1. Description

1.1. Project

Project Name	stm32f103-wave
Board Name	custom
Generated with:	STM32CubeMX 4.9.0
Date	02/07/2016

1.2. MCU

MCU Series	STM32F1
MCU Line	STM32F103
MCU name	STM32F103ZETx
MCU Package	LQFP144
MCU Pin number	144

2. Pinout Configuration
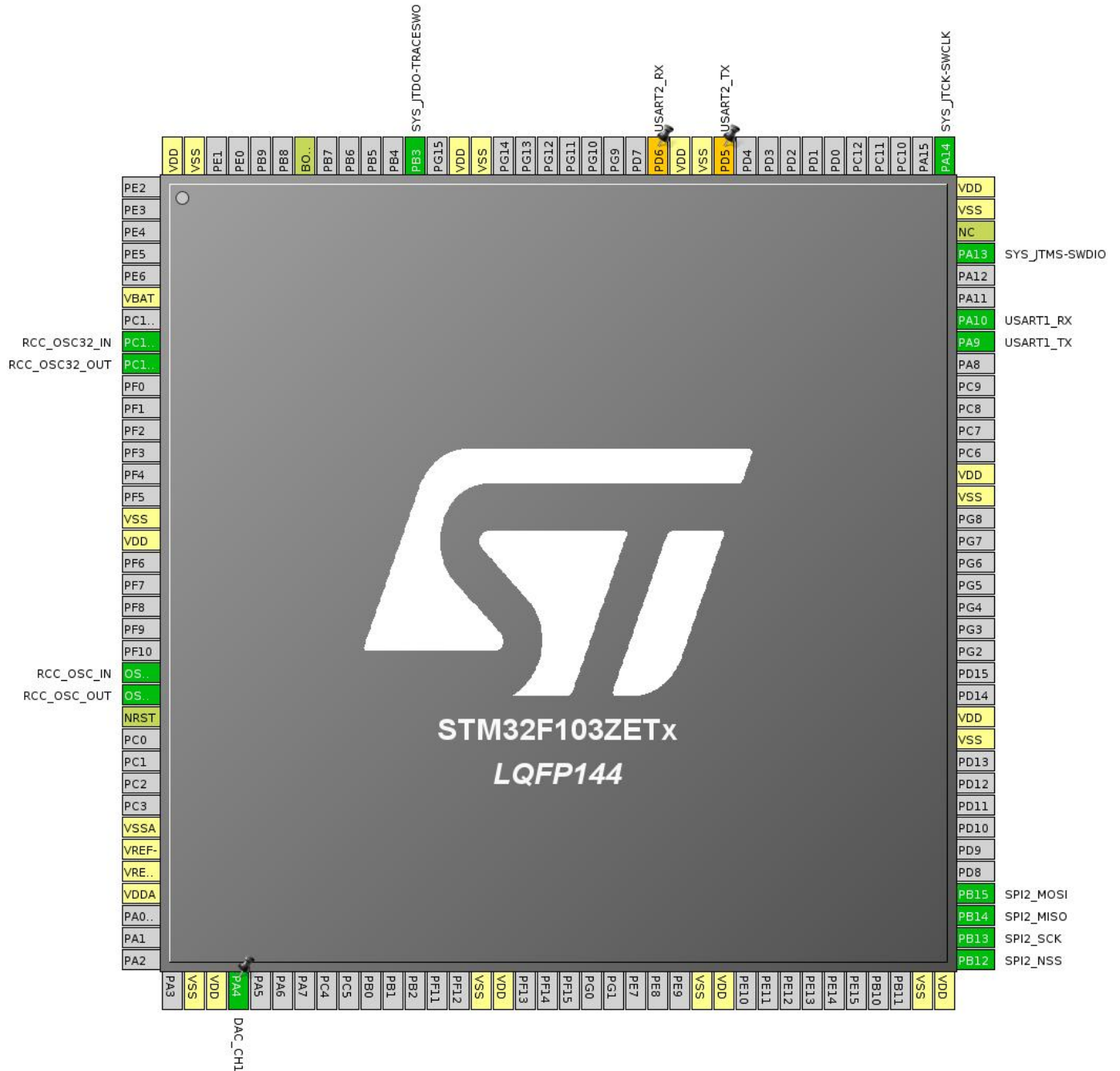
3. Pins Configuration

Pin Number LQFP144	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
6	VBAT	Power		
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	OSC_IN	I/O	RCC_OSC_IN	
24	OSC_OUT	I/O	RCC_OSC_OUT	
25	NRST	Reset		
30	VSSA	Power		
31	VREF-	Power		
32	VREF+	Power		
33	VDDA	Power		
38	VSS	Power		
39	VDD	Power		
40	PA4	I/O	DAC_OUT1	DAC_CH1
51	VSS	Power		
52	VDD	Power		
61	VSS	Power		
62	VDD	Power		
71	VSS	Power		
72	VDD	Power		
73	PB12	I/O	SPI2_NSS	
74	PB13	I/O	SPI2_SCK	
75	PB14	I/O	SPI2_MISO	
76	PB15	I/O	SPI2_MOSI	
83	VSS	Power		
84	VDD	Power		
94	VSS	Power		
95	VDD	Power		
101	PA9	I/O	USART1_TX	
102	PA10	I/O	USART1_RX	
105	PA13	I/O	SYS_JTMS-SWDIO	
106	NC	NC		
107	VSS	Power		
108	VDD	Power		
109	PA14	I/O	SYS_JTCK-SWCLK	

Pin Number LQFP144	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
119	PD5 *	I/O	USART2_TX	
120	VSS	Power		
121	VDD	Power		
122	PD6 *	I/O	USART2_RX	
130	VSS	Power		
131	VDD	Power		
133	PB3	I/O	SYS_JTDO-TRACESWO	
138	BOOT0	Boot		
143	VSS	Power		
144	VDD	Power		

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

4. IPs and Middleware Configuration

4.1. DAC

mode: OUT1 Configuration

DAC Out1 Settings:

Output Buffer	Enable
Trigger	None

4.2. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

Low Speed Clock (LSE) : Crystal/Ceramic Resonator

System Parameters:

VDD voltage (V)	3.3
Prefetch Buffer	Enabled
Flash Latency(WS)	2 WS (3 CPU cycle)

RCC Parameters:

HSI Calibration Value	16

4.3. SPI2

Mode: Full-Duplex Master

Hardware NSS Signal: Hardware NSS Output Signal

Basic Parameters:

Frame Format	Motorola
Data Size	8 Bits
First Bit	MSB First

Clock Parameters:

Prescaler (for Baud Rate)	**4 ***
Baud Rate	**9.0 MBits/s ***
Clock Polarity (CPOL)	Low
Clock Phase (CPHA)	1 Edge

Advanced Parameters:

CRC Calculation	Disabled

NSS Signal Type	Output Hardware

4.4. SYS

Debug: Trace-Asynchronous_SW

4.5. TIM6

mode: Activated

Counter Settings:

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

Trigger Output (TRGO) Parameters:

Trigger Event Selection	Reset (UG bit from TIMx_EGR)

4.6. 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

* User modified value

5. System Configuration

5.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
DAC	PA4	DAC_OUT1	Analog mode	n/a	n/a	DAC_CH1
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	
	OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	
	OSC_OUT	RCC_OSC_OUT	n/a	n/a	n/a	
SPI2	PB12	SPI2_NSS	Alternate Function Push Pull	n/a	**High ***	
	PB13	SPI2_SCK	Alternate Function Push Pull	n/a	**High ***	
	PB14	SPI2_MISO	Input mode	No pull-up and no pull-down	**n/a**	
	PB15	SPI2_MOSI	Alternate Function Push Pull	n/a	**High ***	
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 ***	
	PA10	USART1_RX	Input mode	No pull-up and no pull-down	**n/a**	
Single Mapped Signals	PD5	USART2_TX	Alternate Function Push Pull	n/a	**High ***	
	PD6	USART2_RX	Input mode	No pull-up and no pull-down	**n/a**	

5.2. DMA configuration

nothing configured in DMA service

5.3. NVIC configuration

Interrupt Table	Enable	Preenmption Priority	SubPriority
Non maskable interrupt	true	0	0
System tick timer	true	0	0
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		
SPI2 global interrupt	unused		
USART1 global interrupt	unused		
TIM6 global interrupt	unused		

* User modified value

6. Clock Tree Configuration
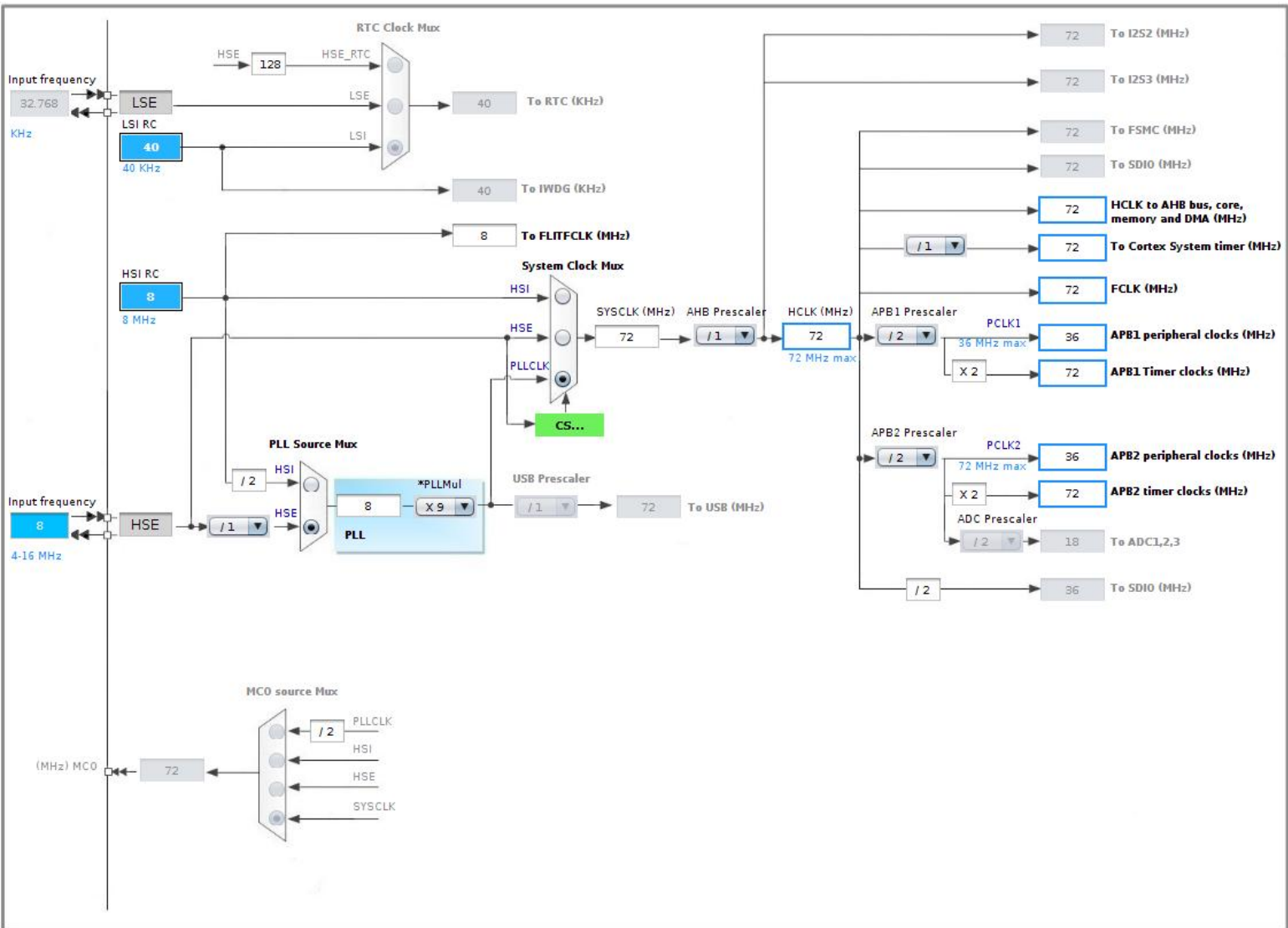
7. Power Plugin report

7.1. Microcontroller Selection

Series	STM32F1
Line	STM32F103
MCU	STM32F103ZETx
Datasheet	14611_Rev10

7.2. Parameter Selection

Temperature	25
Vdd	3.3