1. Description

1.1. Project

Project Name	Test
Board Name	NUCLEO-F302R8
Generated with:	STM32CubeMX 4.19.0
Date	03/04/2017

1.2. MCU

MCU Series	STM32F3
MCU Line	STM32F302
MCU name	STM32F302R8Tx
MCU Package	LQFP64
MCU Pin number	64

2. Pinout Configuration
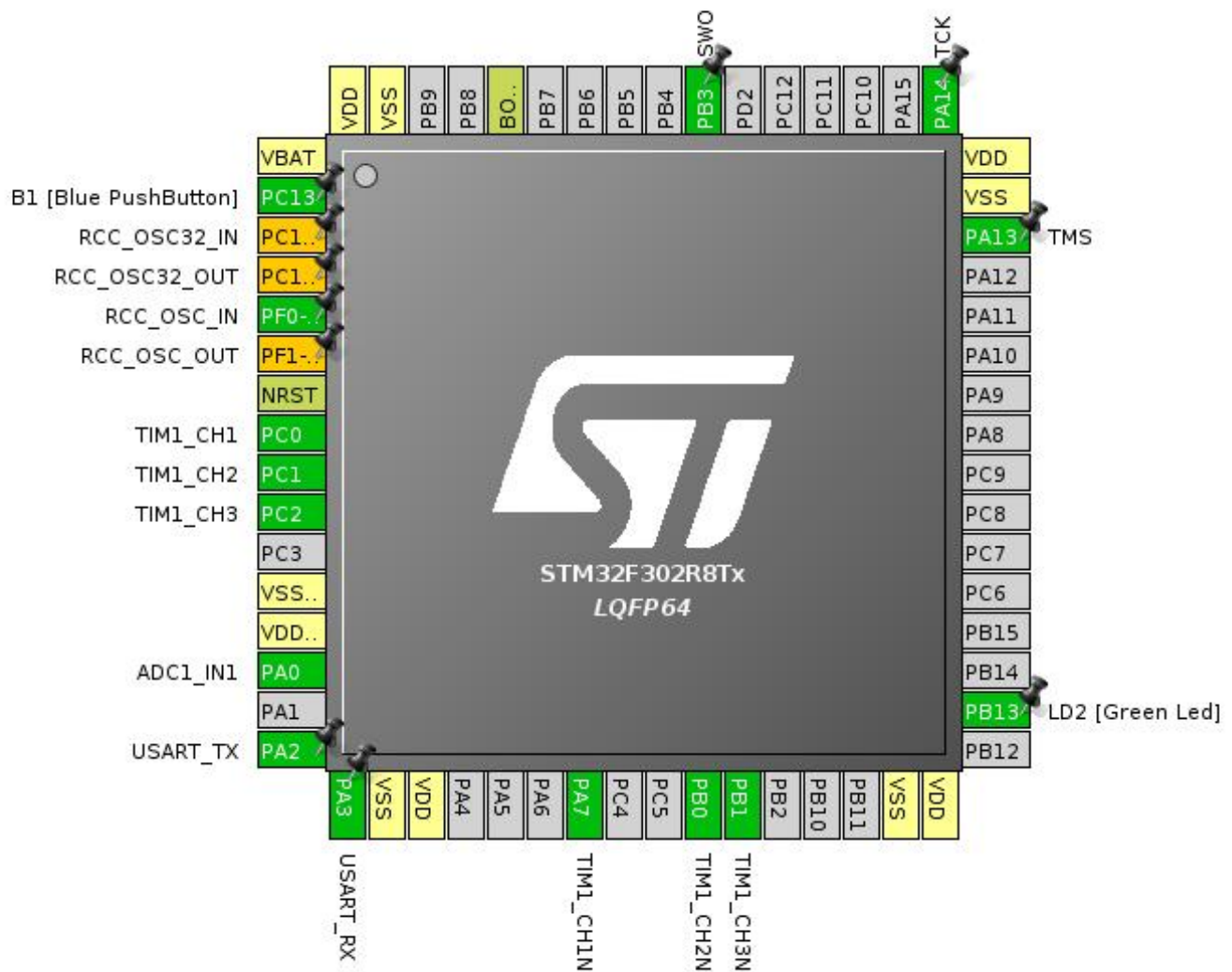
3. Pins Configuration

Pin Number LQFP64	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VBAT	Power		
2	PC13	I/O	GPIO_EXTI13	B1 [Blue PushButton]
3	PC14 - OSC32_IN *	I/O	RCC_OSC32_IN	
4	PC15 - OSC32_OUT *	I/O	RCC_OSC32_OUT	
5	PF0-OSC_IN	I/O	RCC_OSC_IN	
6	PF1-OSC_OUT *	I/O	RCC_OSC_OUT	
7	NRST	Reset		
8	PC0	I/O	TIM1_CH1	
9	PC1	I/O	TIM1_CH2	
10	PC2	I/O	TIM1_CH3	
12	VSSA/VREF-	Power		
13	VDDA/VREF+	Power		
14	PA0	I/O	ADC1_IN1	
16	PA2	I/O	USART2_TX	USART_TX
17	PA3	I/O	USART2_RX	USART_RX
18	VSS	Power		
19	VDD	Power		
23	PA7	I/O	TIM1_CH1N	
26	PB0	I/O	TIM1_CH2N	
27	PB1	I/O	TIM1_CH3N	
31	VSS	Power		
32	VDD	Power		
34	PB13 **	I/O	GPIO_Output	LD2 [Green Led]
46	PA13	I/O	SYS_JTMS-SWDIO	TMS
47	VSS	Power		
48	VDD	Power		
49	PA14	I/O	SYS_JTCK-SWCLK	TCK
55	PB3	I/O	SYS_JTDO-TRACESWO	SWO
60	BOOT0	Boot		
63	VSS	Power		
64	VDD	Power		

** The pin is affected with an I/O function
 * The pin is affected with a peripheral function but no peripheral mode is activated

4. Clock Tree Configuration

5. IPs and Middleware Configuration

5.1. ADC1

IN1: IN1 Single-ended

5.1.1. Parameter Settings:

ADC_Settings:

Clock Prescaler	ADC Asynchronous clock mode
Resolution	ADC 12-bit resolution
Data Alignment	Right alignment
Scan Conversion Mode	Disabled
Continuous Conversion Mode	**Enabled ***
Discontinuous Conversion Mode	Disabled
DMA Continuous Requests	Disabled
End Of Conversion Selection	End of single conversion
Overrun behaviour	Overrun data overwritten
Low Power Auto Wait	Disabled

ADC_Regular_ConversionMode:

Enable Regular Conversions	Enable
Number Of Conversion	1
External Trigger Conversion Source	Regular Conversion launched by software
External Trigger Conversion Edge	None
Rank	1
Channel	Channel 1
Sampling Time	1.5 Cycles
Offset Number	No offset
Offset	0

ADC_Injected_ConversionMode:

Enable Injected Conversions	Enable
Number Of Conversions	0

Analog Watchdog 1:

Enable Analog WatchDog1 Mode	false

Analog Watchdog 2:

Enable Analog WatchDog2 Mode	false

Analog Watchdog 3:

Enable Analog WatchDog3 Mode	false

5.2. RCC

High Speed Clock (HSE): BYPASS Clock Source

5.2.1. Parameter Settings:

System Parameters:

VDD voltage (V)	3.3
Prefetch Buffer	Enabled
Flash Latency(WS)	2 WS (3 CPU cycle)

RCC Parameters:

HSI Calibration Value	16
HSE Startup Timout Value (ms)	100
LSE Startup Timout Value (ms)	5000

5.3. SYS

Debug: Trace Asynchronous Sw
Timebase Source: SysTick

5.4. TIM1

Clock Source   : Internal Clock
Channel1: PWM Generation CH1 CH1N
Channel2: PWM Generation CH2 CH2N
Channel3: PWM Generation CH3 CH3N

5.4.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	0
Counter Mode	**Center Aligned mode1 ***
Counter Period (AutoReload Register - 16 bits value)	**3200 ***
Internal Clock Division (CKD)	No Division
Repetition Counter (RCR - 16 bits value)	0
auto-reload preload	**Enable ***

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
Dead Time	**10 ***

Clear Input:

Clear Input Source	Disable

PWM Generation Channel 1 and 1N:

Mode	PWM mode 1
Pulse (16 bits value)	**2000 ***
Fast Mode	**Enable ***
CH Polarity	High
CHN Polarity	High
CH Idle State	**Set ***
CHN Idle State	**Set ***

PWM Generation Channel 2 and 2N:

Mode	PWM mode 1
Pulse (16 bits value)	**1500 ***
Fast Mode	Disable
CH Polarity	High
CHN Polarity	High
CH Idle State	**Set ***
CHN Idle State	**Set ***

PWM Generation Channel 3 and 3N:

Mode	PWM mode 1
Pulse (16 bits value)	**400 ***
Fast Mode	Disable
CH Polarity	High

CHN Polarity	High
CH Idle State	**Set ***
CHN Idle State	**Set ***

5.5. USART2

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:

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
ADC1	PA0	ADC1_IN1	Analog mode	No pull up pull down	n/a	
RCC	PF0-OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	
SYS	PA13	SYS_JTMS-SWDIO	n/a	n/a	n/a	TMS
	PA14	SYS_JTCK-SWCLK	n/a	n/a	n/a	TCK
	PB3	SYS_JTDO-TRACESWO	n/a	n/a	n/a	SWO
TIM1	PC0	TIM1_CH1	Alternate Function Push Pull	No pull up pull down	Low	
	PC1	TIM1_CH2	Alternate Function Push Pull	No pull up pull down	Low	
	PC2	TIM1_CH3	Alternate Function Push Pull	No pull up pull down	Low	
	PA7	TIM1_CH1N	Alternate Function Push Pull	No pull up pull down	Low	
	PB0	TIM1_CH2N	Alternate Function Push Pull	No pull up pull down	Low	
	PB1	TIM1_CH3N	Alternate Function Push Pull	No pull up pull down	Low	
USART2	PA2	USART2_TX	Alternate Function Push Pull	*	Low	USART_TX
	PA3	USART2_RX	Alternate Function Push Pull	*	Low	USART_RX
Single Mapped Signals	PC14 - OSC32_IN	RCC_OSC32_IN	n/a	n/a	n/a	
	PC15 - OSC32_OUT	RCC_OSC32_OUT	n/a	n/a	n/a	
	PF1-OSC_OUT	RCC_OSC_OUT	n/a	n/a	n/a	
GPIO	PC13	GPIO_EXTI13	**External Interrupt Mode with Falling edge trigger detection**	No pull up pull down	n/a	B1 [Blue PushButton]
	PB13	GPIO_Output	Output Push Pull	No pull up pull down	Low	LD2 [Green 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
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 line16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
ADC1 interrupt	unused		
TIM1 break and TIM15 interrupts	unused		
TIM1 update and TIM16 interrupts	unused		
TIM1 trigger, commutation and TIM17 interrupts	unused		
TIM1 capture compare interrupt	unused		
USART2 global interrupt	unused		
EXTI line[15:10] interrupts	unused		
Floating point unit interrupt	unused		

* User modified value

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32F3
Line	STM32F302
MCU	STM32F302R8Tx
Datasheet	025147_Rev5

7.2. Parameter Selection

Temperature	25
Vdd	3.6

8. Software Project

8.1. Project Settings

Name	Value
Project Name	Test
Project Folder	/home/nick/ARM/STM32CubeMX/Test_DSP
Toolchain / IDE	SW4STM32
Firmware Package Name and Version	STM32Cube FW_F3 V1.7.0

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