1. Description

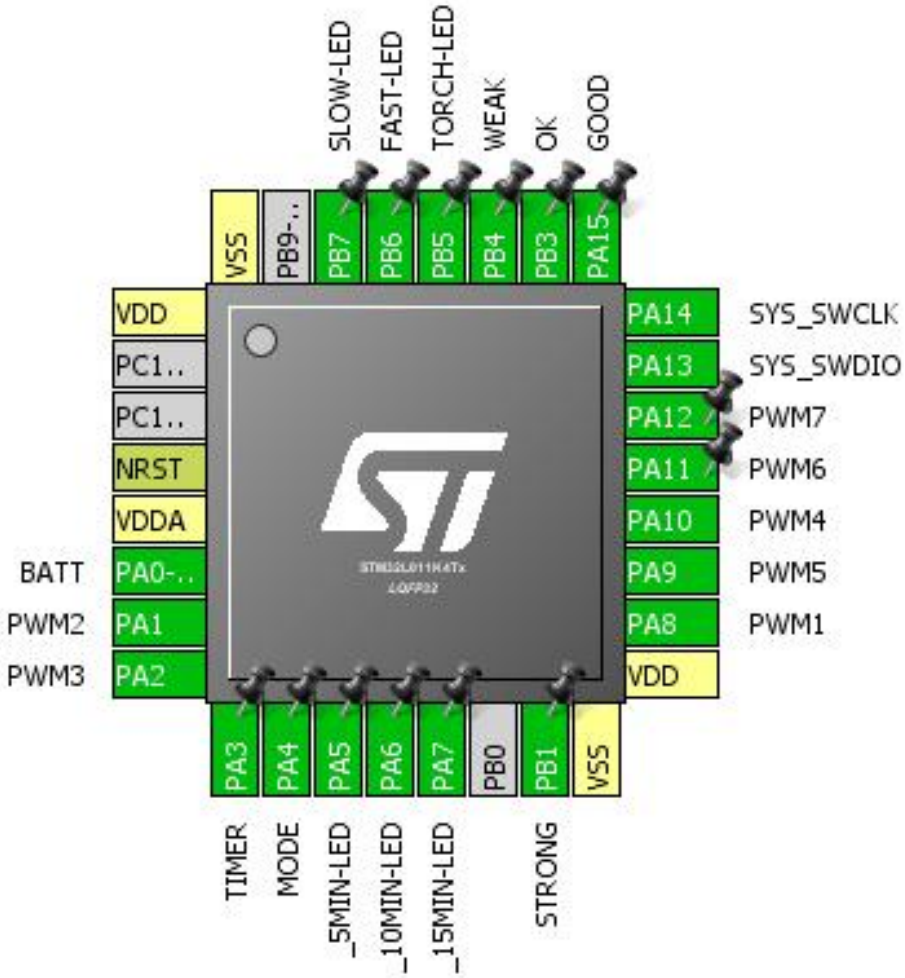
1.1. Project

Project Name	GAS_ALARM_BOARD
Board Name	No information
Generated with:	STM32CubeMX 4.23.0
Date	12/02/2017

1.2. MCU

MCU Series	STM32L0
MCU Line	STM32L0x1
MCU name	STM32L011K4Tx
MCU Package	LQFP32
MCU Pin number	32

2. Pinout Configuration

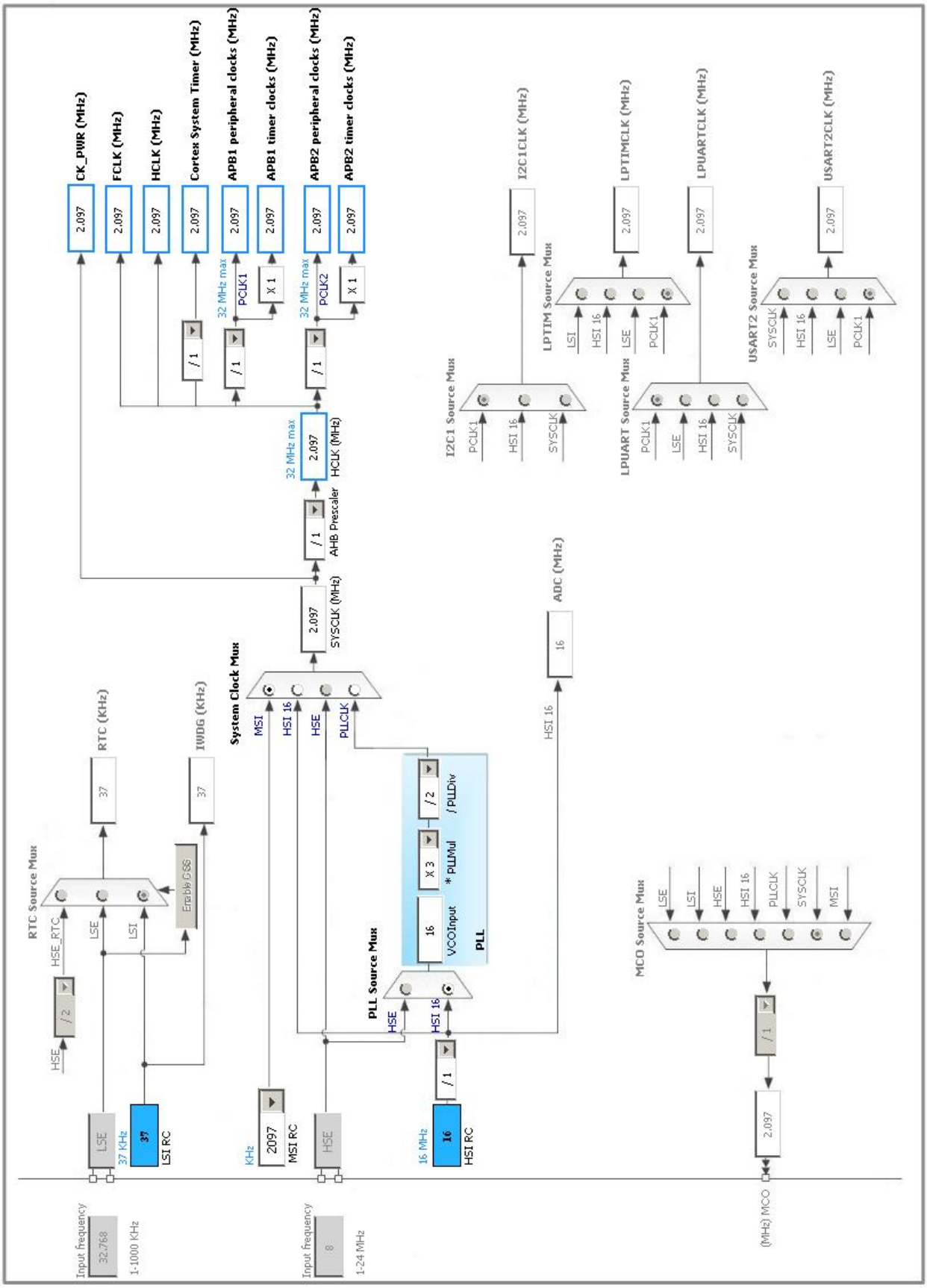


3. Pins Configuration

Pin Number LQFP32	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VDD	Power		
4	NRST	Reset		
5	VDDA	Power		
6	PA0-CK_IN	I/O	ADC_IN0	BATT
7	PA1	I/O	TIM2_CH2	PWM2
8	PA2	I/O	TIM2_CH3	PWM3
9	PA3 *	I/O	GPIO_Input	TIMER
10	PA4 *	I/O	GPIO_Input	MODE
11	PA5 *	I/O	GPIO_Output	_5MIN-LED
12	PA6 *	I/O	GPIO_Output	_10MIN-LED
13	PA7 *	I/O	GPIO_Output	_15MIN-LED
15	PB1 *	I/O	GPIO_Output	STRONG
16	VSS	Power		
17	VDD	Power		
18	PA8	I/O	TIM2_CH1	PWM1
19	PA9	I/O	TIM21_CH2	PWM5
20	PA10	I/O	TIM21_CH1	PWM4
21	PA11 *	I/O	GPIO_Output	PWM6
22	PA12 *	I/O	GPIO_Output	PWM7
23	PA13	I/O	SYS_SWDIO	
24	PA14	I/O	SYS_SWCLK	
25	PA15 *	I/O	GPIO_Output	GOOD
26	PB3 *	I/O	GPIO_Output	OK
27	PB4 *	I/O	GPIO_Output	WEAK
28	PB5 *	I/O	GPIO_Output	TORCH-LED
29	PB6 *	I/O	GPIO_Output	FAST-LED
30	PB7 *	I/O	GPIO_Output	SLOW-LED
32	VSS	Power		

* The pin is affected with an I/O function

4. Clock Tree Configuration



5. IPs and Middleware Configuration

5.1. ADC

mode: IN0

5.1.1. Parameter Settings:

ADC_Settings:	
Clock Prescaler	Synchronous clock mode divided by 1
Resolution	ADC 12-bit resolution
Data Alignment	Right alignment
Scan Direction	Forward
Continuous Conversion Mode	Disabled
Discontinuous Conversion Mode	Disabled
DMA Continuous Requests	Disabled
End Of Conversion Selection	End of single conversion
Overrun behaviour	Overrun data preserved
Low Power Auto Wait	Disabled
Low Frequency Mode	Disabled
Auto Off	Disabled
Oversampling Mode	Disabled
ADC_Regular_ConversionMode:	
Sampling Time	1.5 Cycles
External Trigger Conversion Source	Regular Conversion launched by software
External Trigger Conversion Edge	None
WatchDog:	
Enable Analog WatchDog Mode	false

5.2. SYS

mode: Debug Serial Wire

Timebase Source: SysTick

5.3. TIM2

Channel1: PWM Generation CH1

Channel2: PWM Generation CH2

Channel3: PWM Generation CH3

5.3.1. 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

5.4. TIM21

Channel1: PWM Generation CH1

Channel2: PWM Generation CH2

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

*** User modified value**

6. System Configuration

6.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
ADC	PA0-CK_IN	ADC_IN0	Analog mode	No pull-up and no pull-down	n/a	BATT
SYS	PA13	SYS_SWDIO	n/a	n/a	n/a	
	PA14	SYS_SWCLK	n/a	n/a	n/a	
TIM2	PA1	TIM2_CH2	Alternate Function Push Pull	No pull-up and no pull-down	Low	PWM2
	PA2	TIM2_CH3	Alternate Function Push Pull	No pull-up and no pull-down	Low	PWM3
	PA8	TIM2_CH1	Alternate Function Push Pull	No pull-up and no pull-down	Low	PWM1
TIM21	PA9	TIM21_CH2	Alternate Function Push Pull	No pull-up and no pull-down	Low	PWM5
	PA10	TIM21_CH1	Alternate Function Push Pull	No pull-up and no pull-down	Low	PWM4
GPIO	PA3	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	TIMER
	PA4	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	MODE
	PA5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	_5MIN-LED
	PA6	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	_10MIN-LED
	PA7	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	_15MIN-LED
	PB1	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	STRONG
	PA11	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	PWM6
	PA12	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	PWM7
	PA15	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	GOOD
	PB3	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	OK
	PB4	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	WEAK
	PB5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	TORCH-LED
	PB6	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	FAST-LED
	PB7	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	SLOW-LED

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
System service call via SWI instruction	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 and EEPROM global interrupt	unused		
RCC global interrupt	unused		
ADC1, COMP1 and COMP2 interrupts (COMP interrupts through EXTI lines 21 and 22)	unused		
TIM2 global interrupt	unused		
TIM21 global interrupt	unused		

*** User modified value**

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32L0
Line	STM32L0x1
MCU	STM32L011K4Tx
Datasheet	027973_Rev4

7.2. Parameter Selection

Temperature	25
Vdd	null