1. Description

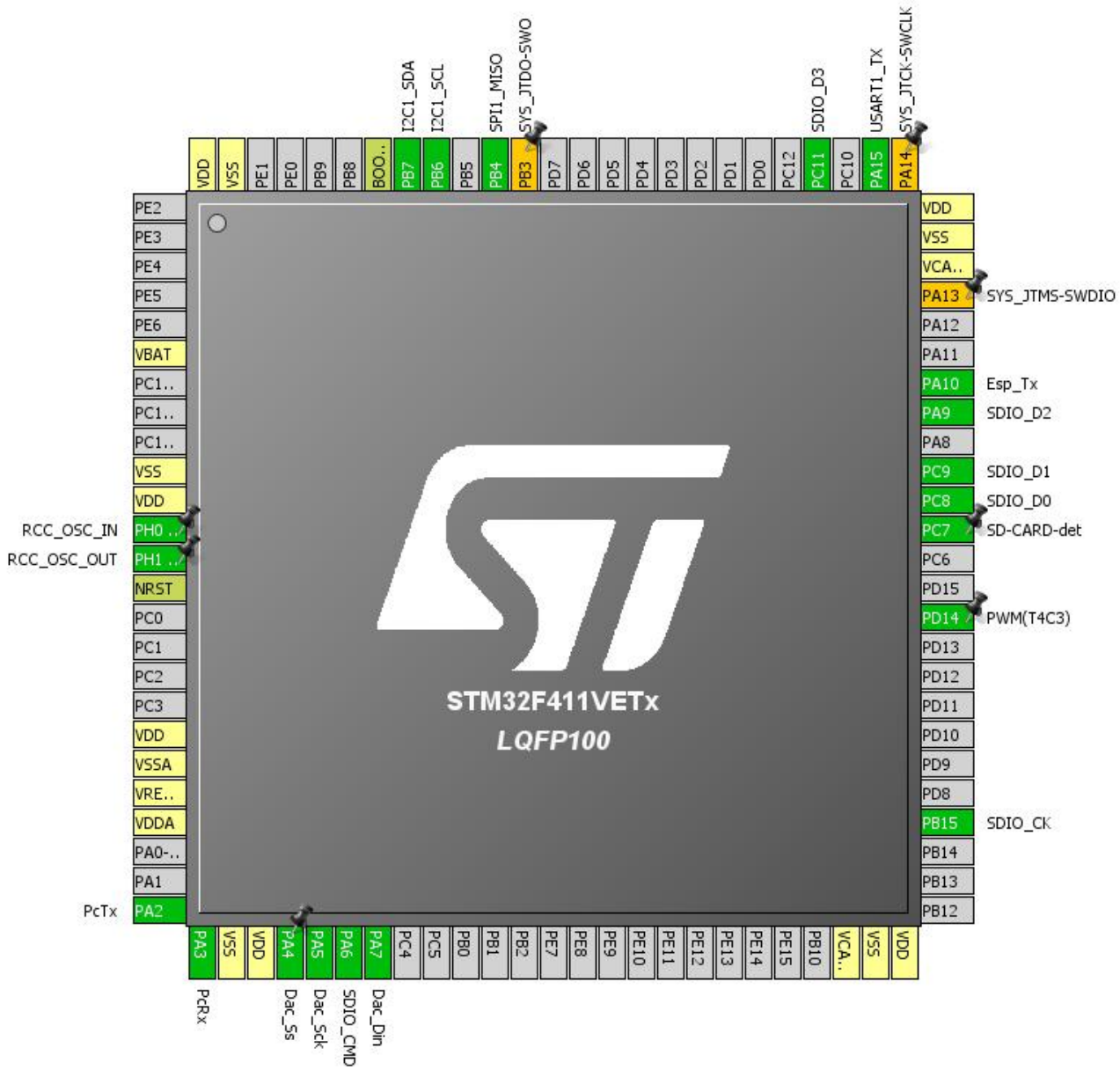
1.1. Project

Project Name	stm32LayOut
Board Name	No information
Generated with:	STM32CubeMX 4.13.0
Date	04/28/2016

1.2. MCU

MCU Series	STM32F4
MCU Line	STM32F411
MCU name	STM32F411VETx
MCU Package	LQFP100
MCU Pin number	100

2. Pinout Configuration



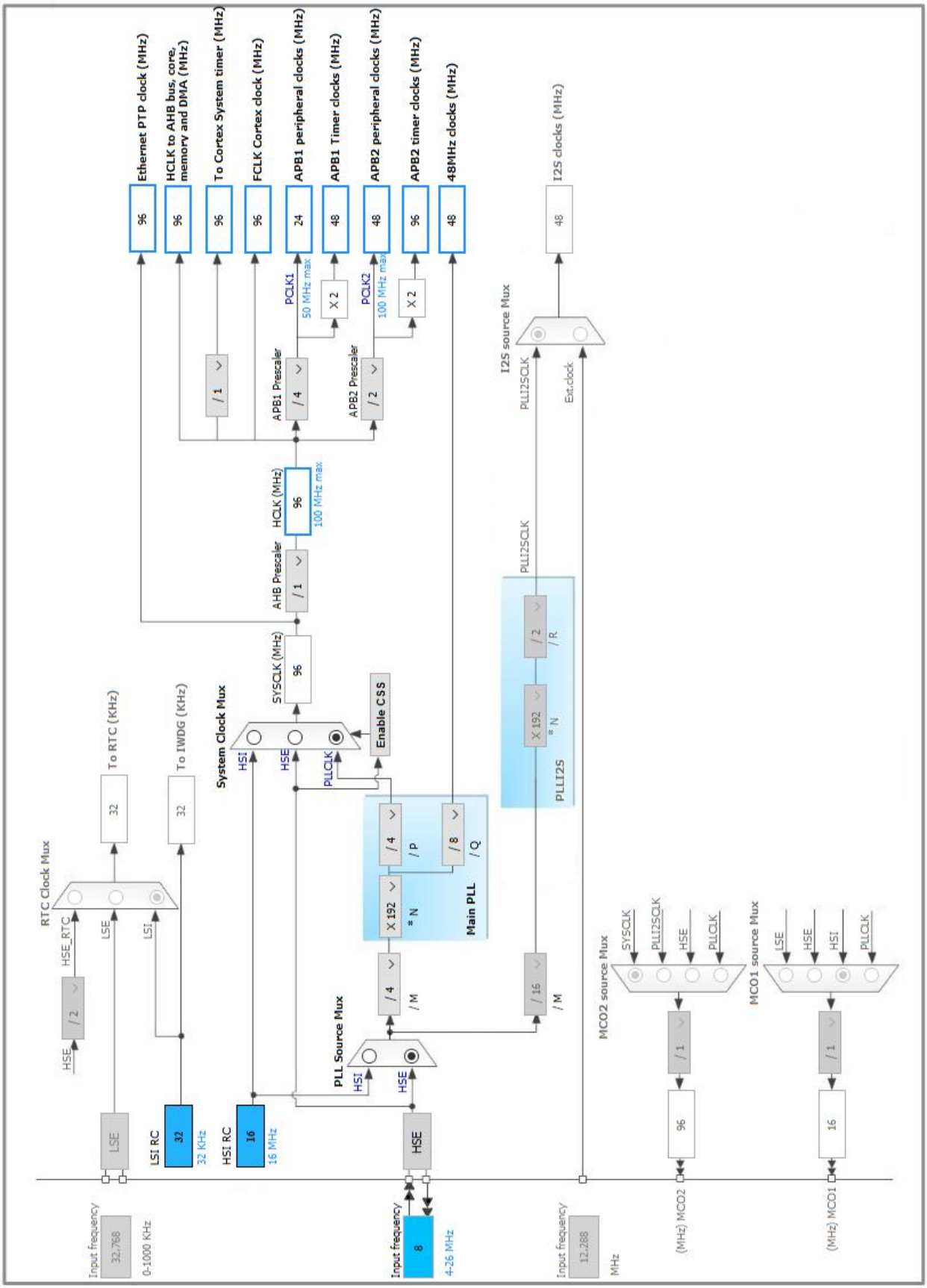
3. Pins Configuration

Pin Number LQFP100	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
6	VBAT	Power		
10	VSS	Power		
11	VDD	Power		
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		
25	PA2	I/O	USART2_TX	PcTx
26	PA3	I/O	USART2_RX	PcRx
27	VSS	Power		
28	VDD	Power		
29	PA4 *	I/O	GPIO_Output	Dac_Ss
30	PA5	I/O	SPI1_SCK	Dac_Sck
31	PA6	I/O	SDIO_CMD	
32	PA7	I/O	SPI1_MOSI	Dac_Din
48	VCAP1	Power		
49	VSS	Power		
50	VDD	Power		
54	PB15	I/O	SDIO_CK	
61	PD14	I/O	TIM4_CH3	PWM(T4C3)
64	PC7 *	I/O	GPIO_Input	SD-CARD-det
65	PC8	I/O	SDIO_D0	
66	PC9	I/O	SDIO_D1	
68	PA9	I/O	SDIO_D2	
69	PA10	I/O	USART1_RX	Esp_Tx
72	PA13 **	I/O	SYS_JTMS-SWDIO	
73	VCAP2	Power		
74	VSS	Power		
75	VDD	Power		
76	PA14 **	I/O	SYS_JTCK-SWCLK	
77	PA15	I/O	USART1_TX	
79	PC11	I/O	SDIO_D3	
89	PB3 **	I/O	SYS_JTDO-SWO	

Pin Number LQFP100	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
90	PB4	I/O	SPI1_MISO	
92	PB6	I/O	I2C1_SCL	
93	PB7	I/O	I2C1_SDA	
94	BOOT0	Boot		
99	VSS	Power		
100	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. 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. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

5.2.1. Parameter Settings:

System Parameters:

VDD voltage (V)	3.3
Instruction Cache	Enabled
Prefetch Buffer	Enabled
Data Cache	Enabled
Flash Latency(WS)	3 WS (4 CPU cycle)

RCC Parameters:

HSI Calibration Value	16

Power Parameters:

Power Regulatror Voltage Scale	Power Regulator Voltage Scale 1

5.3. SDIO

Mode: SD 4 bits Wide bus

5.3.1. Parameter Settings:

SDIO parameters:

SDIOCLK clock divide factor	0

5.4. SPI1

Mode: Full-Duplex Master

5.4.1. Parameter Settings:

Basic Parameters:

Frame Format	Motorola
Data Size	8 Bits
First Bit	MSB First

Clock Parameters:

Prescaler (for Baud Rate)	2
Baud Rate	**24.0 MBits/s ***
Clock Polarity (CPOL)	Low
Clock Phase (CPHA)	1 Edge

Advanced Parameters:

CRC Calculation	Disabled
NSS Signal Type	Software

5.5. SYS

Timebase Source: SysTick

5.6. TIM4

Clock Source : Internal Clock

Channel3: PWM Generation CH3

5.6.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	0
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	0
Internal Clock Division (CKD)	No Division

Trigger Output (TRGO) Parameters:

Master/Slave Mode	Disable (no sync between this TIM (Master) and its Slaves
Trigger Event Selection	Reset (UG bit from TIMx_EGR)

PWM Generation Channel 3:

Mode	PWM mode 1
Pulse (16 bits value)	0
Fast Mode	Disable
CH Polarity	High

5.7. USART1

Mode: Asynchronous

5.7.1. 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

5.8. USART2

Mode: Asynchronous

5.8.1. 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

5.9. FATFS

mode: SD Card

5.9.1. Set Defines:

Version:

FATFS version	R0.11

Function Parameters:

FS_TINY (Tiny mode)	Disabled
FS_READONLY (Read-only mode)	Disabled
FS_MINIMIZE (Minimization level)	Disabled
USE_STRFUNC (String functions)	Enabled with LF -> CRLF conversion
USE_FIND (Find functions)	Disabled
USE_MKFS (Make filesystem function)	Enabled
USE_FORWARD (Forward function)	Disabled
USE_LABEL (Volume label functions)	Disabled
USE_FASTSEEK (Fast seek function)	Enabled

Locale and Namespace Parameters:

CODE_PAGE (Code page on target)	Latin 1 (Windows)
USE_LFN (Use Long Filename)	Disabled
MAX_LFN (Max Long Filename)	255
LFN_UNICODE (Enable Unicode)	ANSI/OEM
STRF_ENCODE (Character encoding)	UTF-8
FS_RPATH (Relative Path)	Disabled

Physical Drive Parameters:

VOLUMES (Logical drives)	1
MAX_SS (Maximum Sector Size)	512
MIN_SS (Minimum Sector Size)	512
MULTI_PARTITION (Volume partitions feature)	Disabled
USE_TRIM (Erase feature)	Disabled
FS_NOFSINFO (Force full FAT scan)	0

System Parameters:

FS_NORTC (Timestamp feature)	Dynamic timestamp
NORTC_YEAR (Year for timestamp)	2015
NORTC_MON (Month for timestamp)	6
NORTC_MDAY (Day for timestamp)	4
WORD_ACCESS (Platform dependent access option)	Byte access
FS_REENTRANT (Re-Entrancy)	Disabled
FS_TIMEOUT (Timeout ticks)	1000
SYNC_t (O/S sync object)	osSemaphoreId
FS_LOCK (Number of files opened simultaneously)	2

5.9.2. IPs instances:

SDIO/SDMMC:

SDIO instance	SDIO1

*** 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	PB6	I2C1_SCL	Alternate Function Open Drain	Pull-up	**High ***	
	PB7	I2C1_SDA	Alternate Function Open Drain	Pull-up	**High ***	
RCC	PH0 - OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	
	PH1 - OSC_OUT	RCC_OSC_OUT	n/a	n/a	n/a	
SDIO	PA6	SDIO_CMD	Alternate Function Push Pull	No pull-up and no pull-down	High	
	PB15	SDIO_CK	Alternate Function Push Pull	No pull-up and no pull-down	High	
	PC8	SDIO_D0	Alternate Function Push Pull	No pull-up and no pull-down	High	
	PC9	SDIO_D1	Alternate Function Push Pull	No pull-up and no pull-down	High	
	PA9	SDIO_D2	Alternate Function Push Pull	No pull-up and no pull-down	High	
	PC11	SDIO_D3	Alternate Function Push Pull	No pull-up and no pull-down	High	
SPI1	PA5	SPI1_SCK	Alternate Function Push Pull	No pull-up and no pull-down	**High ***	Dac_Sck
	PA7	SPI1_MOSI	Alternate Function Push Pull	No pull-up and no pull-down	**High ***	Dac_Din
	PB4	SPI1_MISO	Alternate Function Push Pull	No pull-up and no pull-down	**High ***	
TIM4	PD14	TIM4_CH3	Alternate Function Push Pull	No pull-up and no pull-down	Low	PWM(T4C3)
USART1	PA10	USART1_RX	Alternate Function Push Pull	Pull-up	**High ***	Esp_Tx
	PA15	USART1_TX	Alternate Function Push Pull	Pull-up	**High ***	
USART2	PA2	USART2_TX	Alternate Function Push Pull	Pull-up	**High ***	PcTx
	PA3	USART2_RX	Alternate Function Push Pull	Pull-up	**High ***	PcRx
Single Mapped Signals	PA13	SYS_JTMS-SWDIO	n/a	n/a	n/a	
	PA14	SYS_JTCK-SWCLK	n/a	n/a	n/a	
	PB3	SYS_JTDO-SWO	n/a	n/a	n/a	
GPIO	PA4	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	Dac_Ss
	PC7	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	SD-CARD-det

6.2. DMA configuration

nothing configured in DMA service

6.3. NVIC configuration

Interrupt Table	Enable	Preenmption Priority	SubPriority
System tick timer	true	0	0
Non maskable interrupt	unused		
Hard fault interrupt	unused		
Memory management fault	unused		
Pre-fetch fault, memory access fault	unused		
Undefined instruction or illegal state	unused		
Debug monitor	unused		
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
TIM4 global interrupt	unused		
I2C1 event interrupt	unused		
I2C1 error interrupt	unused		
SPI1 global interrupt	unused		
USART1 global interrupt	unused		
USART2 global interrupt	unused		
SDIO global interrupt	unused		

*** User modified value**

7. Power Plugin report

7.1. Microcontroller Selection

Series	STM32F4
Line	STM32F411
MCU	STM32F411VETx
Datasheet	026289_Rev4

7.2. Parameter Selection

Temperature	25
Vdd	null