

## 1. Description

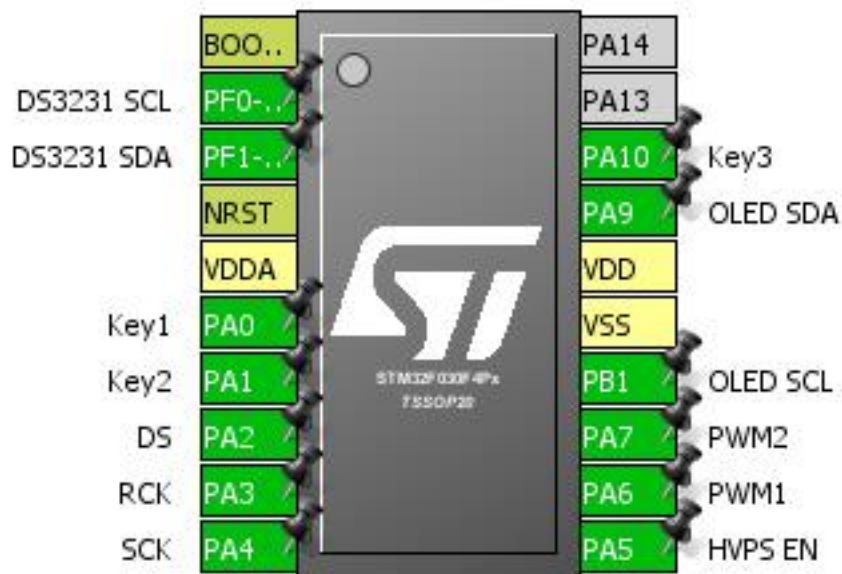
### 1.1. Project

Project Name	Divergence Meter
Board Name	custom
Generated with:	STM32CubeMX 4.26.0
Date	04/09/2019

### 1.2. MCU

MCU Series	STM32F0
MCU Line	STM32F0x0 Value Line
MCU name	STM32F030F4Px
MCU Package	TSSOP20
MCU Pin number	20

## 2. Pinout Configuration



### 3. Pins Configuration

Pin Number TSSOP20	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	BOOT0	Boot		
2	PF0-OSC_IN *	I/O	GPIO_Output	DS3231 SCL
3	PF1-OSC_OUT *	I/O	GPIO_Output	DS3231 SDA
4	NRST	Reset		
5	VDDA	Power		
6	PA0 *	I/O	GPIO_Input	Key1
7	PA1 *	I/O	GPIO_Input	Key2
8	PA2 *	I/O	GPIO_Output	DS
9	PA3 *	I/O	GPIO_Output	RCK
10	PA4 *	I/O	GPIO_Output	SCK
11	PA5 *	I/O	GPIO_Output	HVPS EN
12	PA6	I/O	TIM3_CH1	PWM1
13	PA7	I/O	TIM3_CH2	PWM2
14	PB1 *	I/O	GPIO_Output	OLED SCL
15	VSS	Power		
16	VDD	Power		
17	PA9 *	I/O	GPIO_Output	OLED SDA
18	PA10 *	I/O	GPIO_Input	Key3

\* The pin is affected with an I/O function



## 5. IPs and Middleware Configuration

### 5.1. SYS

Timebase Source: SysTick

### 5.2. TIM3

mode: Clock Source

Channel1: PWM Generation CH1

Channel2: PWM Generation CH2

#### 5.2.1. Parameter Settings:

##### Counter Settings:

Prescaler (PSC - 16 bits value)	71 *
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value )	999 *
Internal Clock Division (CKD)	No Division
auto-reload preload	Disable

##### 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

### 5.3. TIM14

mode: Activated

#### 5.3.1. Parameter Settings:

##### Counter Settings:

Prescaler (PSC - 16 bits value)	71 *
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Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value )	<b>999 *</b>
Internal Clock Division (CKD)	No Division
auto-reload preload	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
TIM3	PA6	TIM3_CH1	Alternate Function Push Pull	No pull-up and no pull-down	High *	PWM1
	PA7	TIM3_CH2	Alternate Function Push Pull	No pull-up and no pull-down	High *	PWM2
GPIO	PF0-OSC_IN	GPIO_Output	Output Push Pull	No pull-up and no pull-down	High *	DS3231 SCL
	PF1-OSC_OUT	GPIO_Output	Output Push Pull	No pull-up and no pull-down	High *	DS3231 SDA
	PA0	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	Key1
	PA1	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	Key2
	PA2	GPIO_Output	Output Push Pull	No pull-up and no pull-down	High *	DS
	PA3	GPIO_Output	Output Push Pull	No pull-up and no pull-down	High *	RCK
	PA4	GPIO_Output	Output Push Pull	No pull-up and no pull-down	High *	SCK
	PA5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	High *	HVPS EN
	PB1	GPIO_Output	Output Push Pull	No pull-up and no pull-down	High *	OLED SCL
	PA9	GPIO_Output	Output Push Pull	No pull-up and no pull-down	High *	OLED SDA
	PA10	GPIO_Input	Input mode	Pull-up *	n/a	Key3

### 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
TIM14 global interrupt	true	0	0
Flash global interrupt	unused		
RCC global interrupt	unused		
TIM3 global interrupt	unused		

\* User modified value



## **7. Power Consumption Calculator report**

### 7.1. Microcontroller Selection

Series	STM32F0
Line	STM32F0x0 Value Line
MCU	STM32F030F4Px
Datasheet	024849_Rev2

### 7.2. Parameter Selection

Temperature	25
Vdd	3.6

## 8. Software Project

### 8.1. Project Settings

Name	Value
Project Name	Divergence Meter
Project Folder	E:\WorkSpace\Microcontroller\STM32F030F4P6\Divergence Meter\Divergence
Toolchain / IDE	MDK-ARM V5
Firmware Package Name and Version	STM32Cube FW_F0 V1.9.0

### 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	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

## ***9. Software Pack Report***