1. Description

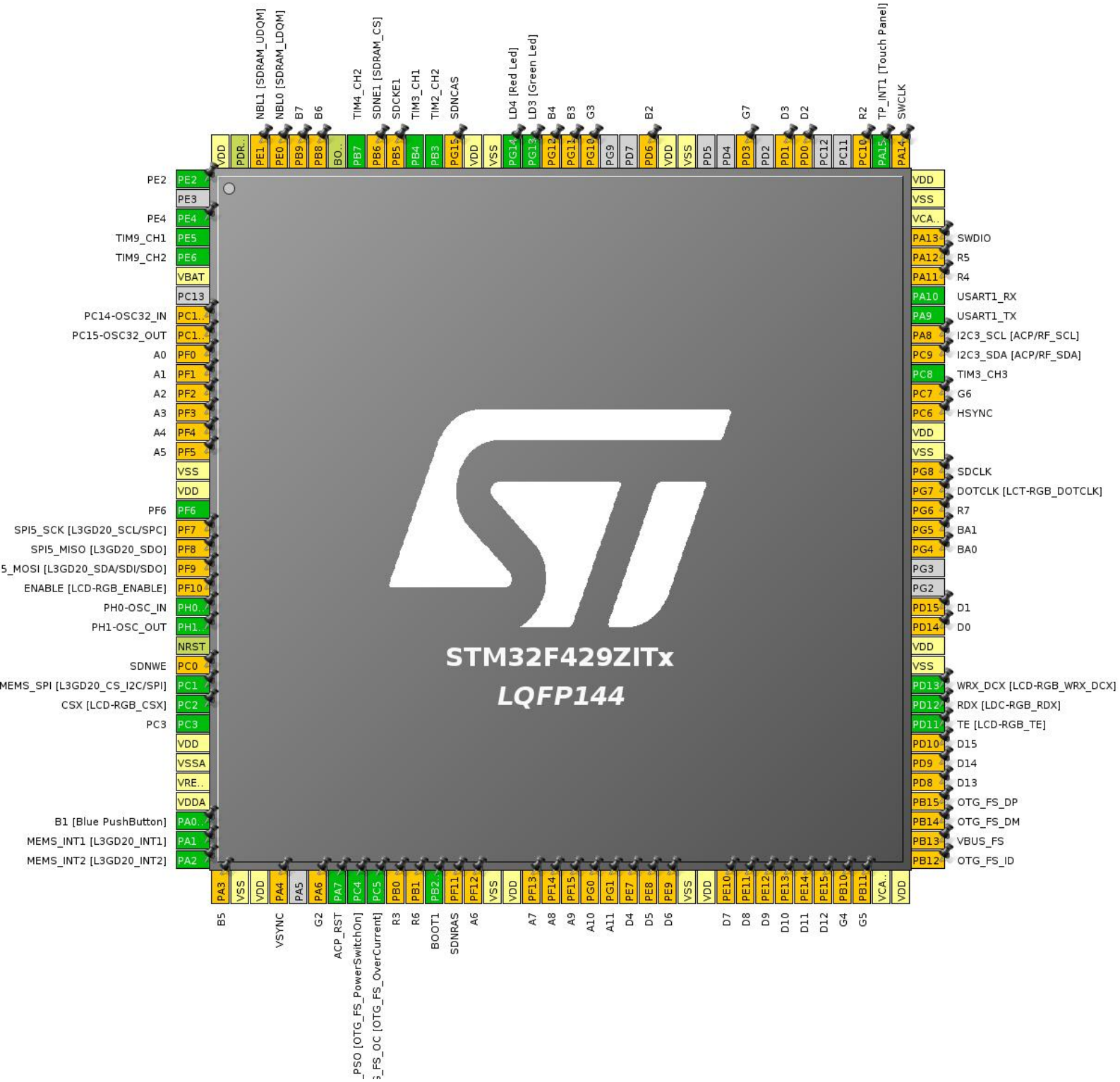
1.1. Project

Project Name	BallOnPlate_STM32F429
Board Name	STM32F429I-DISCO
Generated with:	STM32CubeMX 4.22.0
Date	09/17/2017

1.2. MCU

MCU Series	STM32F4
MCU Line	STM32F429/439
MCU name	STM32F429ZITx
MCU Package	LQFP144
MCU Pin number	144

2. Pinout Configuration



3. Pins Configuration

Pin Number LQFP144	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	PE2 *	I/O	GPIO_Output	PE2
3	PE4 *	I/O	GPIO_Output	PE4
4	PE5	I/O	TIM9_CH1	
5	PE6	I/O	TIM9_CH2	
6	VBAT	Power		
8	PC14/OSC32_IN **	I/O	RCC_OSC32_IN	PC14-OSC32_IN
9	PC15/OSC32_OUT **	I/O	RCC_OSC32_OUT	PC15-OSC32_OUT
10	PF0 **	I/O	FMC_A0	A0
11	PF1 **	I/O	FMC_A1	A1
12	PF2 **	I/O	FMC_A2	A2
13	PF3 **	I/O	FMC_A3	A3
14	PF4 **	I/O	FMC_A4	A4
15	PF5 **	I/O	FMC_A5	A5
16	VSS	Power		
17	VDD	Power		
18	PF6	I/O	ADC3_IN4	PF6
19	PF7 **	I/O	SPI5_SCK	SPI5_SCK [L3GD20_SCL/SPC]
20	PF8 **	I/O	SPI5_MISO	SPI5_MISO [L3GD20_SDO]
21	PF9 **	I/O	SPI5_MOSI	SPI5_MOSI [L3GD20_SDA/SDI/SDO]
22	PF10 **	I/O	LTDC_DE	ENABLE [LCD-RGB_ENABLE]
23	PH0/OSC_IN	I/O	RCC_OSC_IN	PH0-OSC_IN
24	PH1/OSC_OUT	I/O	RCC_OSC_OUT	PH1-OSC_OUT
25	NRST	Reset		
26	PC0 **	I/O	FMC_SDNWE	SDNWE
27	PC1 *	I/O	GPIO_Output	NCS_MEMS_SPI [L3GD20_CS_I2C/SPI]
28	PC2 *	I/O	GPIO_Output	CSX [LCD-RGB_CSX]
29	PC3	I/O	ADC1_IN13	PC3
30	VDD	Power		
31	VSSA	Power		
32	VREF+	Power		
33	VDDA	Power		
34	PA0/WKUP	I/O	GPIO_EXTI0	B1 [Blue PushButton]

Pin Number LQFP144	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
35	PA1	I/O	GPIO_EXTI1	MEMS_INT1 [L3GD20_INT1]
36	PA2	I/O	GPIO_EXTI2	MEMS_INT2 [L3GD20_INT2]
37	PA3 **	I/O	LTDC_B5	B5
38	VSS	Power		
39	VDD	Power		
40	PA4 **	I/O	LTDC_VSYNC	VSYNC
42	PA6 **	I/O	LTDC_G2	G2
43	PA7 *	I/O	GPIO_Output	ACP_RST
44	PC4 *	I/O	GPIO_Output	OTG_FS_PSO [OTG_FS_PowerSwitchOn]
45	PC5	I/O	GPIO_EXTI5	OTG_FS_OC [OTG_FS_OverCurrent]
46	PB0 **	I/O	LTDC_R3	R3
47	PB1 **	I/O	LTDC_R6	R6
48	PB2/BOOT1 *	I/O	GPIO_Input	BOOT1
49	PF11 **	I/O	FMC_SDNRAS	SDNRAS
50	PF12 **	I/O	FMC_A6	A6
51	VSS	Power		
52	VDD	Power		
53	PF13 **	I/O	FMC_A7	A7
54	PF14 **	I/O	FMC_A8	A8
55	PF15 **	I/O	FMC_A9	A9
56	PG0 **	I/O	FMC_A10	A10
57	PG1 **	I/O	FMC_A11	A11
58	PE7 **	I/O	FMC_D4	D4
59	PE8 **	I/O	FMC_D5	D5
60	PE9 **	I/O	FMC_D6	D6
61	VSS	Power		
62	VDD	Power		
63	PE10 **	I/O	FMC_D7	D7
64	PE11 **	I/O	FMC_D8	D8
65	PE12 **	I/O	FMC_D9	D9
66	PE13 **	I/O	FMC_D10	D10
67	PE14 **	I/O	FMC_D11	D11
68	PE15 **	I/O	FMC_D12	D12
69	PB10 **	I/O	LTDC_G4	G4
70	PB11 **	I/O	LTDC_G5	G5
71	VCAP_1	Power		

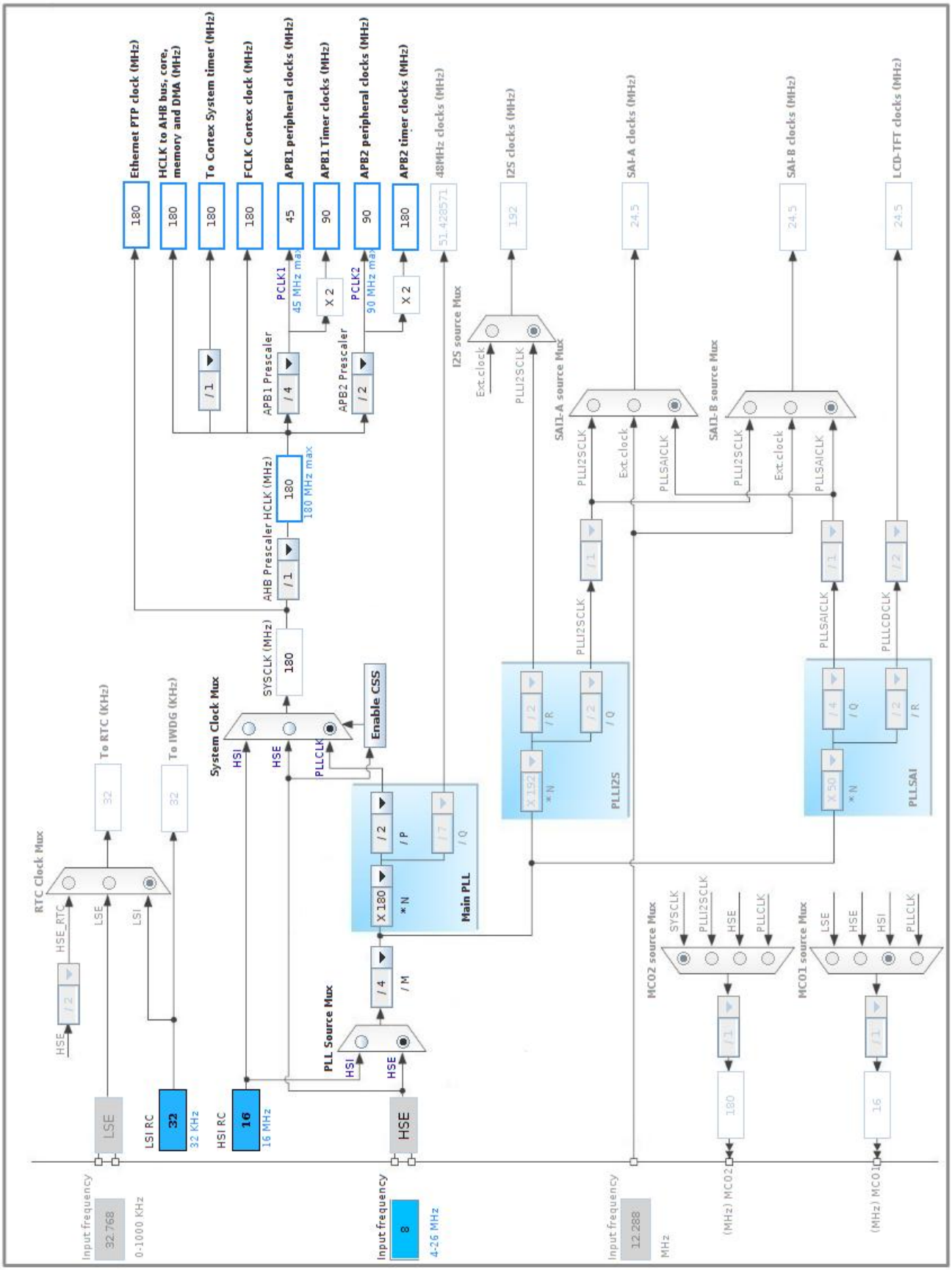
Pin Number LQFP144	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
72	VDD	Power		
73	PB12 **	I/O	USB_OTG_HS_ID	OTG_FS_ID
74	PB13 **	I/O	USB_OTG_HS_VBUS	VBUS_FS
75	PB14 **	I/O	USB_OTG_HS_DM	OTG_FS_DM
76	PB15 **	I/O	USB_OTG_HS_DP	OTG_FS_DP
77	PD8 **	I/O	FMC_D13	D13
78	PD9 **	I/O	FMC_D14	D14
79	PD10 **	I/O	FMC_D15	D15
80	PD11 *	I/O	GPIO_Input	TE [LCD-RGB_TE]
81	PD12 *	I/O	GPIO_Output	RDX [LDC-RGB_RDX]
82	PD13 *	I/O	GPIO_Output	WRX_DCX [LCD-RGB_WRX_DCX]
83	VSS	Power		
84	VDD	Power		
85	PD14 **	I/O	FMC_D0	D0
86	PD15 **	I/O	FMC_D1	D1
89	PG4 **	I/O	FMC_BA0	BA0
90	PG5 **	I/O	FMC_BA1	BA1
91	PG6 **	I/O	LTDC_R7	R7
92	PG7 **	I/O	LTDC_CLK	DOTCLK [LCT-RGB_DOTCLK]
93	PG8 **	I/O	FMC_SDCLK	SDCLK
94	VSS	Power		
95	VDD	Power		
96	PC6 **	I/O	LTDC_HSYNC	HSYNC
97	PC7 **	I/O	LTDC_G6	G6
98	PC8	I/O	TIM3_CH3	
99	PC9 **	I/O	I2C3_SDA	I2C3_SDA [ACP/RF_SDA]
100	PA8 **	I/O	I2C3_SCL	I2C3_SCL [ACP/RF_SCL]
101	PA9	I/O	USART1_TX	
102	PA10	I/O	USART1_RX	
103	PA11 **	I/O	LTDC_R4	R4
104	PA12 **	I/O	LTDC_R5	R5
105	PA13 **	I/O	SYS_JTMS-SWDIO	SWDIO
106	VCAP_2	Power		
107	VSS	Power		
108	VDD	Power		
109	PA14 **	I/O	SYS_JTCK-SWCLK	SWCLK
110	PA15	I/O	GPIO_EXTI15	TP_INT1 [Touch Panel]
111	PC10 **	I/O	LTDC_R2	R2

Pin Number LQFP144	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
114	PD0 **	I/O	FMC_D2	D2
115	PD1 **	I/O	FMC_D3	D3
117	PD3 **	I/O	LTDC_G7	G7
120	VSS	Power		
121	VDD	Power		
122	PD6 **	I/O	LTDC_B2	B2
125	PG10 **	I/O	LTDC_G3	G3
126	PG11 **	I/O	LTDC_B3	B3
127	PG12 **	I/O	LTDC_B4	B4
128	PG13 *	I/O	GPIO_Output	LD3 [Green Led]
129	PG14 *	I/O	GPIO_Output	LD4 [Red Led]
130	VSS	Power		
131	VDD	Power		
132	PG15 **	I/O	FMC_SDNCAS	SDNCAS
133	PB3	I/O	TIM2_CH2	
134	PB4	I/O	TIM3_CH1	
135	PB5 **	I/O	FMC_SDCKE1	SDCKE1
136	PB6 **	I/O	FMC_SDNE1	SDNE1 [SDRAM_CS]
137	PB7	I/O	TIM4_CH2	
138	BOOT0	Boot		
139	PB8 **	I/O	LTDC_B6	B6
140	PB9 **	I/O	LTDC_B7	B7
141	PE0 **	I/O	FMC_NBL0	NBL0 [SDRAM_LDQM]
142	PE1 **	I/O	FMC_NBL1	NBL1 [SDRAM_UDQM]
143	PDR_ON	Reset		
144	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

mode: IN13

5.1.1. Parameter Settings:

ADCs_Common_Settings:

Mode	Independent mode

ADC_Settings:

Clock Prescaler	**PCLK2 divided by 8 ***
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 13
Sampling Time	**480 Cycles ***

ADC_Injected_ConversionMode:

Number Of Conversions	0

WatchDog:

Enable Analog WatchDog Mode	false

5.2. ADC3

mode: IN4

5.2.1. Parameter Settings:

ADCs_Common_Settings:

Mode	Independent mode

ADC_Settings:

Clock Prescaler	**PCLK2 divided by 8 ***
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 4
Sampling Time	**480 Cycles ***

ADC_Injected_ConversionMode:

Number Of Conversions	0

WatchDog:

Enable Analog WatchDog Mode	false

5.3. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

5.3.1. 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
TIM Prescaler Selection	Disabled
HSE Startup Timout Value (ms)	100
LSE Startup Timout Value (ms)	5000

Power Parameters:

Power Regulatror Voltage Scale	Power Regulator Voltage Scale 1
Power Over Drive	Enabled

5.4. SYS

Timebase Source: TIM7

5.5. TIM2

Channel2: PWM Generation CH2

5.5.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**39 ***
Counter Mode	Up
Counter Period (AutoReload Register - 32 bits value)	**44999 ***
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 2:

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

5.6. TIM3

Channel1: PWM Generation CH1

Channel3: PWM Generation CH3

5.6.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**39 ***
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**44999 ***

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 3:

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

5.7. TIM4

Channel2: PWM Generation CH2

5.7.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**39 ***
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**44999 ***
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 2:

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

5.8. TIM9

Channel1: PWM Generation CH1
Channel2: PWM Generation CH2

5.8.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**79 ***
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**44999 ***
Internal Clock Division (CKD)	No Division

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

5.9. USART1

Mode: Asynchronous

5.9.1. 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

5.10. FREERTOS

mode: Enabled

5.10.1. 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	**32 ***
USE_16_BIT_TICKS	Disabled
IDLE_SHOULD_YIELD	Enabled
USE_MUTEXES	Enabled
USE_RECURSIVE_MUTEXES	Disabled
USE_COUNTING_SEMAPHORES	**Enabled ***
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	**160000 ***
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

5.10.2. 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	**Enabled ***
eTaskGetState	Disabled
xEventGroupSetBitFromISR	Disabled
xTimerPendFunctionCall	Disabled
xTaskAbortDelay	Disabled
xTaskGetHandle	**Enabled ***

*** 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	PC3	ADC1_IN13	Analog mode	No pull-up and no pull-down	n/a	PC3
ADC3	PF6	ADC3_IN4	Analog mode	No pull-up and no pull-down	n/a	PF6
RCC	PH0/OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	PH0-OSC_IN
	PH1/OSC_OUT	RCC_OSC_OUT	n/a	n/a	n/a	PH1-OSC_OUT
TIM2	PB3	TIM2_CH2	Alternate Function Push Pull	No pull-up and no pull-down	Low	
TIM3	PC8	TIM3_CH3	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PB4	TIM3_CH1	Alternate Function Push Pull	No pull-up and no pull-down	Low	
TIM4	PB7	TIM4_CH2	Alternate Function Push Pull	No pull-up and no pull-down	Low	
TIM9	PE5	TIM9_CH1	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PE6	TIM9_CH2	Alternate Function Push Pull	No pull-up and no pull-down	Low	
USART1	PA9	USART1_TX	Alternate Function Push Pull	Pull-up	**Very High ***	
	PA10	USART1_RX	Alternate Function Push Pull	Pull-up	**Very High ***	
Single Mapped Signals	PC14/OSC32_IN	RCC_OSC32_IN	n/a	n/a	n/a	PC14-OSC32_IN
	PC15/OSC32_OUT	RCC_OSC32_OUT	n/a	n/a	n/a	PC15-OSC32_OUT
	PF0	FMC_A0	Alternate Function Push Pull	No pull-up and no pull-down	Very High	A0
	PF1	FMC_A1	Alternate Function Push Pull	No pull-up and no pull-down	Very High	A1
	PF2	FMC_A2	Alternate Function Push Pull	No pull-up and no pull-down	Very High	A2
	PF3	FMC_A3	Alternate Function Push Pull	No pull-up and no pull-down	Very High	A3
	PF4	FMC_A4	Alternate Function Push Pull	No pull-up and no pull-down	Very High	A4
	PF5	FMC_A5	Alternate Function Push Pull	No pull-up and no pull-down	Very High	A5
	PF7	SPI5_SCK	Alternate Function Push Pull	No pull-up and no pull-down	Low	SPI5_SCK [L3GD20_SCL/SPC]
	PF8	SPI5_MISO	Alternate Function Push Pull	No pull-up and no pull-down	Low	SPI5_MISO [L3GD20_SDO]
	PF9	SPI5_MOSI	Alternate Function Push Pull	No pull-up and no pull-down	Low	SPI5_MOSI [L3GD20_SDA/SDI/SDO]
	PF10	LTDC_DE	Alternate Function Push Pull	No pull-up and no pull-down	Low	ENABLE [LCD-RGB_ENABLE]
	PC0	FMC_SDNWE	Alternate Function Push Pull	No pull-up and no pull-down	Very High	SDNWE

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
	PA3	LTDC_B5	Alternate Function Push Pull	No pull-up and no pull-down	Low	B5
	PA4	LTDC_VSYNC	Alternate Function Push Pull	No pull-up and no pull-down	Low	VSYNC
	PA6	LTDC_G2	Alternate Function Push Pull	No pull-up and no pull-down	Low	G2
	PB0	LTDC_R3	Alternate Function Push Pull	No pull-up and no pull-down	Low	R3
	PB1	LTDC_R6	Alternate Function Push Pull	No pull-up and no pull-down	Low	R6
	PF11	FMC_SDNRAS	Alternate Function Push Pull	No pull-up and no pull-down	Very High	SDNRAS
	PF12	FMC_A6	Alternate Function Push Pull	No pull-up and no pull-down	Very High	A6
	PF13	FMC_A7	Alternate Function Push Pull	No pull-up and no pull-down	Very High	A7
	PF14	FMC_A8	Alternate Function Push Pull	No pull-up and no pull-down	Very High	A8
	PF15	FMC_A9	Alternate Function Push Pull	No pull-up and no pull-down	Very High	A9
	PG0	FMC_A10	Alternate Function Push Pull	No pull-up and no pull-down	Very High	A10
	PG1	FMC_A11	Alternate Function Push Pull	No pull-up and no pull-down	Very High	A11
	PE7	FMC_D4	Alternate Function Push Pull	No pull-up and no pull-down	Very High	D4
	PE8	FMC_D5	Alternate Function Push Pull	No pull-up and no pull-down	Very High	D5
	PE9	FMC_D6	Alternate Function Push Pull	No pull-up and no pull-down	Very High	D6
	PE10	FMC_D7	Alternate Function Push Pull	No pull-up and no pull-down	Very High	D7
	PE11	FMC_D8	Alternate Function Push Pull	No pull-up and no pull-down	Very High	D8
	PE12	FMC_D9	Alternate Function Push Pull	No pull-up and no pull-down	Very High	D9
	PE13	FMC_D10	Alternate Function Push Pull	No pull-up and no pull-down	Very High	D10
	PE14	FMC_D11	Alternate Function Push Pull	No pull-up and no pull-down	Very High	D11
	PE15	FMC_D12	Alternate Function Push Pull	No pull-up and no pull-down	Very High	D12
	PB10	LTDC_G4	Alternate Function Push Pull	No pull-up and no pull-down	Low	G4
	PB11	LTDC_G5	Alternate Function Push Pull	No pull-up and no pull-down	Low	G5
	PB12	USB_OTG_HS_ID	Alternate Function Push Pull	No pull-up and no pull-down	Low	OTG_FS_ID
	PB13	USB_OTG_HS_VBUS	Input mode	No pull-up and no pull-down	n/a	VBUS_FS
	PB14	USB_OTG_HS_DM	Alternate Function Push Pull	No pull-up and no pull-down	Low	OTG_FS_DM
	PB15	USB_OTG_HS_DP	Alternate Function Push Pull	No pull-up and no pull-down	Low	OTG_FS_DP
	PD8	FMC_D13	Alternate Function Push Pull	No pull-up and no pull-down	Very High	D13
	PD9	FMC_D14	Alternate Function Push Pull	No pull-up and no pull-down	Very High	D14
	PD10	FMC_D15	Alternate Function Push Pull	No pull-up and no pull-down	Very High	D15
	PD14	FMC_D0	Alternate Function Push Pull	No pull-up and no pull-down	Very High	D0
	PD15	FMC_D1	Alternate Function Push Pull	No pull-up and no pull-down	Very High	D1
	PG4	FMC_BA0	Alternate Function Push Pull	No pull-up and no pull-down	Very High	BA0
	PG5	FMC_BA1	Alternate Function Push Pull	No pull-up and no pull-down	Very High	BA1
	PG6	LTDC_R7	Alternate Function Push Pull	No pull-up and no pull-down	Low	R7
	PG7	LTDC_CLK	Alternate Function Push Pull	No pull-up and no pull-down	Low	DOTCLK [LCT-RGB_DOTCLK]

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
	PG8	FMC_SDCLK	Alternate Function Push Pull	No pull-up and no pull-down	Very High	SDCLK
	PC6	LTDC_HSYNC	Alternate Function Push Pull	No pull-up and no pull-down	Low	HSYNC
	PC7	LTDC_G6	Alternate Function Push Pull	No pull-up and no pull-down	Low	G6
	PC9	I2C3_SDA	Alternate Function Open Drain	Pull-up	Low	I2C3_SDA [ACP/RF_SDA]
	PA8	I2C3_SCL	Alternate Function Open Drain	Pull-up	Low	I2C3_SCL [ACP/RF_SCL]
	PA11	LTDC_R4	Alternate Function Push Pull	No pull-up and no pull-down	Low	R4
	PA12	LTDC_R5	Alternate Function Push Pull	No pull-up and no pull-down	Low	R5
	PA13	SYS_JTMS-SWDIO	n/a	n/a	n/a	SWDIO
	PA14	SYS_JTCK-SWCLK	n/a	n/a	n/a	SWCLK
	PC10	LTDC_R2	Alternate Function Push Pull	No pull-up and no pull-down	Low	R2
	PD0	FMC_D2	Alternate Function Push Pull	No pull-up and no pull-down	Very High	D2
	PD1	FMC_D3	Alternate Function Push Pull	No pull-up and no pull-down	Very High	D3
	PD3	LTDC_G7	Alternate Function Push Pull	No pull-up and no pull-down	Low	G7
	PD6	LTDC_B2	Alternate Function Push Pull	No pull-up and no pull-down	Low	B2
	PG10	LTDC_G3	Alternate Function Push Pull	No pull-up and no pull-down	Low	G3
	PG11	LTDC_B3	Alternate Function Push Pull	No pull-up and no pull-down	Low	B3
	PG12	LTDC_B4	Alternate Function Push Pull	No pull-up and no pull-down	Low	B4
	PG15	FMC_SDNCAS	Alternate Function Push Pull	No pull-up and no pull-down	Very High	SDNCAS
	PB5	FMC_SDCKE1	Alternate Function Push Pull	No pull-up and no pull-down	Very High	SDCKE1
	PB6	FMC_SDNE1	Alternate Function Push Pull	No pull-up and no pull-down	Very High	SDNE1 [SDRAM_CS]
	PB8	LTDC_B6	Alternate Function Push Pull	No pull-up and no pull-down	Low	B6
	PB9	LTDC_B7	Alternate Function Push Pull	No pull-up and no pull-down	Low	B7
	PE0	FMC_NBL0	Alternate Function Push Pull	No pull-up and no pull-down	Very High	NBL0 [SDRAM_LDQM]
	PE1	FMC_NBL1	Alternate Function Push Pull	No pull-up and no pull-down	Very High	NBL1 [SDRAM_UDQM]
GPIO	PE2	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**Very High ***	PE2
	PE4	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**Very High ***	PE4
	PC1	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	NCS_MEMS_SPI [L3GD20_CS_I2C/SPI]
	PC2	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	CSX [LCD-RGB_CSX]
	PA0/WKUP	GPIO_EXTI0	**External Event Mode with Rising edge trigger detection ***	No pull-up and no pull-down	n/a	B1 [Blue PushButton]
	PA1	GPIO_EXTI1	**External Event Mode with Rising edge trigger detection ***	No pull-up and no pull-down	n/a	MEMS_INT1 [L3GD20_INT1]

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
	PA2	GPIO_EXTI2	**External Event Mode with Rising edge trigger detection ***	No pull-up and no pull-down	n/a	MEMS_INT2 [L3GD20_INT2]
	PA7	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	ACP_RST
	PC4	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	OTG_FS_PSO [OTG_FS_PowerSwitchOn]
	PC5	GPIO_EXTI5	**External Event Mode with Rising edge trigger detection ***	No pull-up and no pull-down	n/a	OTG_FS_OC [OTG_FS_OverCurrent]
	PB2/BOOT1	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	BOOT1
	PD11	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	TE [LCD-RGB_TE]
	PD12	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	RDX [LDC-RGB_RDX]
	PD13	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	WRX_DCX [LCD-RGB_WRX_DCX]
	PA15	GPIO_EXTI15	**External Event Mode with Rising edge trigger detection ***	No pull-up and no pull-down	n/a	TP_INT1 [Touch Panel]
	PG13	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LD3 [Green Led]
	PG14	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LD4 [Red 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	15	0
System tick timer	true	15	0
USART1 global interrupt	true	5	0
TIM7 global interrupt	true	0	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		
TIM2 global interrupt	unused		
TIM3 global interrupt	unused		
TIM4 global interrupt	unused		
FPU global interrupt	unused		

*** User modified value**

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32F4
Line	STM32F429/439
MCU	STM32F429ZITx
Datasheet	024030_Rev8

7.2. Parameter Selection

Temperature	25
Vdd	null

8. Software Project

8.1. Project Settings

Name	Value
Project Name	BallOnPlate_STM32F429
Project Folder	/home/peter/STM32/STM32Workspace/BallOnPlate/BallOnPlate_STM32F429
Toolchain / IDE	SW4STM32
Firmware Package Name and Version	STM32Cube FW_F4 V1.16.0

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