
STM32
CubeMX

1. Description

1.1. Project

Project Name	EXTI_1
Board Name	custom
Generated with:	STM32CubeMX 6.6.1
Date	09/19/2022

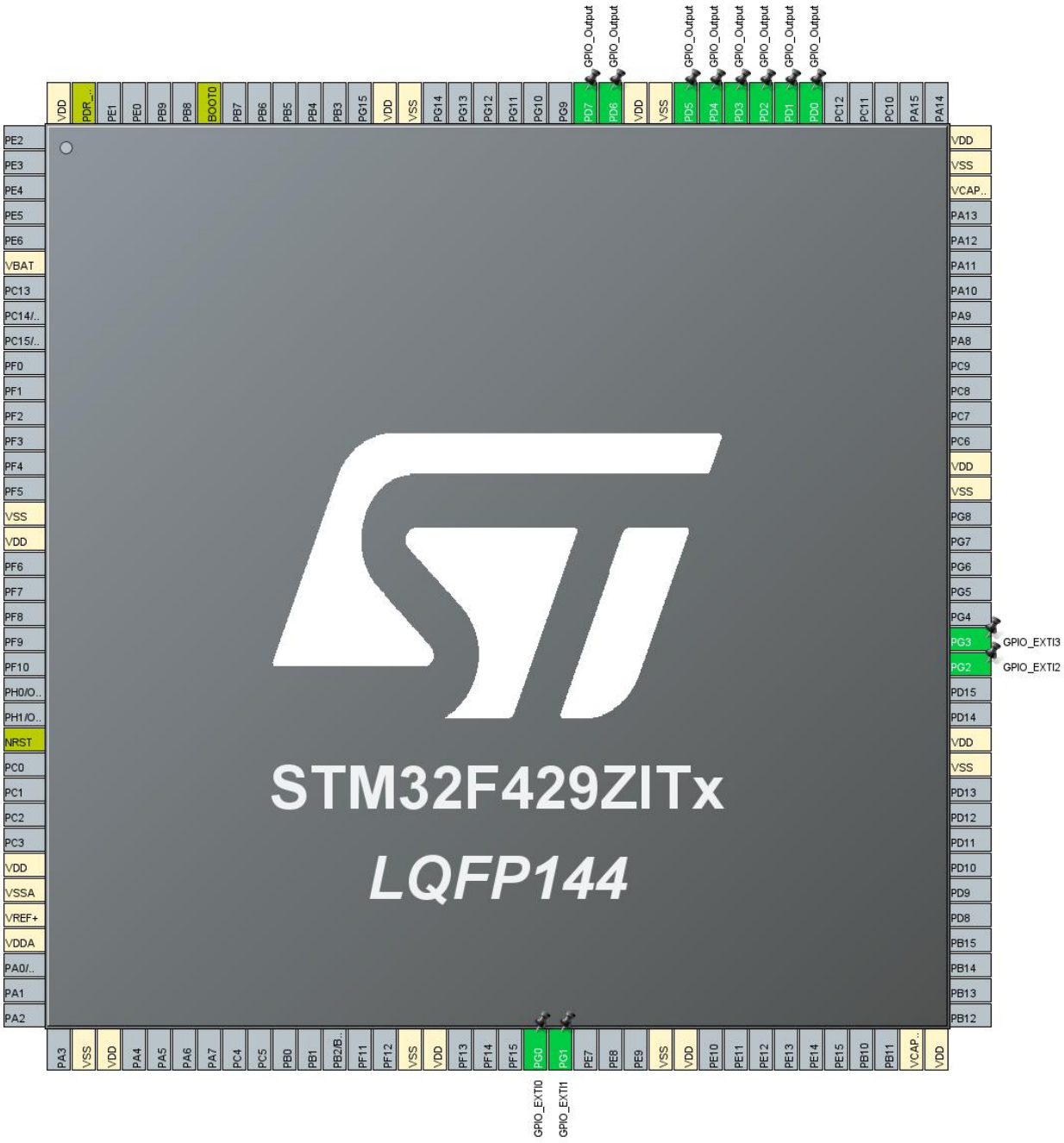
1.2. MCU

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

1.3. Core(s) information

Core(s)	Arm Cortex-M4

2. Pinout Configuration



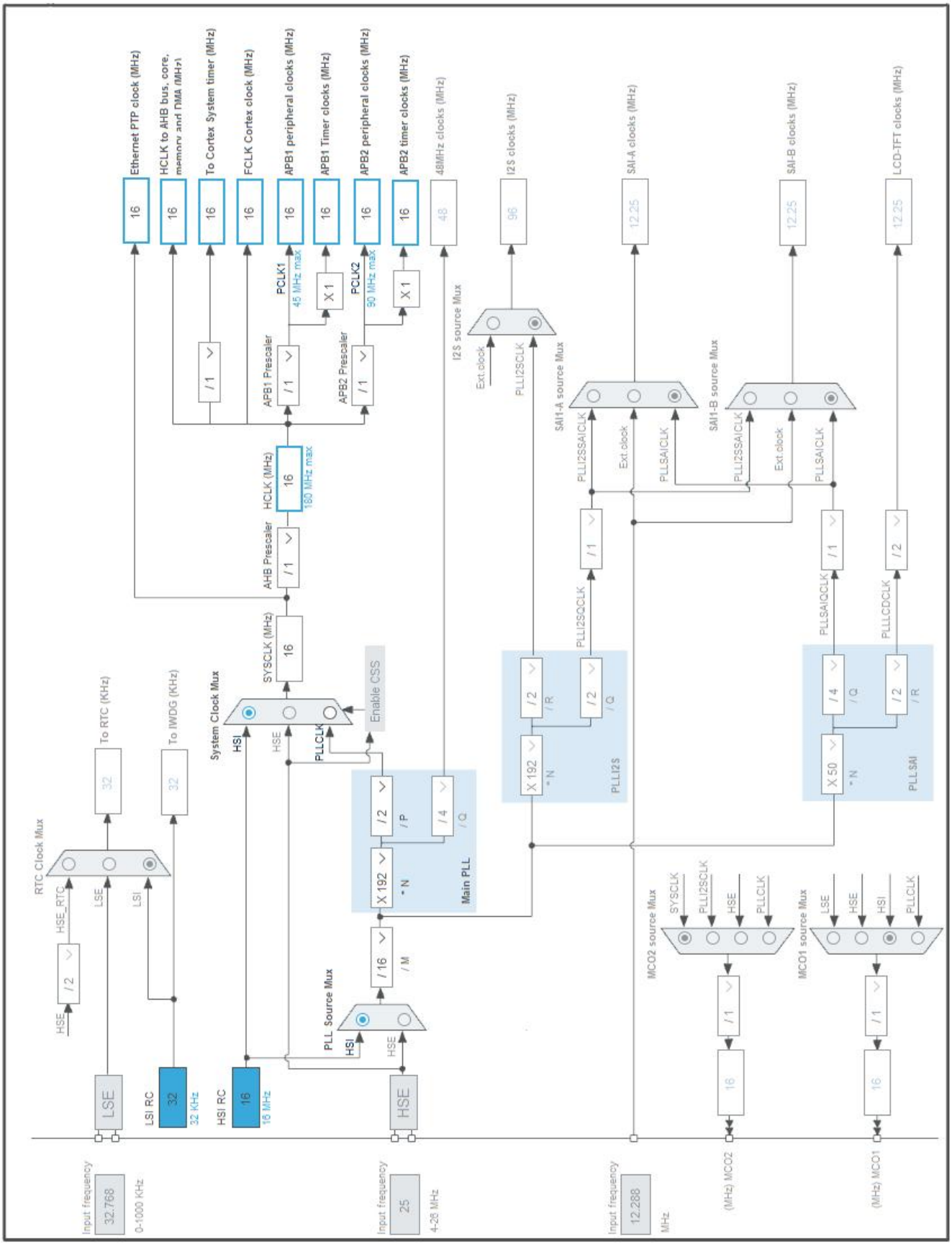
3. Pins Configuration

Pin Number LQFP144	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
6	VBAT	Power		
16	VSS	Power		
17	VDD	Power		
25	NRST	Reset		
30	VDD	Power		
31	VSSA	Power		
32	VREF+	Power		
33	VDDA	Power		
38	VSS	Power		
39	VDD	Power		
51	VSS	Power		
52	VDD	Power		
56	PG0	I/O	GPIO_EXTI0	
57	PG1	I/O	GPIO_EXTI1	
61	VSS	Power		
62	VDD	Power		
71	VCAP_1	Power		
72	VDD	Power		
83	VSS	Power		
84	VDD	Power		
87	PG2	I/O	GPIO_EXTI2	
88	PG3	I/O	GPIO_EXTI3	
94	VSS	Power		
95	VDD	Power		
106	VCAP_2	Power		
107	VSS	Power		
108	VDD	Power		
114	PD0 *	I/O	GPIO_Output	
115	PD1 *	I/O	GPIO_Output	
116	PD2 *	I/O	GPIO_Output	
117	PD3 *	I/O	GPIO_Output	
118	PD4 *	I/O	GPIO_Output	
119	PD5 *	I/O	GPIO_Output	
120	VSS	Power		
121	VDD	Power		
122	PD6 *	I/O	GPIO_Output	

Pin Number LQFP144	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
123	PD7 *	I/O	GPIO_Output	
130	VSS	Power		
131	VDD	Power		
138	BOOT0	Boot		
143	PDR_ON	Reset		
144	VDD	Power		

* The pin is affected with an I/O function

4. Clock Tree Configuration



5. Software Project

5.1. Project Settings

Name	Value
Project Name	EXTI_1
Project Folder	C:\Users\Jang\STM32CubeIDE\workspace_1.10.1\EXTI_1
Toolchain / IDE	STM32CubeIDE
Firmware Package Name and Version	STM32Cube FW_F4 V1.27.1
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	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

5.3. Advanced Settings - Generated Function Calls

Rank	Function Name	Peripheral Instance Name
1	SystemClock_Config	RCC
2	MX_GPIO_Init	GPIO

6. Power Consumption Calculator report

6.1. Microcontroller Selection

Series	STM32F4
Line	STM32F429/439
MCU	STM32F429ZITx
Datasheet	DS9405_Rev9

6.2. Parameter Selection

Temperature	25
Vdd	3.3

6.3. 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

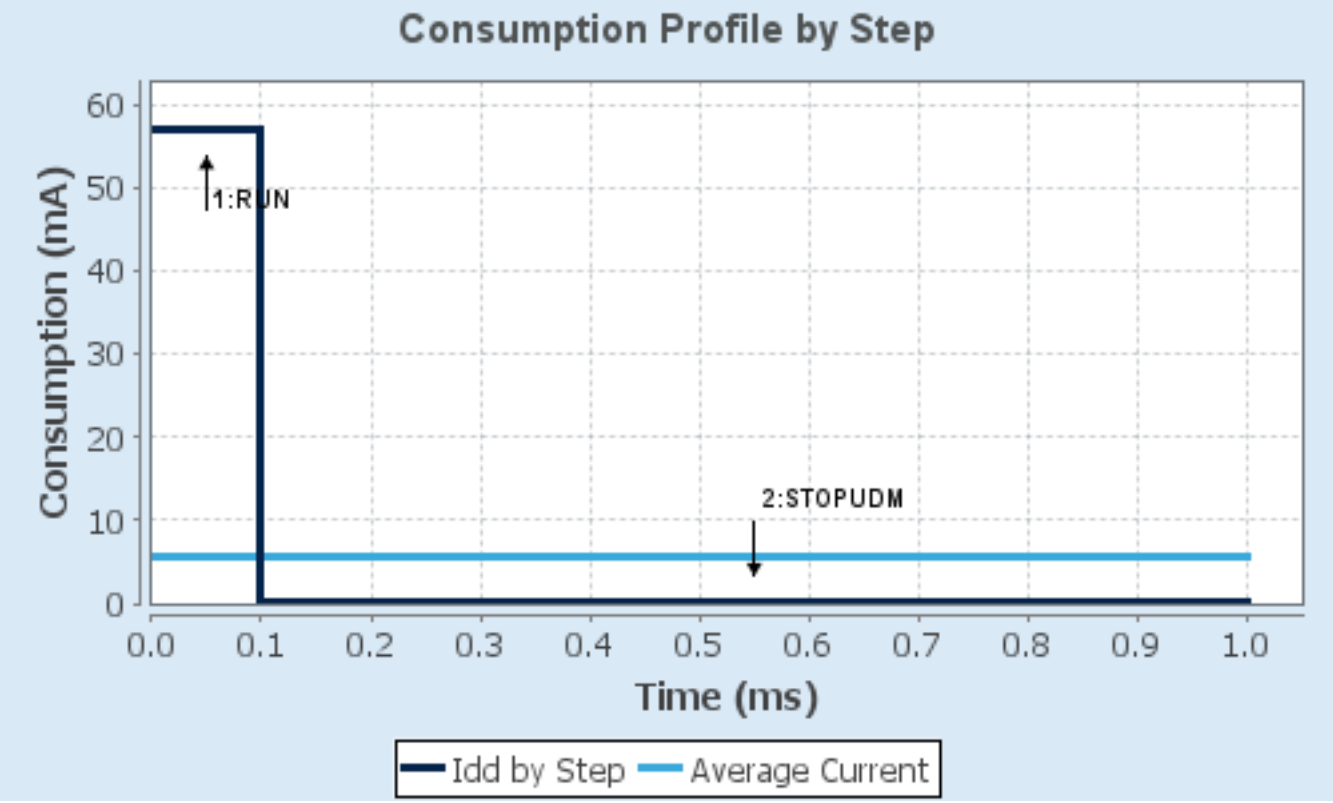
6.4. Sequence

Step	Step1	Step2
Mode	RUN	STOP_UDM (Under Drive)
Vdd	3.3	3.3
Voltage Source	Battery	Battery
Range	Scale1-High	No Scale
Fetch Type	FLASH	n/a
CPU Frequency	180 MHz	0 Hz
Clock Configuration	HSE PLL	Regulator_LP Flash-PwrDwn
Clock Source Frequency	4 MHz	0 Hz
Peripherals		
Additional Cons.	0 mA	0 mA
Average Current	57 mA	100 µA
Duration	0.1 ms	0.9 ms
DMIPS	225.0	0.0
Ta Max	97.48	104.99
Category	In DS Table	In DS Table

6.5. Results

Sequence Time	1 ms	Average Current	5.79 mA
Battery Life	24 days, 10 hours	Average DMIPS	225.0 DMIPS

6.6. Chart


Consumption Profile by Step
Consumption (mA)
60
50
40
30
20
10
0
1:RUN
2:STOPUDM
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Time (ms)
Idd by Step
Average Current

7. Peripherals and Middlewares Configuration

7.1. RCC

7.1.1. Parameter Settings:

System Parameters:

VDD voltage (V)	3.3
Instruction Cache	Enabled
Prefetch Buffer	Enabled
Data Cache	Enabled
Flash Latency(WS)	0 WS (1 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 Regulator Voltage Scale	Power Regulator Voltage Scale 3
Power Over Drive	Disabled

*** User modified value**

8. System Configuration

8.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
GPIO	PG0	GPIO_EXTI0	**External Interrupt Mode with Falling edge trigger detection**	No pull-up and no pull-down	n/a	
	PG1	GPIO_EXTI1	**External Interrupt Mode with Falling edge trigger detection**	No pull-up and no pull-down	n/a	
	PG2	GPIO_EXTI2	**External Interrupt Mode with Falling edge trigger detection**	No pull-up and no pull-down	n/a	
	PG3	GPIO_EXTI3	**External Interrupt Mode with Falling edge trigger detection**	No pull-up and no pull-down	n/a	
	PD0	GPIO_Output	Output Push Pull	**Pull-up ***	**High ***	
	PD1	GPIO_Output	Output Push Pull	**Pull-up ***	**High ***	
	PD2	GPIO_Output	Output Push Pull	**Pull-up ***	**High ***	
	PD3	GPIO_Output	Output Push Pull	**Pull-up ***	**High ***	
	PD4	GPIO_Output	Output Push Pull	**Pull-up ***	**High ***	
	PD5	GPIO_Output	Output Push Pull	**Pull-up ***	**High ***	
	PD6	GPIO_Output	Output Push Pull	**Pull-up ***	**High ***	
	PD7	GPIO_Output	Output Push Pull	**Pull-up ***	**High ***	

8.2. DMA configuration

nothing configured in DMA service

8.3. NVIC configuration

8.3.1. 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	0	0
System tick timer	true	15	0
EXTI line0 interrupt	true	0	0
EXTI line1 interrupt	true	0	0
EXTI line2 interrupt	true	0	0
EXTI line3 interrupt	true	0	0
FPU global interrupt	true	0	0
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		

8.3.2. NVIC Code generation

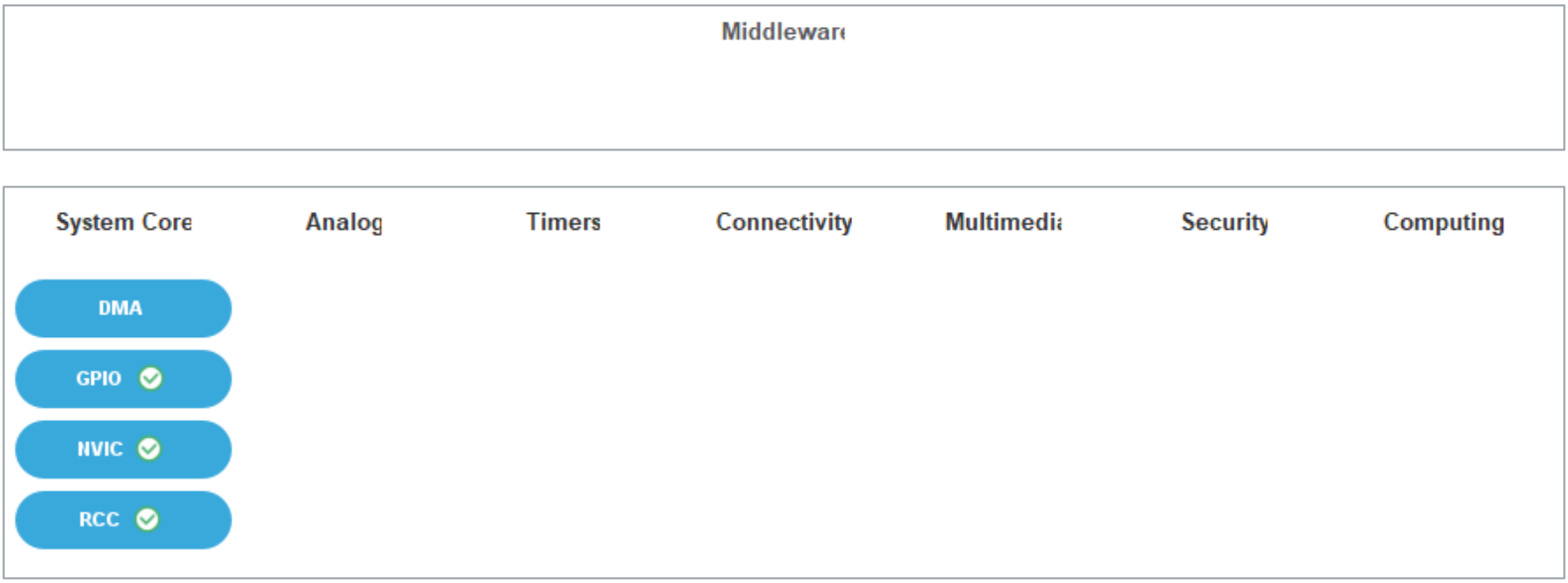
Enabled interrupt Table	Select for init sequence ordering	Generate IRQ handler	Call HAL handler
Non maskable interrupt	false	true	false
Hard fault interrupt	false	true	false
Memory management fault	false	true	false
Pre-fetch fault, memory access fault	false	true	false
Undefined instruction or illegal state	false	true	false
System service call via SWI instruction	false	true	false
Debug monitor	false	true	false
Pendable request for system service	false	true	false
System tick timer	false	true	true
EXTI line0 interrupt	false	true	true
EXTI line1 interrupt	false	true	true
EXTI line2 interrupt	false	true	true
EXTI line3 interrupt	false	true	true
FPU global interrupt	false	true	false

*** User modified value**

9. System Views

9.1. Category view

9.1.1. Current



10. Docs & Resources

Type	Link