



## 1. Description

### 1.1. Project

Project Name	RoboSoccer_F767ZI
Board Name	NUCLEO-F767ZI
Generated with:	STM32CubeMX 6.9.2
Date	06/13/2025

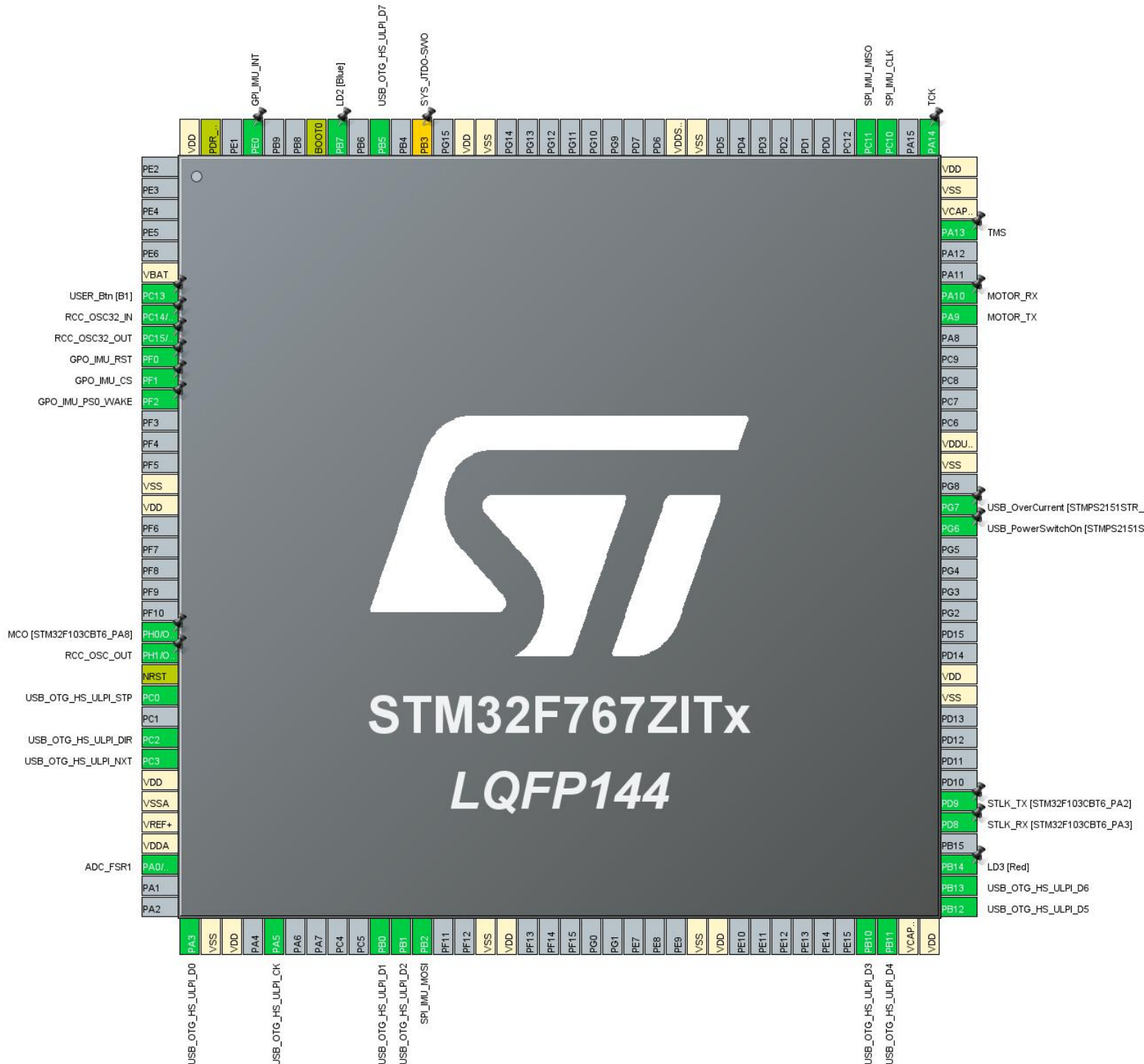
### 1.2. MCU

MCU Series	STM32F7
MCU Line	STM32F7x7
MCU name	STM32F767ZITx
MCU Package	LQFP144
MCU Pin number	144

### 1.3. Core(s) information

Core(s)	Arm Cortex-M7
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## 2. Pinout Configuration



### 3. Pins Configuration

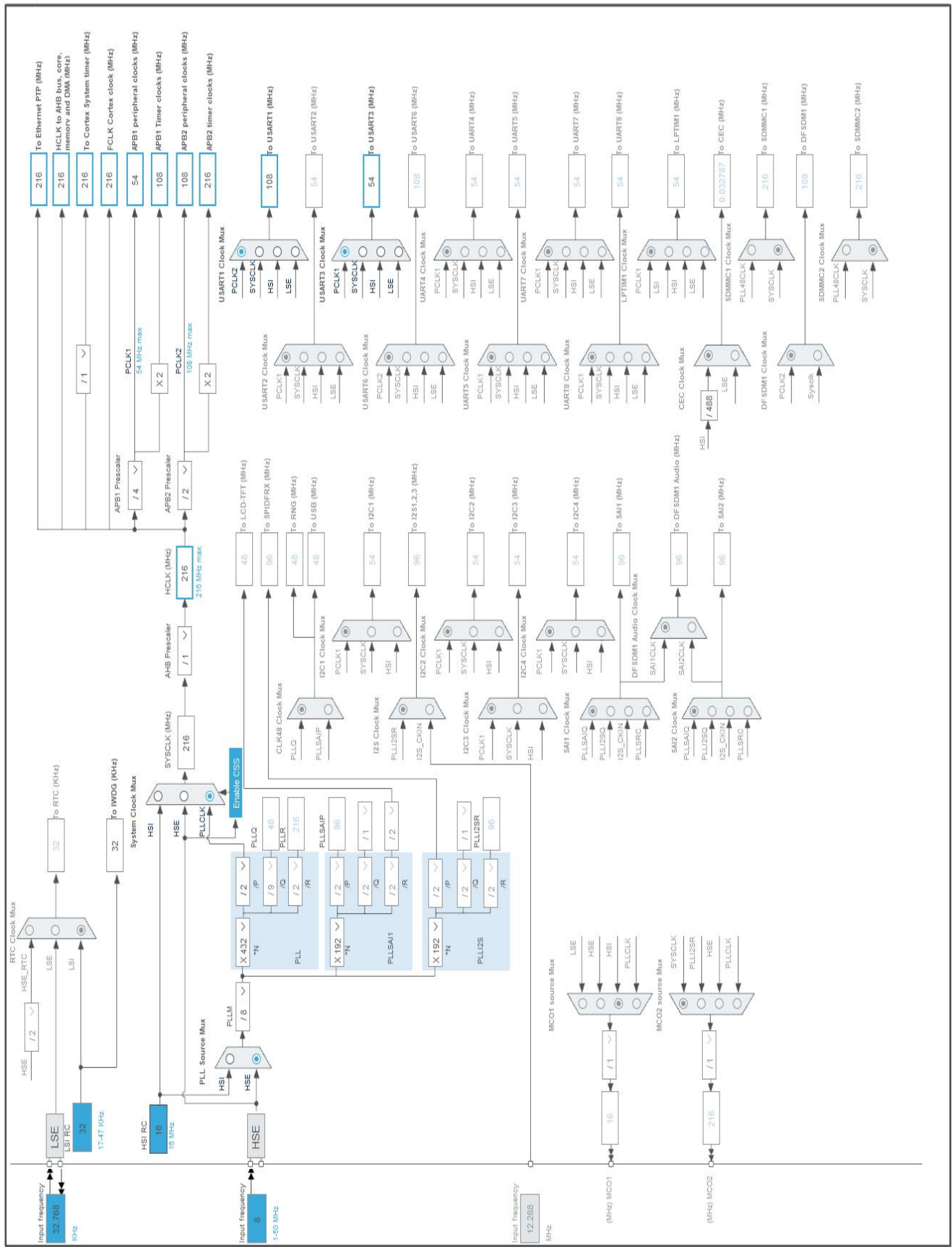
Pin Number LQFP144	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
6	VBAT	Power		
7	PC13	I/O	GPIO_EXTI13	USER_Btn [B1]
8	PC14/OSC32_IN	I/O	RCC_OSC32_IN	
9	PC15/OSC32_OUT	I/O	RCC_OSC32_OUT	
10	PF0 *	I/O	GPIO_Output	GPO_IMU_RST
11	PF1 *	I/O	GPIO_Output	GPO_IMU_CS
12	PF2 *	I/O	GPIO_Output	GPO_IMU_PS0_WAKE
16	VSS	Power		
17	VDD	Power		
23	PH0/OSC_IN	I/O	RCC_OSC_IN	MCO [STM32F103CBT6_PA8]
24	PH1/OSC_OUT	I/O	RCC_OSC_OUT	
25	NRST	Reset		
26	PC0	I/O	USB_OTG_HS_ULPI_STP	
28	PC2	I/O	USB_OTG_HS_ULPI_DIR	
29	PC3	I/O	USB_OTG_HS_ULPI_NXT	
30	VDD	Power		
31	VSSA	Power		
32	VREF+	Power		
33	VDDA	Power		
34	PA0/WKUP	I/O	ADC1_IN0	ADC_FSR1
37	PA3	I/O	USB_OTG_HS_ULPI_D0	
38	VSS	Power		
39	VDD	Power		
41	PA5	I/O	USB_OTG_HS_ULPI_CK	
46	PB0	I/O	USB_OTG_HS_ULPI_D1	
47	PB1	I/O	USB_OTG_HS_ULPI_D2	
48	PB2	I/O	SPI3_MOSI	SPI_IMU_MOSI
51	VSS	Power		
52	VDD	Power		
61	VSS	Power		
62	VDD	Power		
69	PB10	I/O	USB_OTG_HS_ULPI_D3	
70	PB11	I/O	USB_OTG_HS_ULPI_D4	
71	VCAP_1	Power		
72	VDD	Power		

Pin Number LQFP144	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
73	PB12	I/O	USB_OTG_HS_ULPI_D5	
74	PB13	I/O	USB_OTG_HS_ULPI_D6	
75	PB14 *	I/O	GPIO_Output	LD3 [Red]
77	PD8	I/O	USART3_TX	STLK_RX [STM32F103CBT6_PA3]
78	PD9	I/O	USART3_RX	STLK_TX [STM32F103CBT6_PA2]
83	VSS	Power		
84	VDD	Power		
91	PG6 *	I/O	GPIO_Output	USB_PowerSwitchOn [STMP2151STR_EN]
92	PG7 *	I/O	GPIO_Input	USB_OverCurrent [STMP2151STR_FAULT]
94	VSS	Power		
95	VDDUSB	Power		
101	PA9	I/O	USART1_TX	MOTOR_TX
102	PA10	I/O	USART1_RX	MOTOR_RX
105	PA13	I/O	SYS_JTMS-SWDIO	TMS
106	VCAP_2	Power		
107	VSS	Power		
108	VDD	Power		
109	PA14	I/O	SYS_JTCK-SWCLK	TCK
111	PC10	I/O	SPI3_SCK	SPI_IMU_CLK
112	PC11	I/O	SPI3_MISO	SPI_IMU_MISO
120	VSS	Power		
121	VDDSDMMC	Power		
130	VSS	Power		
131	VDD	Power		
133	PB3 **	I/O	SYS_JTDO-SWO	
135	PB5	I/O	USB_OTG_HS_ULPI_D7	
137	PB7 *	I/O	GPIO_Output	LD2 [Blue]
138	BOOT0	Boot		
141	PE0	I/O	GPIO_EXTI0	GPI_IMU_INT
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. Software Project

### 5.1. Project Settings

Name	Value
Project Name	RoboSoccer_F767ZI
Project Folder	C:\Users\Bowen\Documents\UW_Files\Proj\RoboSoccer_F767ZI
Toolchain / IDE	STM32CubeIDE
Firmware Package Name and Version	STM32Cube FW_F7 V1.17.3
Application Structure	Advanced
Generate Under Root	Yes
Do not generate the main()	No
Minimum Heap Size	0x200
Minimum Stack Size	0x400

### 5.2. Code Generation Settings

Name	Value
STM32Cube MCU packages and embedded software	Copy only the necessary library files
Generate peripheral initialization as a pair of '.c/.h' files	Yes
Backup previously generated files when re-generating	Yes
Keep User Code when re-generating	Yes
Delete previously generated files when not re-generated	Yes
Set all free pins as analog (to optimize the power consumption)	No
Enable Full Assert	No

### 5.3. Advanced Settings - Generated Function Calls

Rank	Function Name	Peripheral Instance Name
1	SystemClock_Config	RCC
2	MX_GPIO_Init	GPIO
3	MX_DMA_Init	DMA
4	MX_USART3_UART_Init	USART3
5	MX_ADC1_Init	ADC1
6	MX_TIM2_Init	TIM2
7	MX_SPI3_Init	SPI3
8	MX_USB_OTG_HS_PCD_Init	USB_OTG_HS
9	MX_USART1_UART_Init	USART1
10	MX_IWDG_Init	IWDG





## 1. Power Consumption Calculator report

### 1.1. Microcontroller Selection

Series	STM32F7
Line	STM32F7x7
MCU	STM32F767ZITx
Datasheet	DS11532_Rev4

### 1.2. Parameter Selection

Temperature	25
Vdd	3.3

### 1.3. Battery Selection

Battery	Alkaline(9V)
Capacity	625.0 mAh
Self Discharge	0.3 %/month
Nominal Voltage	9.0 V
Max Cont Current	200.0 mA
Max Pulse Current	0.0 mA
Cells in series	1
Cells in parallel	1

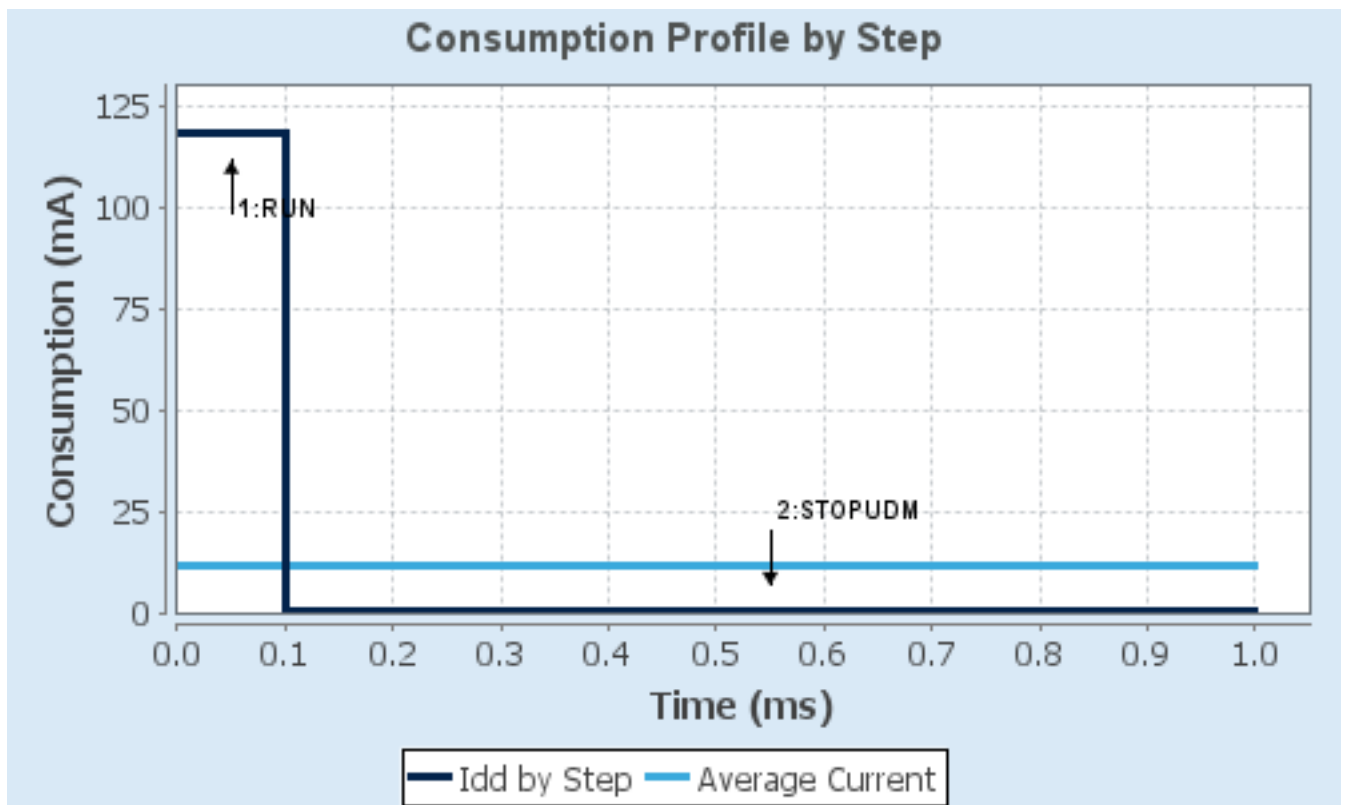
#### 1.4. Sequence

<b>Step</b>	Step1	Step2
<b>Mode</b>	RUN	STOP UDM (Under Drive)
<b>Vdd</b>	3.3	3.3
<b>Voltage Source</b>	Battery	Battery
<b>Range</b>	Scale1-High	No Scale
<b>Fetch Type</b>	ICTM FLASH-SingleBank REGON	n/a
<b>CPU Frequency</b>	216 MHz	0 Hz
<b>Clock Configuration</b>	HSE PLL	Regulator LP Flash-PwrDwn
<b>Clock Source Frequency</b>	4 MHz	0 Hz
<b>Peripherals</b>		
<b>Additional Cons.</b>	0 mA	0 mA
<b>Average Current</b>	118 mA	130 $\mu$ A
<b>Duration</b>	0.1 ms	0.9 ms
<b>DMIPS</b>	462.0	0.0
<b>Ta Max</b>	89.42	104.98
<b>Category</b>	In DS Table	In DS Table

#### 1.5. Results

Sequence Time	1 ms	Average Current	11.92 mA
Battery Life	2 days, 4 hours	Average DMIPS	462.24005 DMIPS

#### 1.6. Chart



## 2. Peripherals and Middlewares Configuration

### 2.1. ADC1

mode: IN0

#### 2.1.1. Parameter Settings:

##### ADCs\_Common\_Settings:

Mode Independent mode

##### ADC\_Settings:

Clock Prescaler PCLK2 divided by 4

Resolution 12 bits (15 ADC Clock cycles)

Data Alignment Right alignment

Scan Conversion Mode **Enabled \***

Continuous Conversion Mode Disabled

Discontinuous Conversion Mode Disabled

DMA Continuous Requests **Enabled \***

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 0

Sampling Time **480 Cycles \***

##### ADC\_Injected\_ConversionMode:

Number Of Conversions 0

##### WatchDog:

Enable Analog WatchDog Mode false

### 2.2. IWDG

mode: Activated

#### 2.2.1. Parameter Settings:

##### Watchdog Clocking:

IWDG counter clock prescaler **32 \***

IWDG window value 4095

IWDG down-counter reload value **999 \***

## 2.3. RCC

**High Speed Clock (HSE): BYPASS Clock Source**

**Low Speed Clock (LSE) : Crystal/Ceramic Resonator**

### 2.3.1. Parameter Settings:

#### **System Parameters:**

VDD voltage (V)	3.3
Flash Latency(WS)	7 WS (8 CPU cycle)

#### **RCC Parameters:**

HSI Calibration Value	16
TIM Prescaler Selection	Disabled
HSE Startup Timeout Value (ms)	100
LSE Startup Timeout Value (ms)	5000

#### **Power Parameters:**

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

## 2.4. SPI3

**Mode: Full-Duplex Master**

### 2.4.1. Parameter Settings:

#### **Basic Parameters:**

Frame Format	Motorola
Data Size	<b>8 Bits *</b>
First Bit	MSB First

#### **Clock Parameters:**

Prescaler (for Baud Rate)	<b>32 *</b>
Baud Rate	<b>1.6875 MBits/s *</b>
Clock Polarity (CPOL)	<b>High *</b>
Clock Phase (CPHA)	<b>2 Edge *</b>

#### **Advanced Parameters:**

CRC Calculation	Disabled
NSS Signal Type	Software

## 2.5. SYS

**Debug: Serial Wire**

**Timebase Source: TIM6**

## 2.6. TIM2

**Clock Source : Internal Clock**

### 2.6.1. Parameter Settings:

#### **Counter Settings:**

Prescaler (PSC - 16 bits value)	<b>107 *</b>
Counter Mode	Up
Counter Period (AutoReload Register - 32 bits value )	0xFFFFFFFF
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 TRGO	Reset (UG bit from TIMx_EGR)

## 2.7. USART1

**Mode: Asynchronous**

### 2.7.1. Parameter Settings:

#### **Basic Parameters:**

Baud Rate	<b>1000000 *</b>
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

## 2.8. USART3

### Mode: Asynchronous

#### 2.8.1. 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

## 2.9. USB\_OTG\_HS

### External Phy: Device\_Only

#### 2.9.1. Parameter Settings:

Speed	Device High Speed 480MBit/s
Enable internal IP DMA	Disabled
Physical interface	External Phy
Low power	Disabled
Link Power Management	Disabled
Use dedicated end point 1 interrupt	Disabled
VBUS sensing	Disabled

Signal start of frame Disabled

## 2.10. FREERTOS

### Interface: CMSIS\_V2

#### 2.10.1. Config parameters:

##### API:

FreeRTOS API CMSIS v2

##### Versions:

FreeRTOS version 10.2.1

CMSIS-RTOS version 2.00

##### MPU/FPU:

ENABLE\_MPU Disabled

ENABLE\_FPU Disabled

##### Kernel settings:

USE\_PREEMPTION Enabled

CPU\_CLOCK\_HZ SystemCoreClock

TICK\_RATE\_HZ 1000

MAX\_PRIORITIES 56

MINIMAL\_STACK\_SIZE 128

MAX\_TASK\_NAME\_LEN 16

USE\_16\_BIT\_TICKS Disabled

IDLE\_SHOULD\_YIELD Enabled

USE\_MUTEXES Enabled

USE\_RECURSIVE\_MUTEXES Enabled

USE\_COUNTING\_SEMAPHORES Enabled

QUEUE\_REGISTRY\_SIZE 8

USE\_APPLICATION\_TASK\_TAG Disabled

ENABLE\_BACKWARD\_COMPATIBILITY Enabled

USE\_PORT\_OPTIMISED\_TASK\_SELECTION Disabled

USE\_TICKLESS\_IDLE Disabled

USE\_TASK\_NOTIFICATIONS Enabled

RECORD\_STACK\_HIGH\_ADDRESS Enabled \*

##### Memory management settings:

Memory Allocation Dynamic / Static

TOTAL\_HEAP\_SIZE 15360

Memory Management scheme heap\_4

##### Hook function related definitions:

USE\_IDLE\_HOOK Enabled \*



USE_TICK_HOOK	Enabled *
USE_MALLOC_FAILED_HOOK	Disabled
USE_DAEMON_TASK_STARTUP_HOOK	Disabled
CHECK_FOR_STACK_OVERFLOW	Option2 *

**Run time and task stats gathering related definitions:**

GENERATE_RUN_TIME_STATS	Enabled *
USE_TRACE_FACILITY	Enabled
USE_STATS_FORMATTING_FUNCTIONS	Enabled *

**Co-routine related definitions:**

USE_CO_ROUTINES	Disabled
MAX_CO_ROUTINE_PRIORITIES	2

**Software timer definitions:**

USE_TIMERS	Enabled
TIMER_TASK_PRIORITY	2
TIMER_QUEUE_LENGTH	10
TIMER_TASK_STACK_DEPTH	256

**Interrupt nesting behaviour configuration:**

LIBRARY_LOWEST_INTERRUPT_PRIORITY	15
LIBRARY_MAX_SYSCALL_INTERRUPT_PRIORITY	5

**Added with 10.2.1 support:**

MESSAGE_BUFFER_LENGTH_TYPE	size_t
USE_POSIX_ERRNO	Disabled

## 2.10.2. Include parameters:

**Include definitions:**

vTaskPrioritySet	Enabled
uxTaskPriorityGet	Enabled
vTaskDelete	Enabled
vTaskCleanUpResources	Disabled
vTaskSuspend	Enabled
vTaskDelayUntil	Enabled
vTaskDelay	Enabled
xTaskGetSchedulerState	Enabled
xTaskResumeFromISR	Enabled
xQueueGetMutexHolder	Enabled
xSemaphoreGetMutexHolder	Disabled
pcTaskGetTaskName	Disabled
uxTaskGetStackHighWaterMark	Enabled
xTaskGetCurrentTaskHandle	Disabled

eTaskGetState	Enabled
xEventGroupSetBitFromISR	Disabled
xTimerPendFunctionCall	Enabled
xTaskAbortDelay	Disabled
xTaskGetHandle	Disabled
uxTaskGetStackHighWaterMark2	Disabled

### 2.10.3. Advanced settings:

#### **Newlib settings (see parameter description first):**

USE\_NEWLIB\_REENTRANT                      **Enabled \***

#### **Project settings (see parameter description first):**

Use FW pack heap file                      Enabled

**\* User modified value**

### 3. System Configuration

#### 3.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
ADC1	PA0/WKUP	ADC1_IN0	Analog mode	No pull-up and no pull-down	n/a	ADC_FSR1
RCC	PC14/OSC32_IN	RCC_OSC32_IN	n/a	n/a	n/a	
	PC15/OSC32_OUT	RCC_OSC32_OUT	n/a	n/a	n/a	
	PH0/OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	MCO [STM32F103CBT6_PA8]
	PH1/OSC_OUT	RCC_OSC_OUT	n/a	n/a	n/a	
SPI3	PB2	SPI3_MOSI	Alternate Function Push Pull	No pull-up and no pull-down	Very High *	SPI_IMU_MOSI
	PC10	SPI3_SCK	Alternate Function Push Pull	No pull-up and no pull-down	Very High *	SPI_IMU_CLK
	PC11	SPI3_MISO	Alternate Function Push Pull	No pull-up and no pull-down	Very High *	SPI_IMU_MISO
SYS	PA13	SYS_JTMS-SWDIO	n/a	n/a	n/a	TMS
	PA14	SYS_JTCK-SWCLK	n/a	n/a	n/a	TCK
USART1	PA9	USART1_TX	Alternate Function Push Pull	No pull-up and no pull-down	Very High *	MOTOR_TX
	PA10	USART1_RX	Alternate Function Push Pull	No pull-up and no pull-down	Very High *	MOTOR_RX
USART3	PD8	USART3_TX	Alternate Function Push Pull	No pull-up and no pull-down	Very High *	STLK_RX [STM32F103CBT6_PA3]
	PD9	USART3_RX	Alternate Function Push Pull	No pull-up and no pull-down	Very High *	STLK_TX [STM32F103CBT6_PA2]
USB_OTG_HS	PC0	USB_OTG_HS_ULPI_STP	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PC2	USB_OTG_HS_ULPI_DIR	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PC3	USB_OTG_HS_ULPI_NXT	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PA3	USB_OTG_HS_ULPI_D0	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PA5	USB_OTG_HS_ULPI_CK	Alternate Function Push Pull	No pull-up and no pull-down	Very High	

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
	PB0	USB_OTG_HS_ULPI_D1	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PB1	USB_OTG_HS_ULPI_D2	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PB10	USB_OTG_HS_ULPI_D3	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PB11	USB_OTG_HS_ULPI_D4	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PB12	USB_OTG_HS_ULPI_D5	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PB13	USB_OTG_HS_ULPI_D6	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
	PB5	USB_OTG_HS_ULPI_D7	Alternate Function Push Pull	No pull-up and no pull-down	Very High	
Single Mapped Signals	PB3	SYS_JTDO-SWO	n/a	n/a	n/a	
GPIO	PC13	GPIO_EXTI13	External Interrupt Mode with Rising edge trigger detection	No pull-up and no pull-down	n/a	USER_Btn [B1]
	PF0	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	GPO_IMU_RST
	PF1	GPIO_Output	Output Push Pull	No pull-up and no pull-down	<b>Very High *</b>	GPO_IMU_CS
	PF2	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	GPO_IMU_PS0_WAKE
	PB14	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LD3 [Red]
	PG6	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	USB_PowerSwitchOn [STMPS2151STR_EN]
	PG7	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	USB_OverCurrent [STMPS2151STR_FAULT]
	PB7	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LD2 [Blue]
	PE0	GPIO_EXTI0	<b>External Interrupt Mode with Falling edge trigger detection</b>	<b>Pull-up *</b>	n/a	GPI_IMU_INT

### 3.2. DMA configuration

DMA request	Stream	Direction	Priority
ADC1	DMA2_Stream0	Peripheral To Memory	<b>Medium *</b>

#### ADC1: DMA2\_Stream0 DMA request Settings:

Mode: **Circular \***  
Use fifo: Disable  
Peripheral Increment: Disable  
Memory Increment: **Enable \***  
Peripheral Data Width: Half Word  
Memory Data Width: Half Word

### 3.3. NVIC configuration

#### 3.3.1. NVIC

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
EXTI line0 interrupt	true	4	0
USART1 global interrupt	true	5	0
USART3 global interrupt	true	5	0
SPI3 global interrupt	true	5	0
TIM6 global interrupt, DAC1 and DAC2 underrun error interrupts	true	15	0
DMA2 stream0 global interrupt	true	5	0
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
ADC1, ADC2 and ADC3 global interrupts	unused		
TIM2 global interrupt	unused		
EXTI line[15:10] interrupts	unused		
USB On The Go HS End Point 1 Out global interrupt	unused		
USB On The Go HS End Point 1 In global interrupt	unused		
USB On The Go HS global interrupt	unused		
FPU global interrupt	unused		

#### 3.3.2. NVIC Code generation

Enabled interrupt Table	Select for init sequence ordering	Generate IRQ handler	Call HAL handler
Non maskable interrupt	false	true	false
Hard fault interrupt	false	true	false
Memory management fault	false	true	false
Pre-fetch fault, memory access fault	false	true	false
Undefined instruction or illegal state	false	true	false
System service call via SWI instruction	false	false	false

Enabled interrupt Table	Select for init sequence ordering	Generate IRQ handler	Call HAL handler
Debug monitor	false	true	false
Pendable request for system service	false	false	false
System tick timer	false	false	true
EXTI line0 interrupt	false	true	true
USART1 global interrupt	false	true	true
USART3 global interrupt	false	true	true
SPI3 global interrupt	false	true	true
TIM6 global interrupt, DAC1 and DAC2 underrun error interrupts	false	true	true
DMA2 stream0 global interrupt	false	true	true

\* User modified value

## 4. System Views

### 4.1. Category view

#### 4.1.1. Current

Middleware						
FREERTOS						
System Core	Analog	Timers	Connectivity	Multimedia	Security	Computing
CORTEX_M7	ADC1	TIM2	SPI3			
DMA			USART1			
GPIO			USART3			
IWDG			USB_HS			
IVIC						
RCC						
SYS						



## 5. Docs & Resources

Type	Link
BSDL files	<a href="https://www.st.com/resource/en/bsdl_model/stm32f7_bsdL.zip">https://www.st.com/resource/en/bsdl_model/stm32f7_bsdL.zip</a>
IBIS models	<a href="https://www.st.com/resource/en/ibis_model/stm32f7_ibis.zip">https://www.st.com/resource/en/ibis_model/stm32f7_ibis.zip</a>
System View Description	<a href="https://www.st.com/resource/en/svd/stm32f7-svd.zip">https://www.st.com/resource/en/svd/stm32f7-svd.zip</a>
Presentations	<a href="https://www.st.com/resource/en/product_presentation/stm32-stm8_embedded_software_solutions.pdf">https://www.st.com/resource/en/product_presentation/stm32-stm8_embedded_software_solutions.pdf</a>
Presentations	<a href="https://www.st.com/resource/en/product_presentation/stm32_eval_tools_portfolio.pdf">https://www.st.com/resource/en/product_presentation/stm32_eval_tools_portfolio.pdf</a>
Presentations	<a href="https://www.st.com/resource/en/product_presentation/stm32_stm8_functional-safety-packages.pdf">https://www.st.com/resource/en/product_presentation/stm32_stm8_functional-safety-packages.pdf</a>
Presentations	<a href="https://www.st.com/resource/en/product_presentation/stm32-stm8_software_development_tools.pdf">https://www.st.com/resource/en/product_presentation/stm32-stm8_software_development_tools.pdf</a>
Presentations	<a href="https://www.st.com/resource/en/product_presentation/microcontrollers-stm32-family-overview.pdf">https://www.st.com/resource/en/product_presentation/microcontrollers-stm32-family-overview.pdf</a>
Brochures	<a href="https://www.st.com/resource/en/brochure/products-and-solutions-for-plcs-and-smart-i-os.pdf">https://www.st.com/resource/en/brochure/products-and-solutions-for-plcs-and-smart-i-os.pdf</a>
Flyers	<a href="https://www.st.com/resource/en/flyer/flstm32nucleo.pdf">https://www.st.com/resource/en/flyer/flstm32nucleo.pdf</a>
Flyers	<a href="https://www.st.com/resource/en/flyer/flstm32trust.pdf">https://www.st.com/resource/en/flyer/flstm32trust.pdf</a>
Application Notes	<a href="https://www.st.com/resource/en/application_note/an1709-emc-design-guide-for-stm8-stm32-and-legacy-mcus-stmicroelectronics.pdf">https://www.st.com/resource/en/application_note/an1709-emc-design-guide-for-stm8-stm32-and-legacy-mcus-stmicroelectronics.pdf</a>
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Programming Manuals	<a href="https://www.st.com/resource/en/programming_manual/pm0253-stm32f7-series-and-stm32h7-series-cortexm7-processor-programming-manual-stmicroelectronics.pdf">https://www.st.com/resource/en/programming_manual/pm0253-stm32f7-series-and-stm32h7-series-cortexm7-processor-programming-manual-stmicroelectronics.pdf</a>
Reference Manuals	<a href="https://www.st.com/resource/en/reference_manual/rm0410-stm32f76xxx-and-stm32f77xxx-advanced-armbased-32bit-mcus-stmicroelectronics.pdf">https://www.st.com/resource/en/reference_manual/rm0410-stm32f76xxx-and-stm32f77xxx-advanced-armbased-32bit-mcus-stmicroelectronics.pdf</a>
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