

1. Description

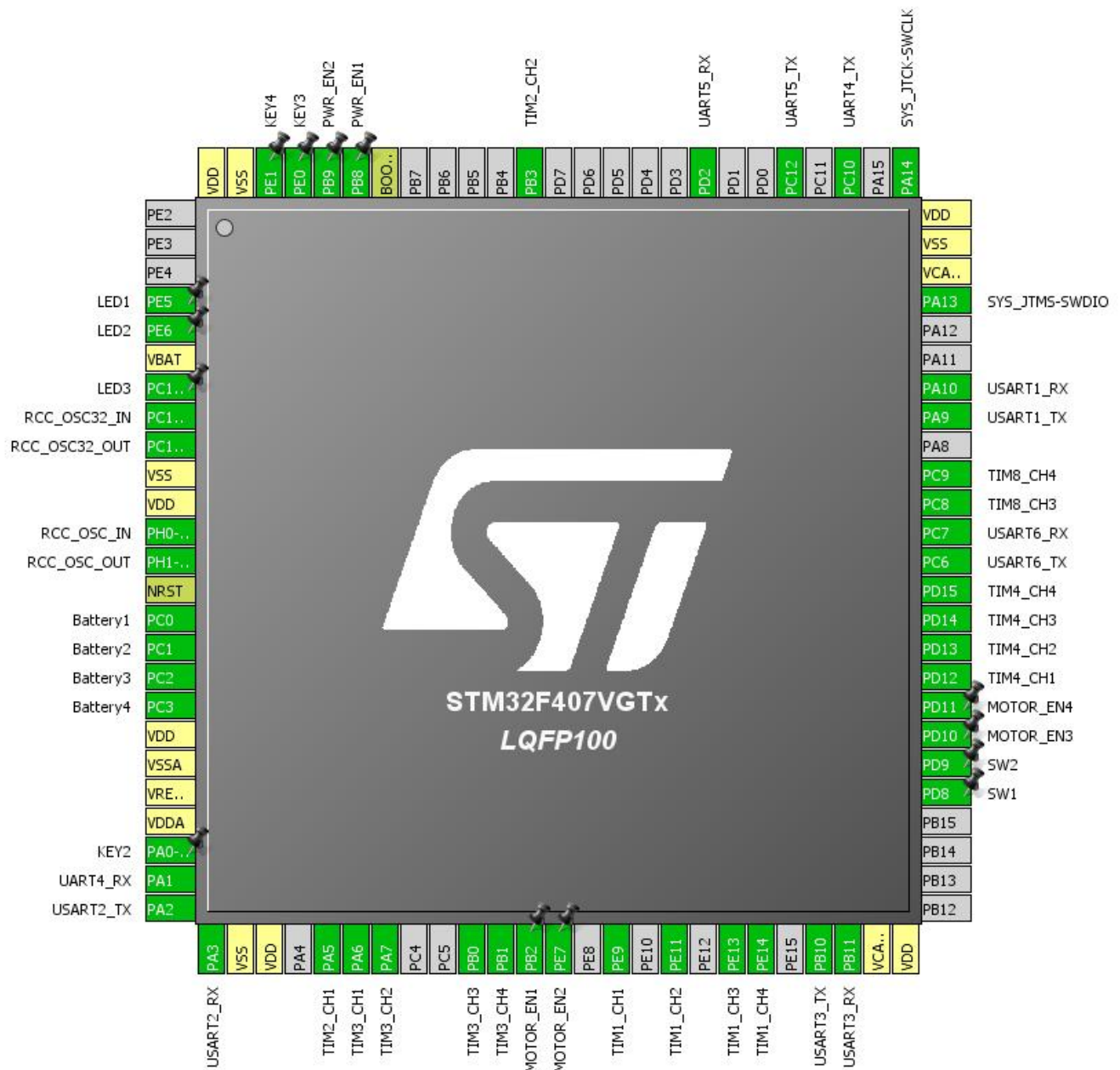
1.1. Project

Project Name	GrassCuttor
Board Name	GrassCuttor
Generated with:	STM32CubeMX 4.27.0
Date	11/27/2018

1.2. MCU

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

2. Pinout Configuration



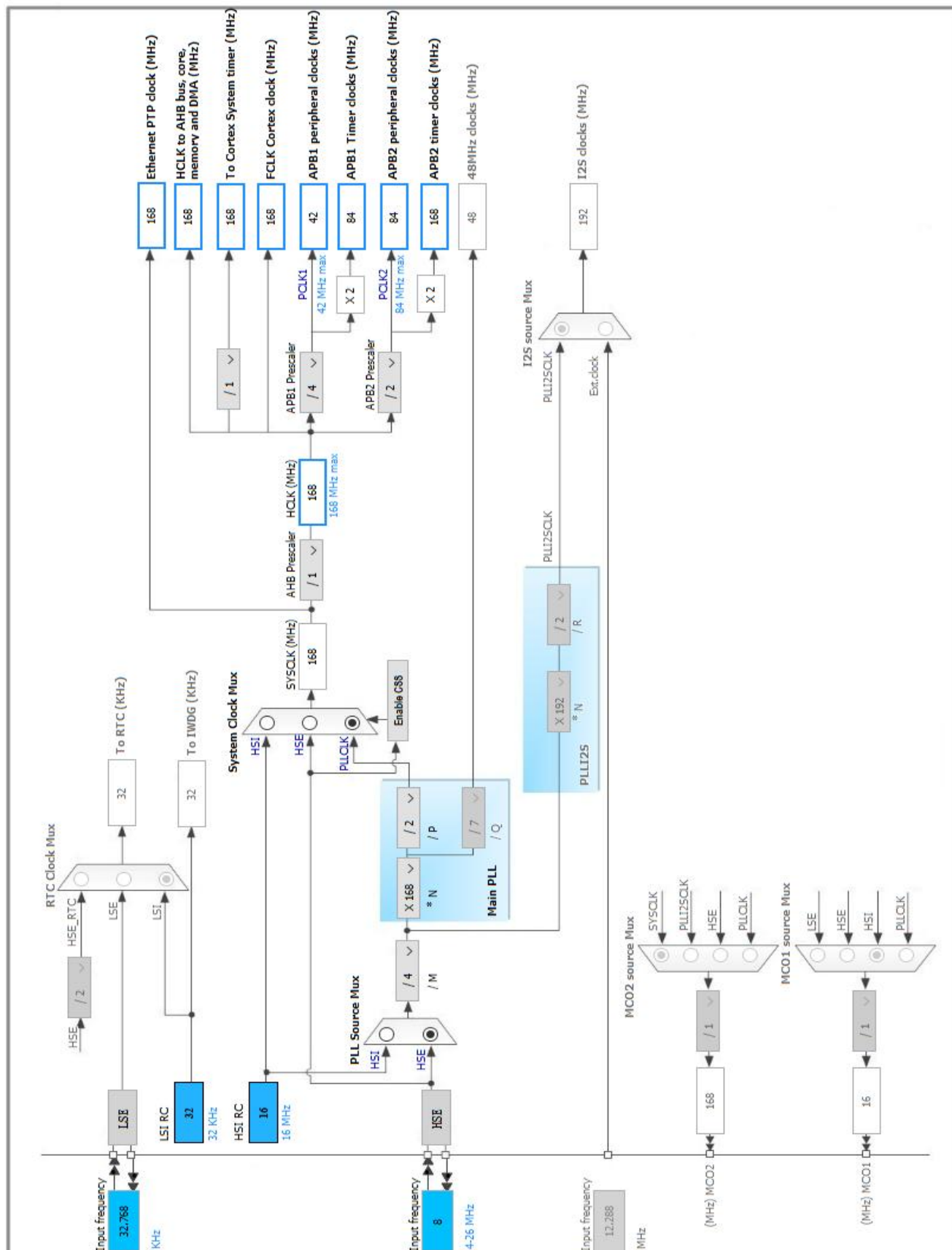
3. Pins Configuration

Pin Number LQFP100	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
4	PE5 *	I/O	GPIO_Output	LED1
5	PE6 *	I/O	GPIO_Output	LED2
6	VBAT	Power		
7	PC13-ANTI_TAMP *	I/O	GPIO_Output	LED3
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		
15	PC0	I/O	ADC1_IN10	Battery1
16	PC1	I/O	ADC1_IN11	Battery2
17	PC2	I/O	ADC1_IN12	Battery3
18	PC3	I/O	ADC1_IN13	Battery4
19	VDD	Power		
20	VSSA	Power		
21	VREF+	Power		
22	VDDA	Power		
23	PA0-WKUP *	I/O	GPIO_Input	KEY2
24	PA1	I/O	UART4_RX	
25	PA2	I/O	USART2_TX	
26	PA3	I/O	USART2_RX	
27	VSS	Power		
28	VDD	Power		
30	PA5	I/O	TIM2_CH1	
31	PA6	I/O	TIM3_CH1	
32	PA7	I/O	TIM3_CH2	
35	PB0	I/O	TIM3_CH3	
36	PB1	I/O	TIM3_CH4	
37	PB2 *	I/O	GPIO_Output	MOTOR_EN1
38	PE7 *	I/O	GPIO_Output	MOTOR_EN2
40	PE9	I/O	TIM1_CH1	
42	PE11	I/O	TIM1_CH2	
44	PE13	I/O	TIM1_CH3	
45	PE14	I/O	TIM1_CH4	

Pin Number LQFP100	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
47	PB10	I/O	USART3_TX	
48	PB11	I/O	USART3_RX	
49	VCAP_1	Power		
50	VDD	Power		
55	PD8 *	I/O	GPIO_Output	SW1
56	PD9 *	I/O	GPIO_Output	SW2
57	PD10 *	I/O	GPIO_Output	MOTOR_EN3
58	PD11 *	I/O	GPIO_Output	MOTOR_EN4
59	PD12	I/O	TIM4_CH1	
60	PD13	I/O	TIM4_CH2	
61	PD14	I/O	TIM4_CH3	
62	PD15	I/O	TIM4_CH4	
63	PC6	I/O	USART6_TX	
64	PC7	I/O	USART6_RX	
65	PC8	I/O	TIM8_CH3	
66	PC9	I/O	TIM8_CH4	
68	PA9	I/O	USART1_TX	
69	PA10	I/O	USART1_RX	
72	PA13	I/O	SYS_JTMS-SWDIO	
73	VCAP_2	Power		
74	VSS	Power		
75	VDD	Power		
76	PA14	I/O	SYS_JTCK-SWCLK	
78	PC10	I/O	UART4_TX	
80	PC12	I/O	UART5_TX	
83	PD2	I/O	UART5_RX	
89	PB3	I/O	TIM2_CH2	
94	BOOT0	Boot		
95	PB8 *	I/O	GPIO_Output	PWR_EN1
96	PB9 *	I/O	GPIO_Output	PWR_EN2
97	PE0	I/O	GPIO_EXTI0	KEY3
98	PE1	I/O	GPIO_EXTI1	KEY4
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: IN10

mode: IN11

mode: IN12

mode: IN13

5.1.1. Parameter Settings:

ADCs_Common_Settings:

Mode Independent mode

ADC_Settings:

Clock Prescaler PCLK2 divided by 4

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 10

Sampling Time 3 Cycles

ADC_Injected_ConversionMode:

Number Of Conversions 0

WatchDog:

Enable Analog WatchDog Mode false

5.2. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

Low Speed Clock (LSE) : 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)	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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5.3. SYS

Debug: Serial Wire

Timebase Source: TIM6

5.4. TIM1

Channel1: Input Capture direct mode

Channel2: Input Capture direct mode

Channel3: Input Capture direct mode

Channel4: Input Capture direct mode

5.4.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	167 *
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	0xffff *
Internal Clock Division (CKD)	No Division
Repetition Counter (RCR - 8 bits value)	0

Trigger Output (TRGO) Parameters:

Master/Slave Mode (MSM bit)	Disable (Trigger input effect not delayed)
Trigger Event Selection	Reset (UG bit from TIMx_EGR)

Input Capture Channel 1:

Polarity Selection	Rising Edge
IC Selection	Direct
Prescaler Division Ratio	No division
Input Filter (4 bits value)	0

Input Capture Channel 2:

Polarity Selection	Rising Edge
IC Selection	Direct
Prescaler Division Ratio	No division
Input Filter (4 bits value)	0

Input Capture Channel 3:

Polarity Selection	Rising Edge
IC Selection	Direct
Prescaler Division Ratio	No division
Input Filter (4 bits value)	0

Input Capture Channel 4:

Polarity Selection	Rising Edge
IC Selection	Direct
Prescaler Division Ratio	No division
Input Filter (4 bits value)	0

5.5. TIM2

Channel1: PWM Generation CH1

Channel2: PWM Generation CH2

5.5.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	83 *
Counter Mode	Up
Counter Period (AutoReload Register - 32 bits value)	999 *
Internal Clock Division (CKD)	No Division

Trigger Output (TRGO) Parameters:

Master/Slave Mode (MSM bit)	Disable (Trigger input effect not delayed)
Trigger Event Selection	Reset (UG bit from TIMx_EGR)

PWM Generation Channel 1:

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

PWM Generation Channel 2:

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

5.6. TIM3

Channel1: Input Capture direct mode

Channel2: Input Capture direct mode

Channel3: Input Capture direct mode

Channel4: Input Capture direct mode

5.6.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	83 *
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	0xffff *
Internal Clock Division (CKD)	No Division

Trigger Output (TRGO) Parameters:

Master/Slave Mode (MSM bit)	Disable (Trigger input effect not delayed)
Trigger Event Selection	Reset (UG bit from TIMx_EGR)

Input Capture Channel 1:

Polarity Selection	Rising Edge
IC Selection	Direct
Prescaler Division Ratio	No division
Input Filter (4 bits value)	0

Input Capture Channel 2:

Polarity Selection	Rising Edge
IC Selection	Direct
Prescaler Division Ratio	No division
Input Filter (4 bits value)	0

Input Capture Channel 3:

Polarity Selection	Rising Edge
IC Selection	Direct
Prescaler Division Ratio	No division
Input Filter (4 bits value)	0

Input Capture Channel 4:

Polarity Selection	Rising Edge
IC Selection	Direct
Prescaler Division Ratio	No division
Input Filter (4 bits value)	0

5.7. TIM4

Channel1: PWM Generation CH1

Channel2: PWM Generation CH2

Channel3: PWM Generation CH3

Channel4: PWM Generation CH4

5.7.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	83 *
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	999 *
Internal Clock Division (CKD)	No Division

Trigger Output (TRGO) Parameters:

Master/Slave Mode (MSM bit)	Disable (Trigger input effect not delayed)
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

5.8. TIM8

Channel3: PWM Generation CH3

Channel4: PWM Generation CH4

5.8.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	167 *
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	999 *
Internal Clock Division (CKD)	No Division
Repetition Counter (RCR - 8 bits value)	0

Trigger Output (TRGO) Parameters:

Master/Slave Mode (MSM bit)	Disable (Trigger input effect not delayed)
Trigger Event Selection	Reset (UG bit from TIMx_EGR)

Break And Dead Time management - BRK Configuration:

BRK State	Disable
BRK Polarity	High

Break And Dead Time management - Output Configuration:

Automatic Output State	Disable
Off State Selection for Run Mode (OSSR)	Disable
Off State Selection for Idle Mode (OSSI)	Disable
Lock Configuration	Off

PWM Generation Channel 3:

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

PWM Generation Channel 4:

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

5.9. UART4

Mode: Asynchronous

5.9.1. 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

5.10. UART5

Mode: Asynchronous

5.10.1. 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

5.11. USART1

Mode: Asynchronous

5.11.1. Parameter Settings:

Basic Parameters:

Baud Rate	9600 *
Word Length	8 Bits (including Parity)
Parity	None
Stop Bits	1

Advanced Parameters:

Data Direction	Receive and Transmit
Over Sampling	16 Samples

5.12. USART2

Mode: Asynchronous

5.12.1. Parameter Settings:

Basic Parameters:

Baud Rate	9600 *
Word Length	8 Bits (including Parity)
Parity	None
Stop Bits	1

Advanced Parameters:

Data Direction	Receive and Transmit
Over Sampling	16 Samples

5.13. USART3

Mode: Asynchronous

5.13.1. Parameter Settings:

Basic Parameters:

Baud Rate	9600 *
Word Length	8 Bits (including Parity)
Parity	None
Stop Bits	1

Advanced Parameters:

Data Direction	Receive and Transmit
Over Sampling	16 Samples

5.14. USART6

Mode: Asynchronous

5.14.1. Parameter Settings:

Basic Parameters:

Baud Rate	9600 *
Word Length	8 Bits (including Parity)

Parity	None
Stop Bits	1
Advanced Parameters:	
Data Direction	Receive and Transmit
Over Sampling	16 Samples

5.15. FREERTOS

mode: Enabled

5.15.1. Config parameters:

Versions:

FreeRTOS version	9.0.0
CMSIS-RTOS version	1.02

Kernel settings:

USE_PREEMPTION	Enabled
CPU_CLOCK_HZ	SystemCoreClock
TICK_RATE_HZ	1000
MAX_PRIORITIES	7
MINIMAL_STACK_SIZE	128
MAX_TASK_NAME_LEN	16
USE_16_BIT_TICKS	Disabled
IDLE_SHOULD_YIELD	Enabled
USE_MUTEXES	Enabled
USE_RECURSIVE_MUTEXES	Disabled
USE_COUNTING_SEMAPHORES	Disabled
QUEUE_REGISTRY_SIZE	8
USE_APPLICATION_TASK_TAG	Disabled
ENABLE_BACKWARD_COMPATIBILITY	Enabled
USE_PORT_OPTIMISED_TASK_SELECTION	Enabled
USE_TICKLESS_IDLE	Disabled
USE_TASK_NOTIFICATIONS	Enabled

Memory management settings:

Memory Allocation	Dynamic
TOTAL_HEAP_SIZE	15360
Memory Management scheme	heap_4

Hook function related definitions:

USE_IDLE_HOOK	Disabled
USE_TICK_HOOK	Disabled
USE_MALLOC_FAILED_HOOK	Disabled
USE_DAEMON_TASK_STARTUP_HOOK	Disabled

CHECK_FOR_STACK_OVERFLOW Disabled

Run time and task stats gathering related definitions:

GENERATE_RUN_TIME_STATS Disabled

USE_TRACE_FACILITY Disabled

USE_STATS_FORMATTING_FUNCTIONS Disabled

Co-routine related definitions:

USE_CO_ROUTINES Disabled

MAX_CO_ROUTINE_PRIORITIES 2

Software timer definitions:

USE_TIMERS Disabled

Interrupt nesting behaviour configuration:

LIBRARY_LOWEST_INTERRUPT_PRIORITY 15

LIBRARY_MAX_SYSCALL_INTERRUPT_PRIORITY 5

5.15.2. Include parameters:

Include definitions:

vTaskPrioritySet	Enabled
uxTaskPriorityGet	Enabled
vTaskDelete	Enabled
vTaskCleanUpResources	Disabled
vTaskSuspend	Enabled
vTaskDelayUntil	Enabled *
vTaskDelay	Enabled
xTaskGetSchedulerState	Enabled
xTaskResumeFromISR	Enabled
xQueueGetMutexHolder	Disabled
xSemaphoreGetMutexHolder	Disabled
pcTaskGetTaskName	Disabled
uxTaskGetStackHighWaterMark	Disabled
xTaskGetCurrentTaskHandle	Disabled
eTaskGetState	Disabled
xEventGroupSetBitFromISR	Disabled
xTimerPendFunctionCall	Disabled
xTaskAbortDelay	Disabled
xTaskGetHandle	Disabled

* 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	Battery1
	PC1	ADC1_IN11	Analog mode	No pull-up and no pull-down	n/a	Battery2
	PC2	ADC1_IN12	Analog mode	No pull-up and no pull-down	n/a	Battery3
	PC3	ADC1_IN13	Analog mode	No pull-up and no pull-down	n/a	Battery4
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	
SYS	PA13	SYS_JTMS-SWDIO	n/a	n/a	n/a	
	PA14	SYS_JTCK-SWCLK	n/a	n/a	n/a	
TIM1	PE9	TIM1_CH1	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PE11	TIM1_CH2	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PE13	TIM1_CH3	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PE14	TIM1_CH4	Alternate Function Push Pull	No pull-up and no pull-down	Low	
TIM2	PA5	TIM2_CH1	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PB3	TIM2_CH2	Alternate Function Push Pull	No pull-up and no pull-down	Low	
TIM3	PA6	TIM3_CH1	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PA7	TIM3_CH2	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PB0	TIM3_CH3	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PB1	TIM3_CH4	Alternate Function Push Pull	No pull-up and no pull-down	Low	
TIM4	PD12	TIM4_CH1	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PD13	TIM4_CH2	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	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	
TIM8	PC8	TIM8_CH3	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PC9	TIM8_CH4	Alternate Function Push Pull	No pull-up and no pull-down	Low	
UART4	PA1	UART4_RX	Alternate Function Push Pull	Pull-up	Very High *	
	PC10	UART4_TX	Alternate Function Push Pull	Pull-up	Very High *	

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
UART5	PC12	UART5_TX	Alternate Function Push Pull	Pull-up	Very High *	
	PD2	UART5_RX	Alternate Function Push Pull	Pull-up	Very High *	
USART1	PA9	USART1_TX	Alternate Function Push Pull	Pull-up	Very High *	
	PA10	USART1_RX	Alternate Function Push Pull	Pull-up	Very High *	
USART2	PA2	USART2_TX	Alternate Function Push Pull	Pull-up	Very High *	
	PA3	USART2_RX	Alternate Function Push Pull	Pull-up	Very High *	
USART3	PB10	USART3_TX	Alternate Function Push Pull	Pull-up	Very High *	
	PB11	USART3_RX	Alternate Function Push Pull	Pull-up	Very High *	
USART6	PC6	USART6_TX	Alternate Function Push Pull	Pull-up	Very High *	
	PC7	USART6_RX	Alternate Function Push Pull	Pull-up	Very High *	
GPIO	PE5	GPIO_Output	Output Push Pull	Pull-up *	Low	LED1
	PE6	GPIO_Output	Output Push Pull	Pull-up *	Low	LED2
	PC13-ANTI_TAMP	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED3
	PA0-WKUP	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	KEY2
	PB2	GPIO_Output	Output Push Pull	Pull-down *	Low	MOTOR_EN1
	PE7	GPIO_Output	Output Push Pull	Pull-up *	Low	MOTOR_EN2
	PD8	GPIO_Output	Output Push Pull	Pull-down *	Low	SW1
	PD9	GPIO_Output	Output Push Pull	Pull-down *	Low	SW2
	PD10	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	MOTOR_EN3
	PD11	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	MOTOR_EN4
	PB8	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	PWR_EN1
	PB9	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	PWR_EN2
	PE0	GPIO_EXTI0	External Interrupt Mode with Rising edge trigger detection	Pull-up *	n/a	KEY3
	PE1	GPIO_EXTI1	External Interrupt Mode with Rising edge trigger detection	Pull-up *	n/a	KEY4

6.2. DMA configuration

DMA request	Stream	Direction	Priority
UART5_RX	DMA1_Stream0	Peripheral To Memory	Low
UART5_TX	DMA1_Stream7	Memory To Peripheral	Low
UART4_RX	DMA1_Stream2	Peripheral To Memory	Low
UART4_TX	DMA1_Stream4	Memory To Peripheral	Low
USART2_TX	DMA1_Stream6	Memory To Peripheral	Low
USART2_RX	DMA1_Stream5	Peripheral To Memory	Low
USART3_TX	DMA1_Stream3	Memory To Peripheral	Low
USART3_RX	DMA1_Stream1	Peripheral To Memory	Low
ADC1	DMA2_Stream0	Peripheral To Memory	Low
USART1_TX	DMA2_Stream7	Memory To Peripheral	Low
USART1_RX	DMA2_Stream2	Peripheral To Memory	Low
USART6_TX	DMA2_Stream6	Memory To Peripheral	Low
USART6_RX	DMA2_Stream1	Peripheral To Memory	Low

UART5_RX: DMA1_Stream0 DMA request Settings:

Mode: **Circular ***
 Use fifo: Disable
 Peripheral Increment: Disable
 Memory Increment: **Enable ***
 Peripheral Data Width: Byte
 Memory Data Width: Byte

UART5_TX: DMA1_Stream7 DMA request Settings:

Mode: Normal
 Use fifo: Disable
 Peripheral Increment: Disable
 Memory Increment: **Enable ***
 Peripheral Data Width: Byte
 Memory Data Width: Byte

UART4_RX: DMA1_Stream2 DMA request Settings:

Mode: **Circular ***
 Use fifo: Disable

Peripheral Increment: Disable
Memory Increment: **Enable ***
Peripheral Data Width: Byte
Memory Data Width: Byte

UART4_TX: DMA1_Stream4 DMA request Settings:

Mode: Normal
Use fifo: Disable
Peripheral Increment: Disable
Memory Increment: **Enable ***
Peripheral Data Width: Byte
Memory Data Width: Byte

USART2_TX: DMA1_Stream6 DMA request Settings:

Mode: Normal
Use fifo: Disable
Peripheral Increment: Disable
Memory Increment: **Enable ***
Peripheral Data Width: Byte
Memory Data Width: Byte

USART2_RX: DMA1_Stream5 DMA request Settings:

Mode: **Circular ***
Use fifo: Disable
Peripheral Increment: Disable
Memory Increment: **Enable ***
Peripheral Data Width: Byte
Memory Data Width: Byte

USART3_TX: DMA1_Stream3 DMA request Settings:

Mode: Normal
Use fifo: Disable
Peripheral Increment: Disable
Memory Increment: **Enable ***
Peripheral Data Width: Byte

Memory Data Width: Byte

USART3_RX: DMA1_Stream1 DMA request Settings:

Mode: **Circular ***
Use fifo: Disable
Peripheral Increment: Disable
Memory Increment: **Enable ***
Peripheral Data Width: Byte
Memory Data Width: Byte

ADC1: DMA2_Stream0 DMA request Settings:

Mode: **Circular ***
Use fifo: Disable
Peripheral Increment: Disable
Memory Increment: **Enable ***
Peripheral Data Width: Half Word
Memory Data Width: Half Word

USART1_TX: DMA2_Stream7 DMA request Settings:

Mode: Normal
Use fifo: Disable
Peripheral Increment: Disable
Memory Increment: **Enable ***
Peripheral Data Width: Byte
Memory Data Width: Byte

USART1_RX: DMA2_Stream2 DMA request Settings:

Mode: **Circular ***
Use fifo: Disable
Peripheral Increment: Disable
Memory Increment: **Enable ***
Peripheral Data Width: Byte
Memory Data Width: Byte

USART6_TX: DMA2_Stream6 DMA request Settings:

Mode:	Normal
Use fifo:	Disable
Peripheral Increment:	Disable
Memory Increment:	Enable *
Peripheral Data Width:	Byte
Memory Data Width:	Byte

USART6_RX: DMA2_Stream1 DMA request Settings:

Mode:	Circular *
Use fifo:	Disable
Peripheral Increment:	Disable
Memory Increment:	Enable *
Peripheral Data Width:	Byte
Memory Data Width:	Byte

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	15	0
System tick timer	true	15	0
EXTI line0 interrupt	true	5	0
EXTI line1 interrupt	true	5	0
DMA1 stream0 global interrupt	true	5	0
DMA1 stream1 global interrupt	true	5	0
DMA1 stream2 global interrupt	true	5	0
DMA1 stream3 global interrupt	true	5	0
DMA1 stream4 global interrupt	true	5	0
DMA1 stream5 global interrupt	true	5	0
DMA1 stream6 global interrupt	true	5	0
USART1 global interrupt	true	5	0
USART2 global interrupt	true	5	0
USART3 global interrupt	true	5	0
DMA1 stream7 global interrupt	true	5	0
UART4 global interrupt	true	5	0
UART5 global interrupt	true	5	0
TIM6 global interrupt, DAC1 and DAC2 underrun error interrupts	true	0	0
DMA2 stream0 global interrupt	true	5	0
DMA2 stream1 global interrupt	true	5	0
DMA2 stream2 global interrupt	true	5	0
DMA2 stream6 global interrupt	true	5	0
DMA2 stream7 global interrupt	true	5	0
USART6 global interrupt	true	5	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		
TIM1 update interrupt and TIM10 global interrupt	unused		

Interrupt Table	Enable	Preenmption Priority	SubPriority
TIM1 trigger and commutation interrupts and TIM11 global interrupt		unused	
TIM1 capture compare interrupt		unused	
TIM2 global interrupt		unused	
TIM3 global interrupt		unused	
TIM4 global interrupt		unused	
TIM8 break interrupt and TIM12 global interrupt		unused	
TIM8 update interrupt and TIM13 global interrupt		unused	
TIM8 trigger and commutation interrupts and TIM14 global interrupt		unused	
TIM8 capture compare 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

8. Software Project

8.1. Project Settings

Name	Value
Project Name	GrassCuttor
Project Folder	F:\myDesigned\GrassCuttor
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 all used libraries into the project folder
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