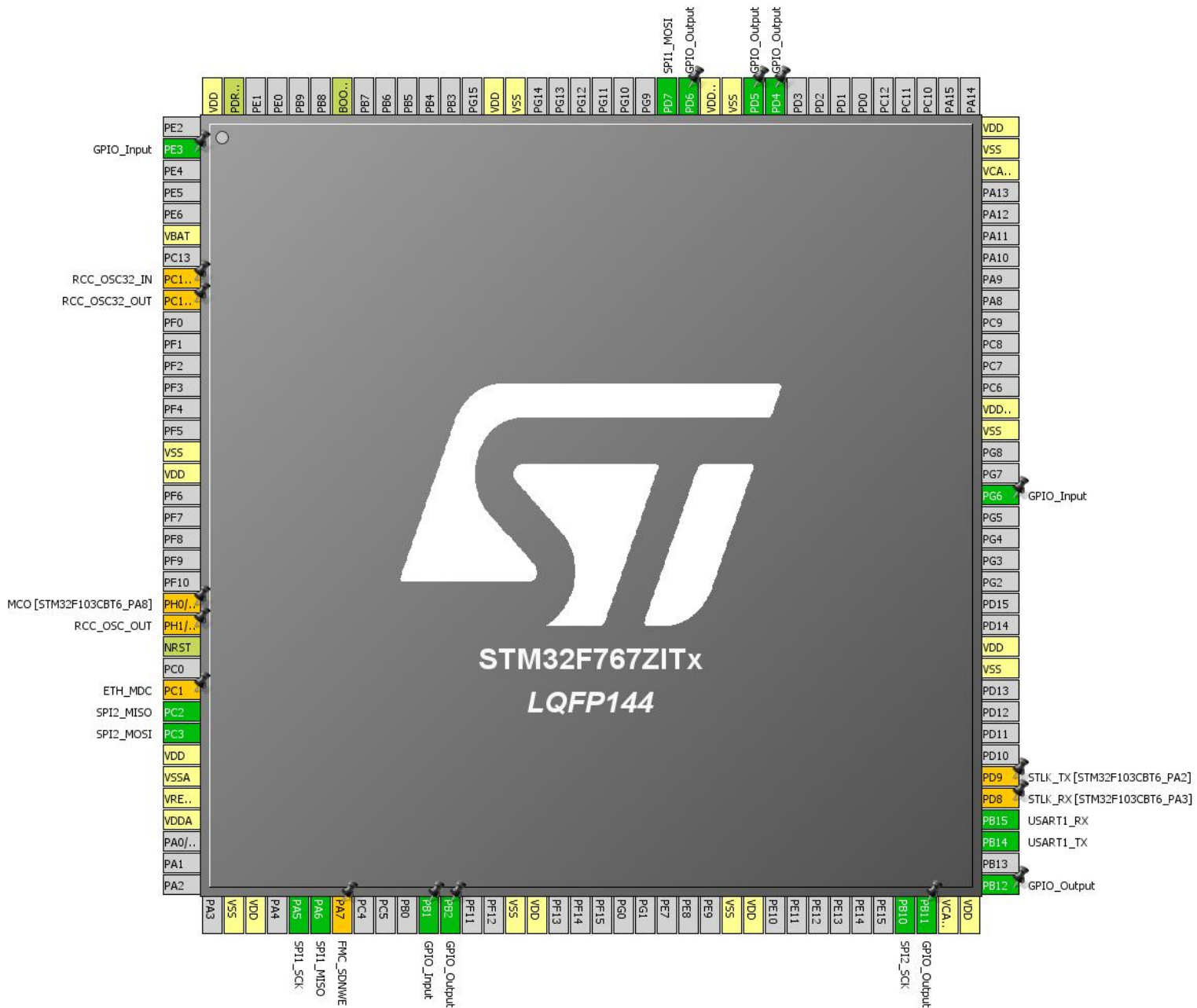
1.1. Project

Project Name	Front
Board Name	NUCLEO-F767ZI
Generated with:	STM32CubeMX 4.21.0
Date	09/22/2017

1.2. MCU

MCU Series	STM32F7
MCU Line	STM32F7x7
MCU name	STM32F767ZITx
MCU Package	LQFP144
MCU Pin number	144

2. Pinout Configuration



3. Pins Configuration

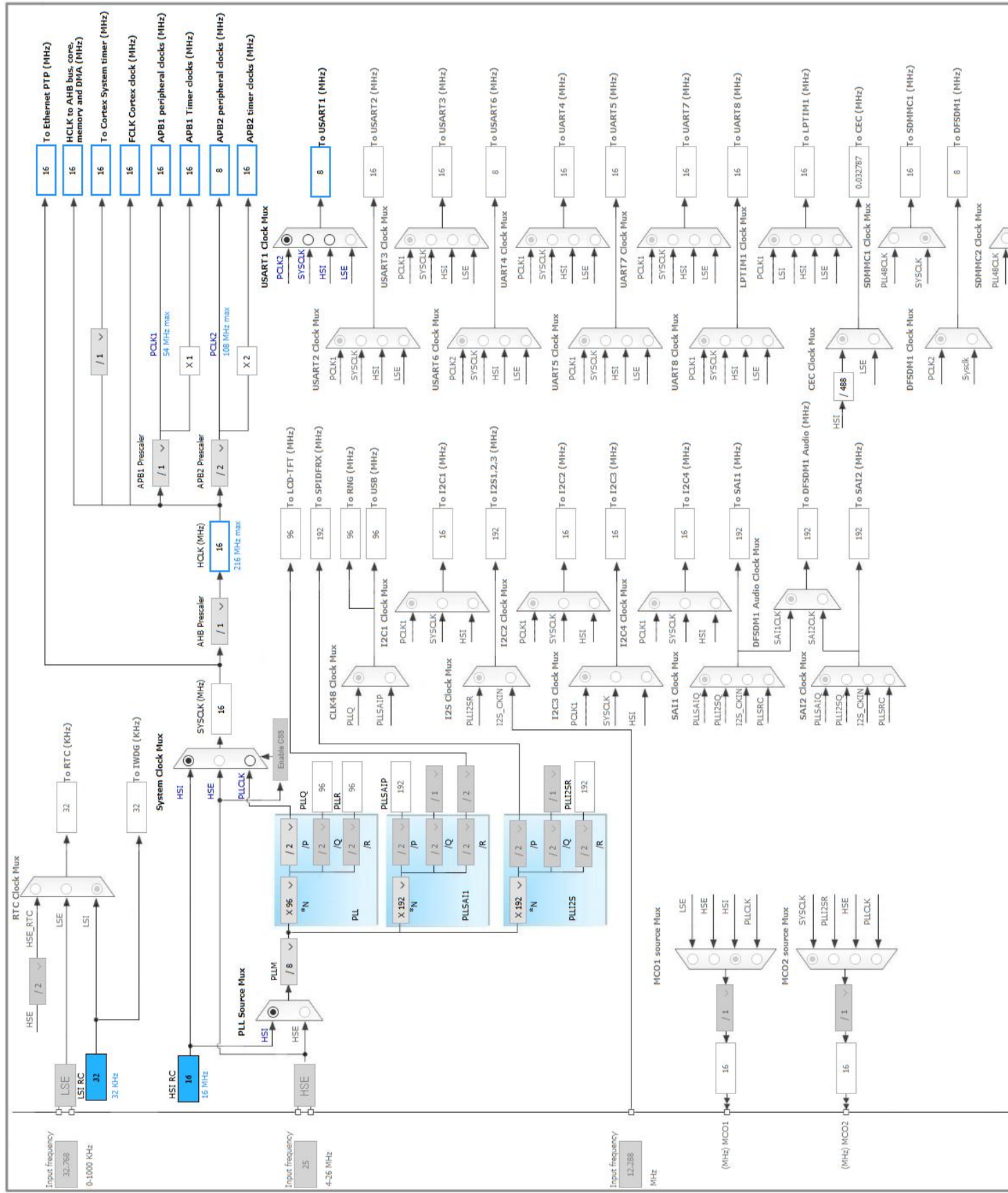
Pin Number LQFP144	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
2	PE3 *	I/O	GPIO_Input	
6	VBAT	Power		
8	PC14/OSC32_IN **	I/O	RCC_OSC32_IN	
9	PC15/OSC32_OUT **	I/O	RCC_OSC32_OUT	
16	VSS	Power		
17	VDD	Power		
23	PH0/OSC_IN **	I/O	RCC_OSC_IN	MCO [STM32F103CBT6_PA8]
24	PH1/OSC_OUT **	I/O	RCC_OSC_OUT	
25	NRST	Reset		
27	PC1 **	I/O	ETH_MDC	
28	PC2	I/O	SPI2_MISO	
29	PC3	I/O	SPI2_MOSI	
30	VDD	Power		
31	VSSA	Power		
32	VREF+	Power		
33	VDDA	Power		
38	VSS	Power		
39	VDD	Power		
41	PA5	I/O	SPI1_SCK	
42	PA6	I/O	SPI1_MISO	
43	PA7 **	I/O	FMC_SDNWE	
47	PB1 *	I/O	GPIO_Input	
48	PB2 *	I/O	GPIO_Output	
51	VSS	Power		
52	VDD	Power		
61	VSS	Power		
62	VDD	Power		
69	PB10	I/O	SPI2_SCK	
70	PB11 *	I/O	GPIO_Output	
71	VCAP_1	Power		
72	VDD	Power		
73	PB12 *	I/O	GPIO_Output	
75	PB14	I/O	USART1_TX	
76	PB15	I/O	USART1_RX	

Pin Number LQFP144	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
77	PD8 **	I/O	USART3_TX	STLK_RX [STM32F103CBT6_PA3]
78	PD9 **	I/O	USART3_RX	STLK_TX [STM32F103CBT6_PA2]
83	VSS	Power		
84	VDD	Power		
91	PG6 *	I/O	GPIO_Input	
94	VSS	Power		
95	VDDUSB	Power		
106	VCAP_2	Power		
107	VSS	Power		
108	VDD	Power		
118	PD4 *	I/O	GPIO_Output	
119	PD5 *	I/O	GPIO_Output	
120	VSS	Power		
121	VDDSDMMC	Power		
122	PD6 *	I/O	GPIO_Output	
123	PD7	I/O	SPI1_MOSI	
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

** The pin is affected with a peripheral function but no peripheral mode is activated

4. Clock Tree Configuration



5. IPs and Middleware Configuration

5.1. SPI1

Mode: Full-Duplex Master

5.1.1. Parameter Settings:

Basic Parameters:

Frame Format	Motorola
Data Size	8 Bits *
First Bit	MSB First

Clock Parameters:

Prescaler (for Baud Rate)	2
Baud Rate	4.0 MBits/s *
Clock Polarity (CPOL)	Low
Clock Phase (CPHA)	1 Edge

Advanced Parameters:

CRC Calculation	Disabled
NSSP Mode	Disabled *
NSS Signal Type	Software

5.2. SPI2

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)	4 *
Baud Rate	4.0 MBits/s *
Clock Polarity (CPOL)	Low
Clock Phase (CPHA)	1 Edge

Advanced Parameters:

CRC Calculation	Disabled
NSSP Mode	Disabled *
NSS Signal Type	Software

5.3. SYS

Timebase Source: SysTick

5.4. USART1

Mode: Asynchronous

5.4.1. 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

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	PA5	SPI1_SCK	Alternate Function Push Pull	No pull-up and no pull-down	Very High *	
	PA6	SPI1_MISO	Alternate Function Push Pull	No pull-up and no pull-down	Very High *	
	PD7	SPI1_MOSI	Alternate Function Push Pull	No pull-up and no pull-down	Very High *	
SPI2	PC2	SPI2_MISO	Alternate Function Push Pull	No pull-up and no pull-down	Very High *	
	PC3	SPI2_MOSI	Alternate Function Push Pull	No pull-up and no pull-down	Very High *	
	PB10	SPI2_SCK	Alternate Function Push Pull	No pull-up and no pull-down	Very High *	
USART1	PB14	USART1_TX	Alternate Function Push Pull	Pull-up	Very High *	
	PB15	USART1_RX	Alternate Function Push Pull	Pull-up	Very High *	
Single Mapped Signals	PC14/OSC3_2_IN	RCC_OSC32_IN	n/a	n/a	n/a	
	PC15/OSC3_2_OUT	RCC_OSC32_OUT	n/a	n/a	n/a	
	PH0/OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	MCO [STM32F103CBT6_PA8]
	PH1/OSC_OUT	RCC_OSC_OUT	n/a	n/a	n/a	
	PC1	ETH_MDC	Alternate Function Push Pull	No pull-up and no pull-down	Very High *	
	PA7	FMC_SDNWE	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PD8	USART3_TX	Alternate Function Push Pull	No pull-up and no pull-down	Very High *	STLK_RX [STM32F103CBT6_PA3]
	PD9	USART3_RX	Alternate Function Push Pull	No pull-up and no pull-down	Very High *	STLK_TX [STM32F103CBT6_PA2]
GPIO	PE3	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	
	PB1	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
	PB2	GPIO_Output	Output Push Pull	No pull-up and no pull-down	High *	
	PB11	GPIO_Output	Output Push Pull	No pull-up and no pull-down	High *	
	PB12	GPIO_Output	Output Push Pull	No pull-up and no pull-down	High *	
	PG6	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	
	PD4	GPIO_Output	Output Push Pull	No pull-up and no pull-down	High *	
	PD5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	High *	
	PD6	GPIO_Output	Output Push Pull	No pull-up and no pull-down	High *	

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		
SPI2 global interrupt	unused		
USART1 global interrupt	unused		
FPU global interrupt	unused		

* User modified value

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32F7
Line	STM32F7x7
MCU	STM32F767ZITx
Datasheet	029041_Rev3

7.2. Parameter Selection

Temperature	25
Vdd	3.6

8. Software Project

8.1. Project Settings

Name	Value
Project Name	Front
Project Folder	D:\Project\BoardCar\Code\Front
Toolchain / IDE	MDK-ARM V5
Firmware Package Name and Version	STM32Cube FW_F7 V1.7.0

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