1. Description

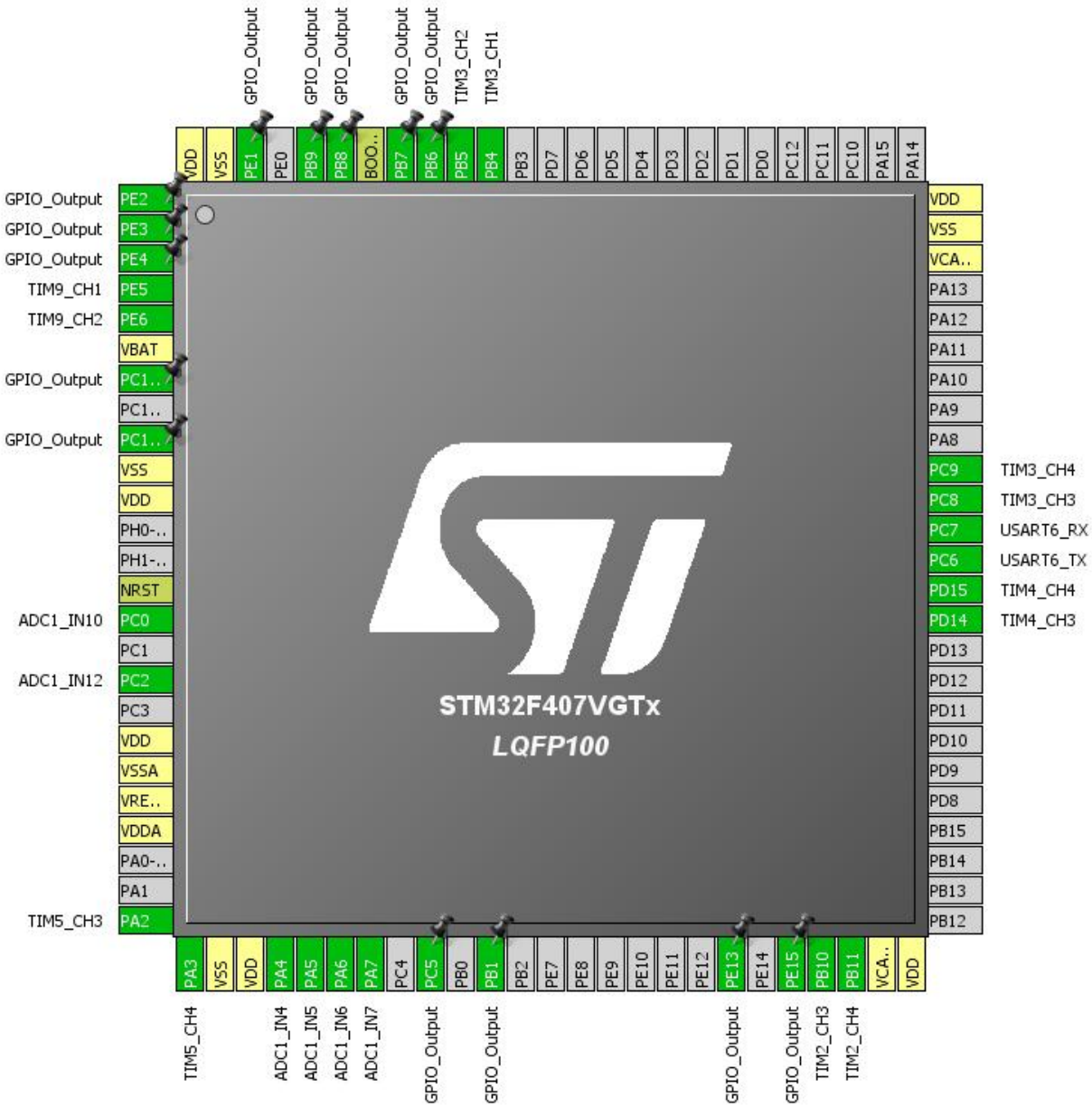
1.1. Project

Project Name	mam2018
Board Name	No information
Generated with:	STM32CubeMX 4.23.0
Date	04/21/2018

1.2. MCU

MCU Series	STM32F4
MCU Line	STM32F407/417
MCU name	STM32F407VGTx
MCU Package	LQFP100
MCU Pin number	100

2. Pinout Configuration



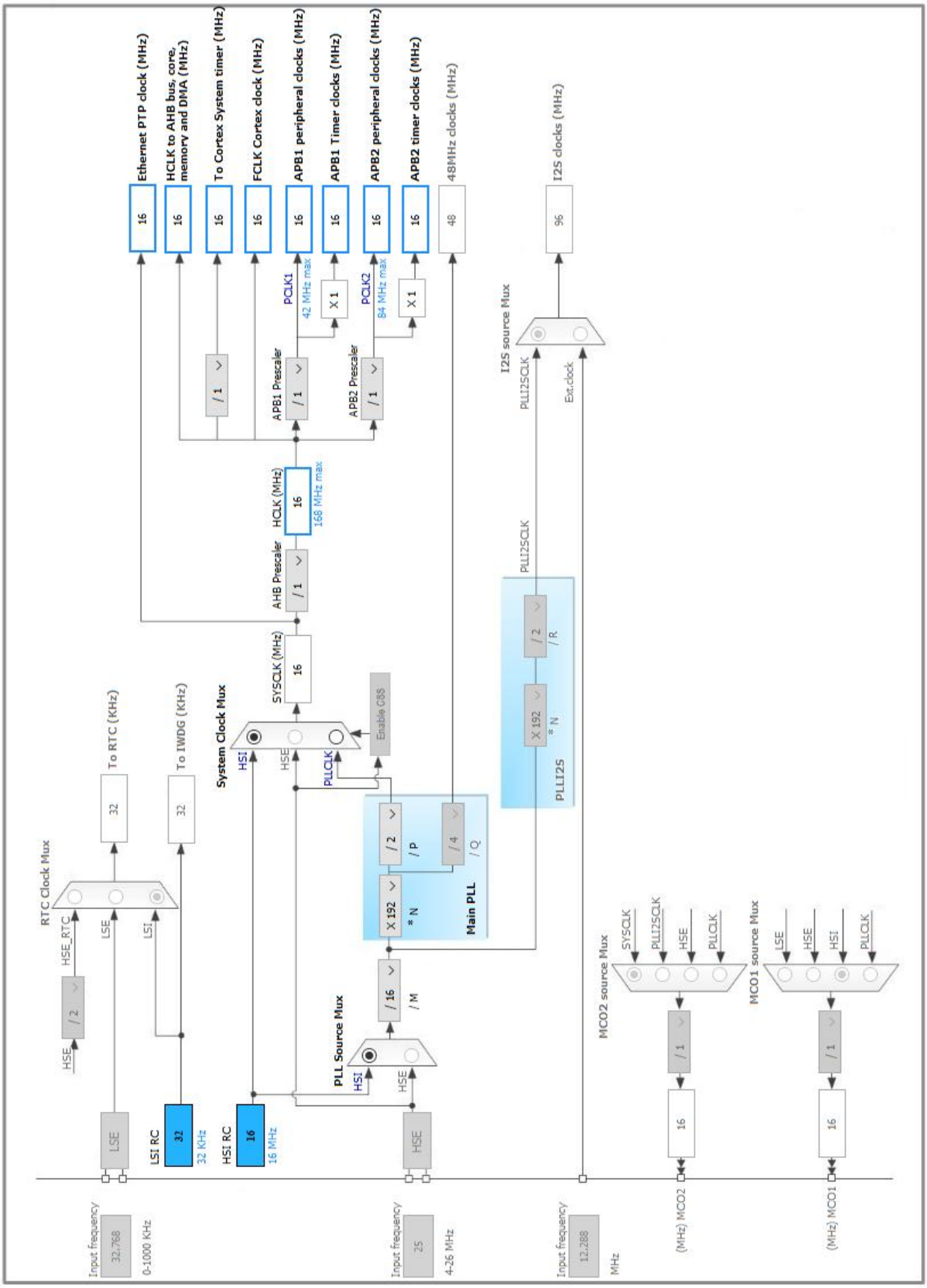
3. Pins Configuration

Pin Number LQFP100	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	PE2 *	I/O	GPIO_Output	
2	PE3 *	I/O	GPIO_Output	
3	PE4 *	I/O	GPIO_Output	
4	PE5	I/O	TIM9_CH1	
5	PE6	I/O	TIM9_CH2	
6	VBAT	Power		
7	PC13-ANTI_TAMP *	I/O	GPIO_Output	
9	PC15-OSC32_OUT *	I/O	GPIO_Output	
10	VSS	Power		
11	VDD	Power		
14	NRST	Reset		
15	PC0	I/O	ADC1_IN10	
17	PC2	I/O	ADC1_IN12	
19	VDD	Power		
20	VSSA	Power		
21	VREF+	Power		
22	VDDA	Power		
25	PA2	I/O	TIM5_CH3	
26	PA3	I/O	TIM5_CH4	
27	VSS	Power		
28	VDD	Power		
29	PA4	I/O	ADC1_IN4	
30	PA5	I/O	ADC1_IN5	
31	PA6	I/O	ADC1_IN6	
32	PA7	I/O	ADC1_IN7	
34	PC5 *	I/O	GPIO_Output	
36	PB1 *	I/O	GPIO_Output	
44	PE13 *	I/O	GPIO_Output	
46	PE15 *	I/O	GPIO_Output	
47	PB10	I/O	TIM2_CH3	
48	PB11	I/O	TIM2_CH4	
49	VCAP_1	Power		
50	VDD	Power		
61	PD14	I/O	TIM4_CH3	
62	PD15	I/O	TIM4_CH4	
63	PC6	I/O	USART6_TX	

Pin Number LQFP100	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
64	PC7	I/O	USART6_RX	
65	PC8	I/O	TIM3_CH3	
66	PC9	I/O	TIM3_CH4	
73	VCAP_2	Power		
74	VSS	Power		
75	VDD	Power		
90	PB4	I/O	TIM3_CH1	
91	PB5	I/O	TIM3_CH2	
92	PB6 *	I/O	GPIO_Output	
93	PB7 *	I/O	GPIO_Output	
94	BOOT0	Boot		
95	PB8 *	I/O	GPIO_Output	
96	PB9 *	I/O	GPIO_Output	
98	PE1 *	I/O	GPIO_Output	
99	VSS	Power		
100	VDD	Power		

* The pin is affected with an I/O function

4. Clock Tree Configuration



5. IPs and Middleware Configuration

5.1. ADC1

mode: IN4

mode: IN5

mode: IN6

mode: IN7

mode: IN10

mode: IN12

5.1.1. Parameter Settings:

ADCs_Common_Settings:

Mode	Independent mode

ADC_Settings:

Clock Prescaler	PCLK2 divided by 2
Resolution	12 bits (15 ADC Clock cycles)
Data Alignment	Right alignment
Scan Conversion Mode	Disabled
Continuous Conversion Mode	Disabled
Discontinuous Conversion Mode	Disabled
DMA Continuous Requests	Disabled
End Of Conversion Selection	EOC flag at the end of single channel conversion

ADC_Regular_ConversionMode:

Number Of Conversion	1
External Trigger Conversion Source	Regular Conversion launched by software
External Trigger Conversion Edge	None
Rank	1
Channel	Channel 4
Sampling Time	3 Cycles

ADC_Injected_ConversionMode:

Number Of Conversions	0

WatchDog:

Enable Analog WatchDog Mode	false

5.2. SYS

Timebase Source: SysTick

5.3. TIM2

Channel3: PWM Generation CH3

Channel4: PWM Generation CH4

5.3.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	0
Counter Mode	Up
Counter Period (AutoReload Register - 32 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 (32 bits value)	0
Fast Mode	Disable
CH Polarity	High

PWM Generation Channel 4:

Mode	PWM mode 1
Pulse (32 bits value)	0
Fast Mode	Disable
CH Polarity	High

5.4. TIM3

Channel1: PWM Generation CH1

Channel2: PWM Generation CH2

Channel3: PWM Generation CH3

Channel4: PWM Generation CH4

5.4.1. 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 1:

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

PWM Generation Channel 2:

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

PWM Generation Channel 3:

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

PWM Generation Channel 4:

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

5.5. TIM4

Channel3: PWM Generation CH3

Channel4: PWM Generation CH4

5.5.1. 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

PWM Generation Channel 4:

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

5.6. TIM5

Channel3: PWM Generation CH3

Channel4: PWM Generation CH4

5.6.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	0
Counter Mode	Up
Counter Period (AutoReload Register - 32 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 (32 bits value)	0
Fast Mode	Disable
CH Polarity	High

PWM Generation Channel 4:

Mode	PWM mode 1
Pulse (32 bits value)	0
Fast Mode	Disable
CH Polarity	High

5.7. TIM9

Channel1: PWM Generation CH1
Channel2: PWM Generation CH2

5.7.1. 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

PWM Generation Channel 1:

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

PWM Generation Channel 2:

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

5.8. USART6

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

*** User modified value**

6. System Configuration

6.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
ADC1	PC0	ADC1_IN10	Analog mode	No pull-up and no pull-down	n/a	
	PC2	ADC1_IN12	Analog mode	No pull-up and no pull-down	n/a	
	PA4	ADC1_IN4	Analog mode	No pull-up and no pull-down	n/a	
	PA5	ADC1_IN5	Analog mode	No pull-up and no pull-down	n/a	
	PA6	ADC1_IN6	Analog mode	No pull-up and no pull-down	n/a	
	PA7	ADC1_IN7	Analog mode	No pull-up and no pull-down	n/a	
TIM2	PB10	TIM2_CH3	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PB11	TIM2_CH4	Alternate Function Push Pull	No pull-up and no pull-down	Low	
TIM3	PC8	TIM3_CH3	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PC9	TIM3_CH4	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PB4	TIM3_CH1	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PB5	TIM3_CH2	Alternate Function Push Pull	No pull-up and no pull-down	Low	
TIM4	PD14	TIM4_CH3	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PD15	TIM4_CH4	Alternate Function Push Pull	No pull-up and no pull-down	Low	
TIM5	PA2	TIM5_CH3	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PA3	TIM5_CH4	Alternate Function Push Pull	No pull-up and no pull-down	Low	
TIM9	PE5	TIM9_CH1	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PE6	TIM9_CH2	Alternate Function Push Pull	No pull-up and no pull-down	Low	
USART6	PC6	USART6_TX	Alternate Function Push Pull	Pull-up	**Very High ***	
	PC7	USART6_RX	Alternate Function Push Pull	Pull-up	**Very High ***	
GPIO	PE2	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PE3	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PE4	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PC13-ANTI_TAMP	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PC15-OSC32_OUT	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PC5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PB1	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PE13	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PE15	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
	PB6	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PB7	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PB8	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PB9	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PE1	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	

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		
ADC1, ADC2 and ADC3 global interrupts	unused		
TIM1 break interrupt and TIM9 global interrupt	unused		
TIM2 global interrupt	unused		
TIM3 global interrupt	unused		
TIM4 global interrupt	unused		
TIM5 global interrupt	unused		
USART6 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	STM32F407VGTx
Datasheet	022152_Rev8

7.2. Parameter Selection

Temperature	25
Vdd	3.3