



## 1. Description

### 1.1. Project

Project Name	stm32-cube
Board Name	custom
Generated with:	STM32CubeMX 6.15.0
Date	09/27/2025

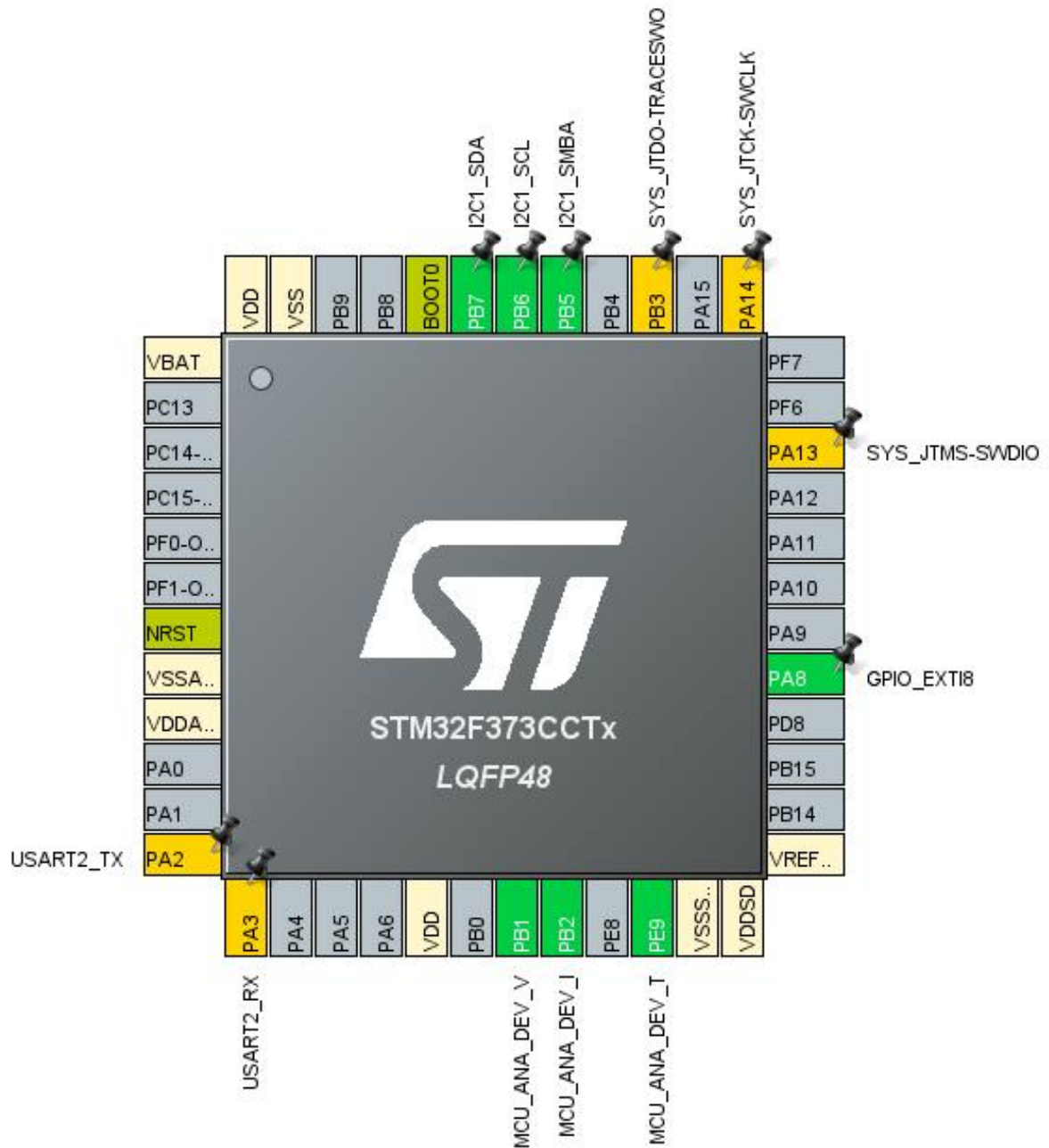
### 1.2. MCU

MCU Series	STM32F3
MCU Line	STM32F373
MCU name	STM32F373CCTx
MCU Package	LQFP48
MCU Pin number	48

### 1.3. Core(s) information

Core(s)	Arm Cortex-M4
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## 2. Pinout Configuration

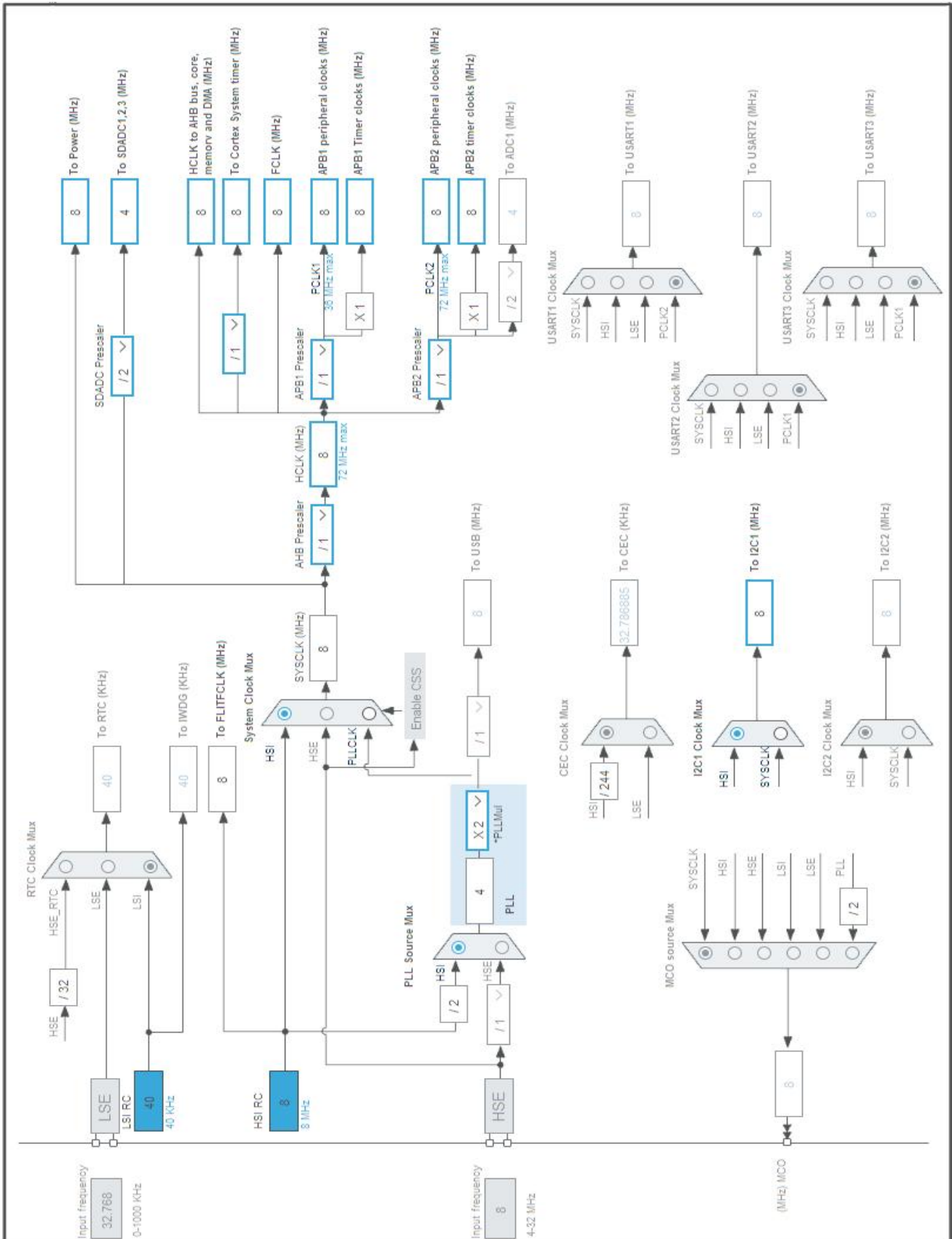


### 3. Pins Configuration

Pin Number LQFP48	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VBAT	Power		
7	NRST	Reset		
8	VSSA/VREF-	Power		
9	VDDA/VREF+	Power		
12	PA2 *	I/O	USART2_TX	
13	PA3 *	I/O	USART2_RX	
17	VDD	Power		
19	PB1	I/O	SDADC1_AIN5P	MCU_ANA_DEV_V
20	PB2	I/O	SDADC1_AIN4P	MCU_ANA_DEV_I
22	PE9	I/O	SDADC1_AIN7P	MCU_ANA_DEV_T
23	VSSSD/VREFSD-	Power		
24	VDDSD	Power		
25	VREFSD+	Power		
29	PA8	I/O	GPIO_EXTI8	
34	PA13 *	I/O	SYS_JTMS-SWDIO	
37	PA14 *	I/O	SYS_JTCK-SWCLK	
39	PB3 *	I/O	SYS_JTDO-TRACESWO	
41	PB5	I/O	I2C1_SMBA	
42	PB6	I/O	I2C1_SCL	
43	PB7	I/O	I2C1_SDA	
44	BOOT0	Boot		
47	VSS	Power		
48	VDD	Power		

\* The pin is affected with a peripheral function but no peripheral mode is activated

## 4. Clock Tree Configuration



## 1. Power Consumption Calculator report

### 1.1. Microcontroller Selection

Series	STM32F3
Line	STM32F373
MCU	STM32F373CCTx
Datasheet	DS8845_Rev7

### 1.2. Parameter Selection

Temperature	25
Vdd	3.6

### 1.3. Battery Selection

Battery	Li-SOCL2(A3400)
Capacity	3400.0 mAh
Self Discharge	0.08 %/month
Nominal Voltage	3.6 V
Max Cont Current	100.0 mA
Max Pulse Current	200.0 mA
Cells in series	1
Cells in parallel	1

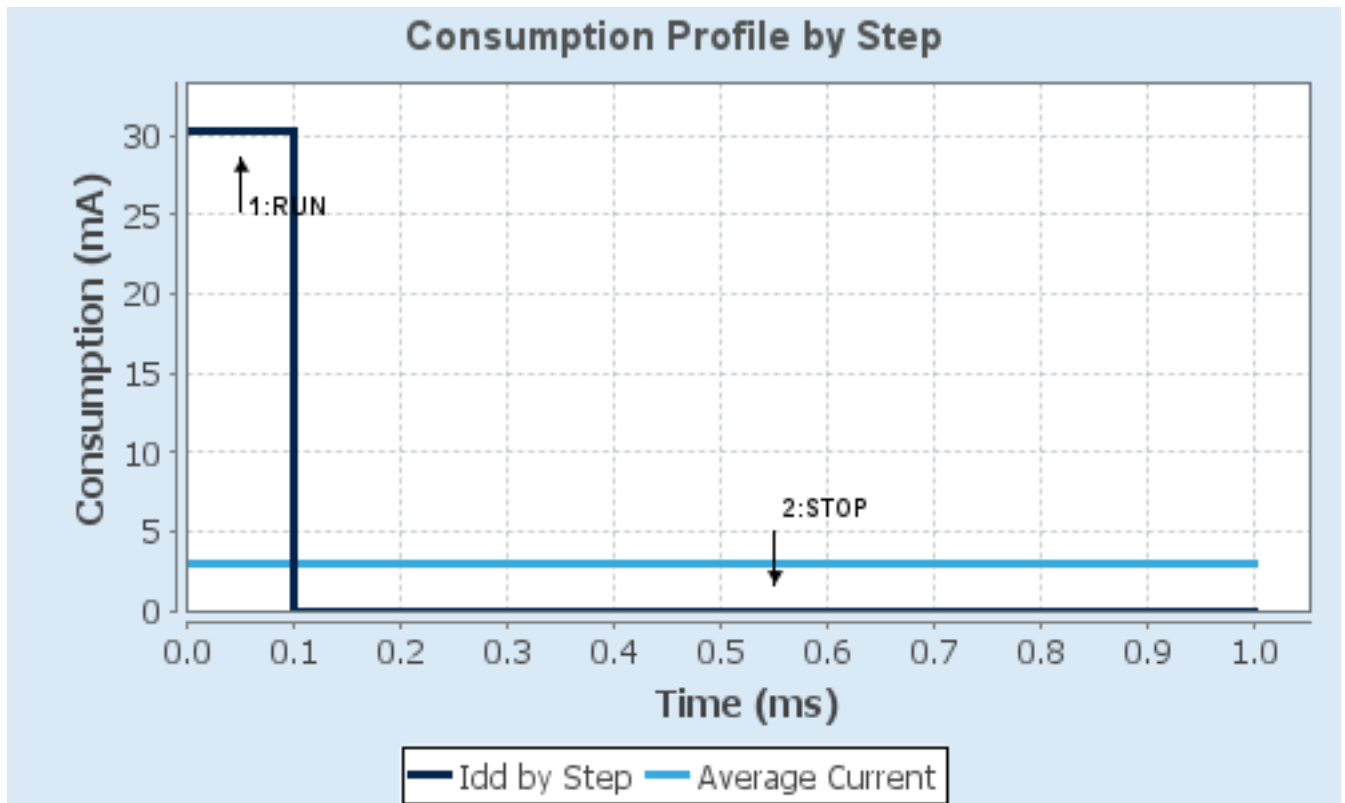
#### 1.4. Sequence

<b>Step</b>	Step1	Step2
<b>Mode</b>	RUN	STOP
<b>Vdd</b>	3.6	3.6
<b>Voltage Source</b>	Battery	Battery
<b>Range</b>	No Scale	No Scale
<b>Fetch Type</b>	RAM	n/a
<b>CPU Frequency</b>	72 MHz	0 Hz
<b>Clock Configuration</b>	HSEBYP PLL	Regulator LP
<b>Clock Source Frequency</b>	8 MHz	0 Hz
<b>Peripherals</b>		
<b>Additional Cons.</b>	0 mA	0 mA
<b>Average Current</b>	30.25 mA	10.9 $\mu$ A
<b>Duration</b>	0.1 ms	0.9 ms
<b>DMIPS</b>	90.0	0.0
<b>Ta Max</b>	99.01	105
<b>Category</b>	In DS Table	In DS Table

#### 1.5. Results

Sequence Time	1 ms	Average Current	3.03 mA
Battery Life	1 month, 16 days, 4 hours	Average DMIPS	90.0 DMIPS

#### 1.6. Chart





## 2. Software Project

### 2.1. Project Settings

Name	Value
Project Name	stm32-cube
Project Folder	D:\Projects\Private\Sailing\semantic-boat\stm32-cube
Toolchain / IDE	EWARM V8.32
Firmware Package Name and Version	STM32Cube FW_F3 V1.11.5
Application Structure	Advanced
Generate Under Root	No
Do not generate the main()	No
Minimum Heap Size	0x200
Minimum Stack Size	0x400

### 2.2. Code Generation Settings

Name	Value
STM32Cube MCU packages and embedded software	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
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

### 2.3. Advanced Settings - Generated Function Calls

Rank	Function Name	Peripheral Instance Name
1	SystemClock_Config	RCC
2	MX_GPIO_Init	GPIO
3	MX_I2C1_SMBUS_Init	I2C1
4	MX_SDADC1_Init	SDADC1

## 3. Peripherals and Middlewares Configuration

### 3.1. I2C1

#### I2C: SMBus-Alert-mode

##### 3.1.1. Parameter Settings:

##### Timing configuration:

I2C Speed Mode	Standard Mode
I2C Speed Frequency (KHz)	100
Rise Time (ns)	100
Fall Time (ns)	100
Coefficient of Digital Filter	0
Analog Filter	Enabled
Timing	<b>0x00201D2B *</b>

##### SMBus Features:

Packet Error Check Mode	PEC Disabled
Peripheral Mode	Peripheral Mode Smbus Slave

##### SMBus Slave Features:

Clock No Stretch Mode	Disabled
General Call Address Detection	Disabled
Primary Address Length selection	7-bit
Dual Address Acknowledged	Disabled
Primary slave address	1

##### Timeout configuration:

Extended Clock Timeout	Disabled
Idle Clock Timeout Detection	Disabled
Timeout Time (ns)	25000000
Timeout	0x00008061

### 3.2. RCC

#### 3.2.1. Parameter Settings:

##### System Parameters:

VDD voltage (V)	3.3
Prefetch Buffer	Enabled
Flash Latency(WS)	0 WS (1 CPU cycle)

##### RCC Parameters:

HSI Calibration Value	16
HSE Startup Timeout Value (ms)	100

LSE Startup Timeout Value (ms) 5000

### 3.3. SDADC1

**IN4: IN4-Single-Ended**

**IN5: IN5-Single-Ended**

**IN7: IN7-Single-Ended**

#### 3.3.1. Parameter Settings:

##### **General Settings:**

Low Power Mode	None
Fast Conversion Mode	Disable
Slow Clock Mode	Disable
Reference Voltage	Forced externally using VREF pin

##### **SDADC Regular Conversions Settings:**

Enable Regular Conversion	Disable
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##### **SDADC Injected Conversions Settings:**

Enable Injected Conversion	Disable
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### 3.4. SYS

**Timebase Source: SysTick**

\* User modified value

## 4. System Configuration

### 4.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
I2C1	PB5	I2C1_SMBA	Alternate Function Open Drain	No pull-up and no pull-down	High *	
	PB6	I2C1_SCL	Alternate Function Open Drain	No pull-up and no pull-down	High *	
	PB7	I2C1_SDA	Alternate Function Open Drain	No pull-up and no pull-down	High *	
SDADC1	PB1	SDADC1_AIN5P	Analog mode	No pull-up and no pull-down	n/a	MCU_ANA_DEV_V
	PB2	SDADC1_AIN4P	Analog mode	No pull-up and no pull-down	n/a	MCU_ANA_DEV_I
	PE9	SDADC1_AIN7P	Analog mode	No pull-up and no pull-down	n/a	MCU_ANA_DEV_T
Single Mapped Signals	PA2	USART2_TX	Alternate Function Push Pull	No pull-up and no pull-down	High *	
	PA3	USART2_RX	Alternate Function Push Pull	No pull-up and no pull-down	High *	
	PA13	SYS_JTMS-SWDIO	n/a	n/a	n/a	
	PA14	SYS_JTCK-SWCLK	n/a	n/a	n/a	
	PB3	SYS_JTDO-TRACESWO	n/a	n/a	n/a	
GPIO	PA8	GPIO_EXTI8	External Interrupt Mode with Rising edge trigger detection	No pull-up and no pull-down	n/a	

### 4.2. DMA configuration

nothing configured in DMA service

### 4.3. NVIC configuration

#### 4.3.1. 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
Prefetch 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	15	0
PVD interrupt through EXTI line16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
EXTI line[9:5] interrupts	unused		
I2C1 event global interrupt / I2C1 wake-up interrupt through EXTI line 23	unused		
I2C1 error interrupt	unused		
SDADC1 global interrupt	unused		
Floating point unit interrupt	unused		

#### 4.3.2. 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
Prefetch fault, memory access fault	false	true	false
Undefined instruction or illegal state	false	true	false
System service call via SWI instruction	false	true	false
Debug monitor	false	true	false
Pendable request for system service	false	true	false
System tick timer	false	true	true

\* User modified value

## 5. System Views

### 5.1. Category view

#### 5.1.1. Current

#### Middleware

#### System Core

#### Analog

#### Timers

#### Connectivity

#### Multimedia

#### Computing

DMA

SDADC1



I2C1



GPIO



NVIC



RCC



SYS



## 6. Docs & Resources

Type	Link
BSDL files	<a href="https://www.st.com/resource/en/bsdl_model/stm32f3_bsdل.zip">https://www.st.com/resource/en/bsdl_model/stm32f3_bsdل.zip</a>
System View Description	<a href="https://www.st.com/resource/en/svd/stm32f3-svd.zip">https://www.st.com/resource/en/svd/stm32f3-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>
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Flyers	<a href="https://www.st.com/resource/en/flyer/fldpstpfcl1120.pdf">https://www.st.com/resource/en/flyer/fldpstpfcl1120.pdf</a>
Product Certifications	<a href="https://www.st.com/resource/en/certification_document/stm32_authentication_can.pdf">https://www.st.com/resource/en/certification_document/stm32_authentication_can.pdf</a>
Security Bulletin	<a href="https://www.st.com/resource/en/technical_note/tn1489-security-bulletin-tn1489stpsirt-physical-attacks-on-stm32-and-stm32cube-firmware-stmicroelectronics.pdf">https://www.st.com/resource/en/technical_note/tn1489-security-bulletin-tn1489stpsirt-physical-attacks-on-stm32-and-stm32cube-firmware-stmicroelectronics.pdf</a>
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Application Notes	<a href="https://www.st.com/resource/en/application_note/an2606-stm32-microcontroller-system-memory-boot-mode-stmicroelectronics.pdf">https://www.st.com/resource/en/application_note/an2606-stm32-microcontroller-system-memory-boot-mode-stmicroelectronics.pdf</a>
Application Notes	<a href="https://www.st.com/resource/en/application_note/an2945-stm8s-and-stm32-mcus-a-consistent-832bit-product-line-for-painless-migration-">https://www.st.com/resource/en/application_note/an2945-stm8s-and-stm32-mcus-a-consistent-832bit-product-line-for-painless-migration-</a>

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