1. Description

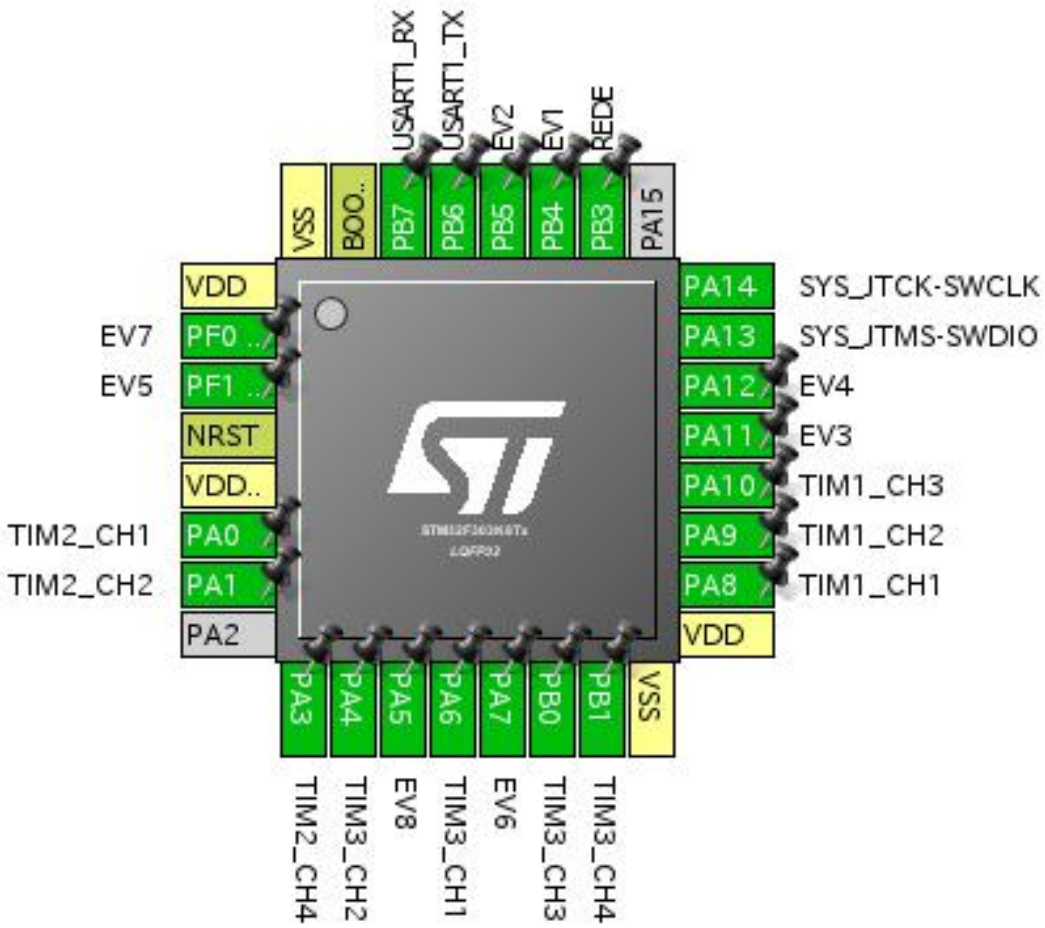
1.1. Project

Project Name	EscControlUnit
Board Name	EscControlUnit
Generated with:	STM32CubeMX 4.18.0
Date	05/05/2017

1.2. MCU

MCU Series	STM32F3
MCU Line	STM32F303
MCU name	STM32F303K8Tx
MCU Package	LQFP32
MCU Pin number	32

2. Pinout Configuration

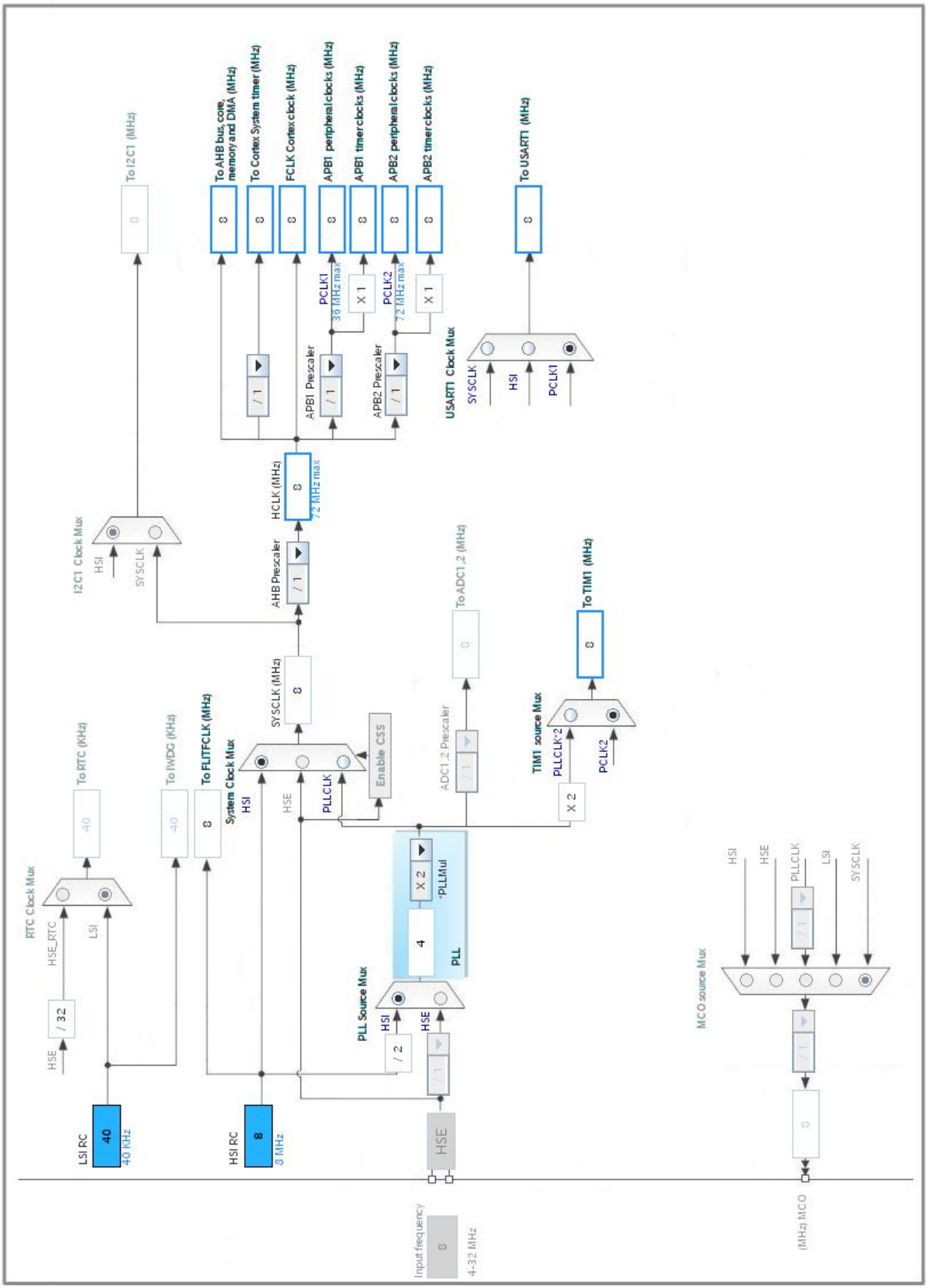


3. Pins Configuration

Pin Number LQFP32	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VDD	Power		
2	PF0 / OSC_IN *	I/O	GPIO_Output	EV7
3	PF1 / OSC_OUT *	I/O	GPIO_Output	EV5
4	NRST	Reset		
5	VDDA/VREF+	Power		
6	PA0	I/O	TIM2_CH1	
7	PA1	I/O	TIM2_CH2	
9	PA3	I/O	TIM2_CH4	
10	PA4	I/O	TIM3_CH2	
11	PA5 *	I/O	GPIO_Output	EV8
12	PA6	I/O	TIM3_CH1	
13	PA7 *	I/O	GPIO_Output	EV6
14	PB0	I/O	TIM3_CH3	
15	PB1	I/O	TIM3_CH4	
16	VSS	Power		
17	VDD	Power		
18	PA8	I/O	TIM1_CH1	
19	PA9	I/O	TIM1_CH2	
20	PA10	I/O	TIM1_CH3	
21	PA11 *	I/O	GPIO_Output	EV3
22	PA12 *	I/O	GPIO_Output	EV4
23	PA13	I/O	SYS_JTMS-SWDIO	
24	PA14	I/O	SYS_JTCK-SWCLK	
26	PB3 *	I/O	GPIO_Output	REDE
27	PB4 *	I/O	GPIO_Output	EV1
28	PB5 *	I/O	GPIO_Output	EV2
29	PB6	I/O	USART1_TX	
30	PB7	I/O	USART1_RX	
31	BOOT0	Boot		
32	VSS	Power		

* The pin is affected with an I/O function

4. Clock Tree Configuration



5. IPs and Middleware Configuration

5.1. SYS

Debug: Serial Wire

Timebase Source: SysTick

5.2. TIM1

Channel1: PWM Generation CH1

Channel2: Output Compare CH2

Channel3: Output Compare CH3

5.2.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**4 ***
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**40000 ***
Internal Clock Division (CKD)	No Division
Repetition Counter (RCR - 16 bits value)	0

Trigger Output (TRGO) Parameters:

Master/Slave Mode	Disable (no sync between this TIM (Master) and its Slaves
Trigger Event Selection TRGO	Reset (UG bit from TIMx_EGR)
Trigger Event Selection TRGO2	Reset (UG bit from TIMx_EGR)

Break And Dead Time management - BRK Configuration:

BRK State	Disable
BRK Polarity	High
BRK Filter (4 bits value)	0

Break And Dead Time management - BRK2 Configuration:

BRK2 State	Disable
BRK2 Polarity	High
BRK2 Filter (4 bits value)	0

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

Clear Input:

Clear Input Source	Disable

PWM Generation Channel 1:

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

Output Compare Channel 2:

Mode	Frozen (used for Timing base)
Pulse (16 bits value)	0
CH Polarity	High
CH Idle State	Reset

Output Compare Channel 3:

Mode	Frozen (used for Timing base)
Pulse (16 bits value)	0
CH Polarity	High
CH Idle State	Reset

5.3. TIM2

Channel1: PWM Generation CH1
Channel2: PWM Generation CH2
Channel4: PWM Generation CH4

5.3.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**4 ***
Counter Mode	Up
Counter Period (AutoReload Register - 32 bits value)	**40000 ***
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 TRGO	Reset (UG bit from TIMx_EGR)

Clear Input:

Clear Input Source	Disable

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

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)	**4 ***
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**40000 ***
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 TRGO	Reset (UG bit from TIMx_EGR)

Clear Input:

Clear Input Source	Disable

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. USART1

Mode: Asynchronous

5.5.1. 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
SYS	PA13	SYS_JTMS-SWDIO	n/a	n/a	n/a	
	PA14	SYS_JTCK-SWCLK	n/a	n/a	n/a	
TIM1	PA8	TIM1_CH1	Alternate Function Push Pull	No pull up pull down	Low	
	PA9	TIM1_CH2	Alternate Function Push Pull	No pull up pull down	Low	
	PA10	TIM1_CH3	Alternate Function Push Pull	No pull up pull down	Low	
TIM2	PA0	TIM2_CH1	Alternate Function Push Pull	No pull up pull down	Low	
	PA1	TIM2_CH2	Alternate Function Push Pull	No pull up pull down	Low	
	PA3	TIM2_CH4	Alternate Function Push Pull	No pull up pull down	Low	
TIM3	PA4	TIM3_CH2	Alternate Function Push Pull	No pull up pull down	Low	
	PA6	TIM3_CH1	Alternate Function Push Pull	No pull up pull down	Low	
	PB0	TIM3_CH3	Alternate Function Push Pull	No pull up pull down	Low	
	PB1	TIM3_CH4	Alternate Function Push Pull	No pull up pull down	Low	
USART1	PB6	USART1_TX	Alternate Function Push Pull	Pull up	**High ***	
	PB7	USART1_RX	Alternate Function Push Pull	Pull up	**High ***	
GPIO	PF0 / OSC_IN	GPIO_Output	Output Push Pull	No pull up pull down	Low	EV7
	PF1 / OSC_OUT	GPIO_Output	Output Push Pull	No pull up pull down	Low	EV5
	PA5	GPIO_Output	Output Push Pull	No pull up pull down	Low	EV8
	PA7	GPIO_Output	Output Push Pull	No pull up pull down	Low	EV6
	PA11	GPIO_Output	Output Push Pull	No pull up pull down	Low	EV3
	PA12	GPIO_Output	Output Push Pull	No pull up pull down	Low	EV4
	PB3	GPIO_Output	Output Push Pull	No pull up pull down	Low	REDE
	PB4	GPIO_Output	Output Push Pull	No pull up pull down	Low	EV1
	PB5	GPIO_Output	Output Push Pull	No pull up pull down	Low	EV2

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
USART1 global interrupt / USART1 wake-up interrupt through EXT line 25	true	0	0
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
TIM1 break and TIM15 interrupts	unused		
TIM1 update and TIM16 interrupts	unused		
TIM1 trigger and commutation and TIM17 interrupts	unused		
TIM1 capture compare interrupt	unused		
TIM2 global interrupt	unused		
TIM3 global interrupt	unused		
Floating point unit interrupt	unused		

*** User modified value**

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32F3
Line	STM32F303
MCU	STM32F303K8Tx
Datasheet	025083_Rev4

7.2. Parameter Selection

Temperature	25
Vdd	3.6

8. Software Project

8.1. Project Settings

Name	Value
Project Name	EscControlUnit
Project Folder	/home/wako/workspace/f0/EscControlUnit
Toolchain / IDE	SW4STM32
Firmware Package Name and Version	STM32Cube FW_F3 V1.6.0

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