
STM32
CubeMX

1. Description

1.1. Project

Project Name	stm32f105
Board Name	custom
Generated with:	STM32CubeMX 6.13.0
Date	01/13/2025

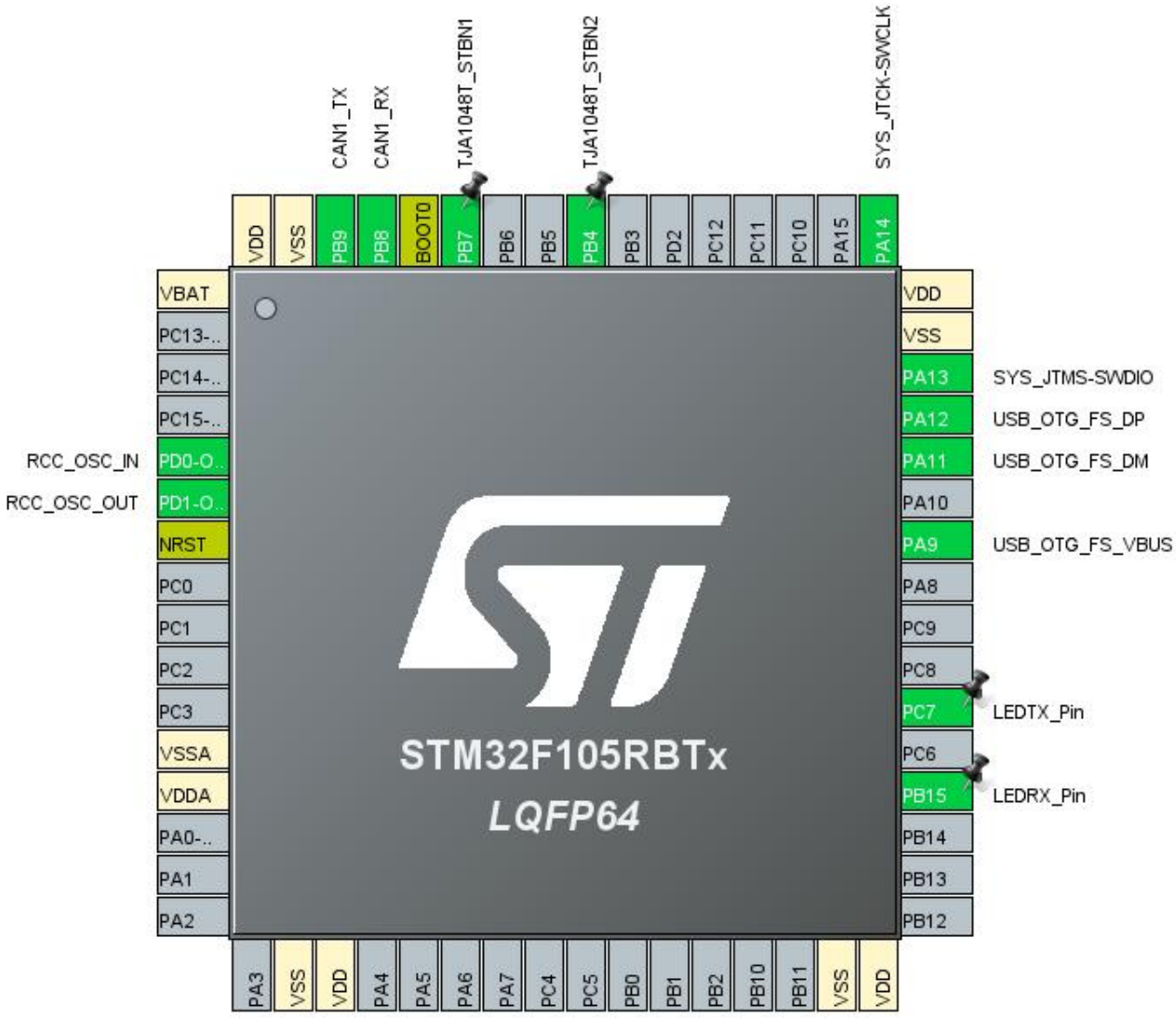
1.2. MCU

MCU Series	STM32F1
MCU Line	STM32F105/107
MCU name	STM32F105RBTx
MCU Package	LQFP64
MCU Pin number	64

1.3. Core(s) information

Core(s)	Arm Cortex-M3

2. Pinout Configuration

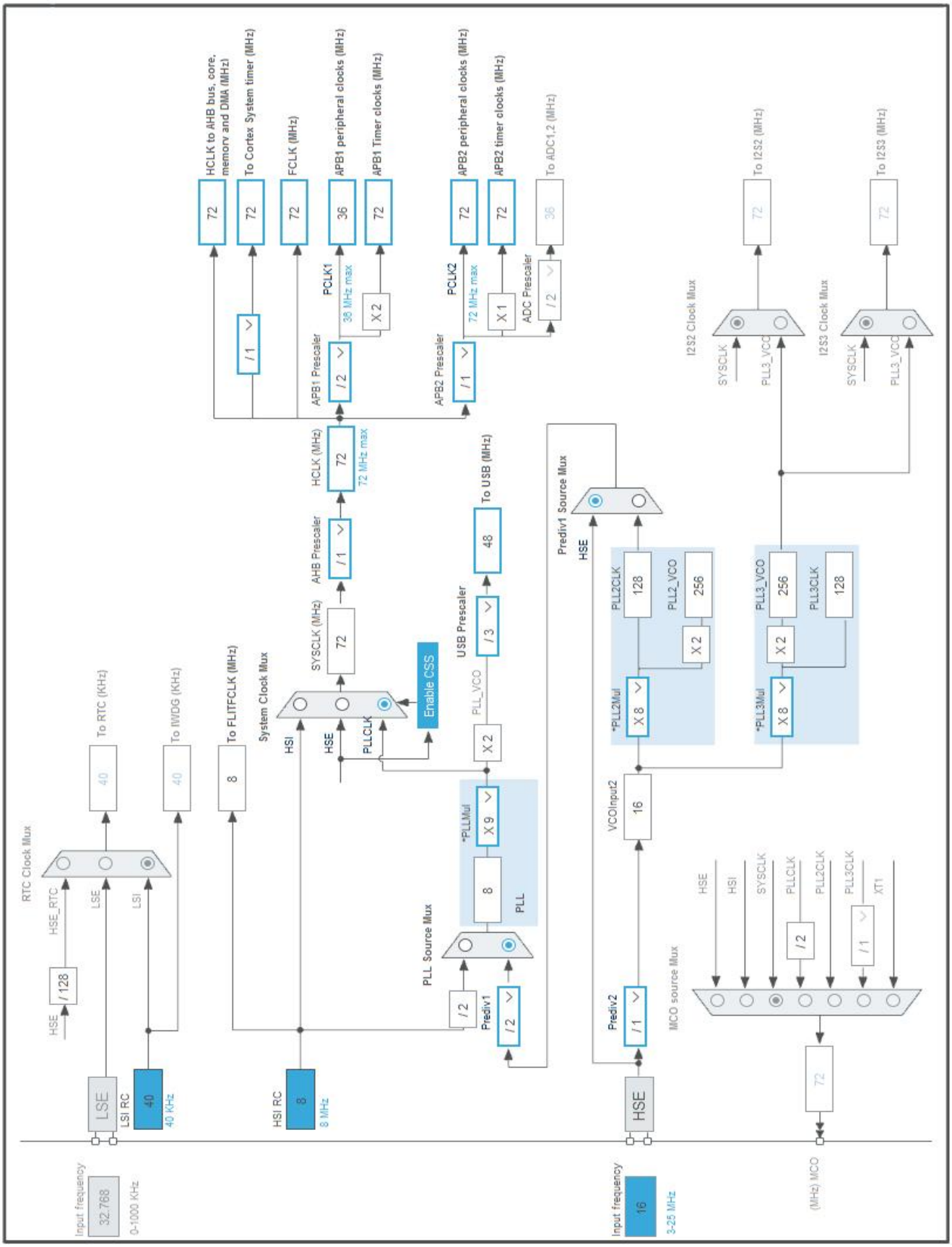


3. Pins Configuration

Pin Number LQFP64	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VBAT	Power		
5	PD0-OSC_IN	I/O	RCC_OSC_IN	
6	PD1-OSC_OUT	I/O	RCC_OSC_OUT	
7	NRST	Reset		
12	VSSA	Power		
13	VDDA	Power		
18	VSS	Power		
19	VDD	Power		
31	VSS	Power		
32	VDD	Power		
36	PB15 *	I/O	GPIO_Output	LEDRX_Pin
38	PC7 *	I/O	GPIO_Output	LEDTX_Pin
42	PA9	I/O	USB_OTG_FS_VBUS	
44	PA11	I/O	USB_OTG_FS_DM	
45	PA12	I/O	USB_OTG_FS_DP	
46	PA13	I/O	SYS_JTMS-SWDIO	
47	VSS	Power		
48	VDD	Power		
49	PA14	I/O	SYS_JTCK-SWCLK	
56	PB4 *	I/O	GPIO_Output	TJA1048T_STBN2
59	PB7 *	I/O	GPIO_Output	TJA1048T_STBN1
60	BOOT0	Boot		
61	PB8	I/O	CAN1_RX	
62	PB9	I/O	CAN1_TX	
63	VSS	Power		
64	VDD	Power		

* The pin is affected with an I/O function

4. Clock Tree Configuration



1. Power Consumption Calculator report

1.1. Microcontroller Selection

Series	STM32F1
Line	STM32F105/107
MCU	STM32F105RBTx
Datasheet	DS6014_Rev10

1.2. Parameter Selection

Temperature	25
Vdd	3.3

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

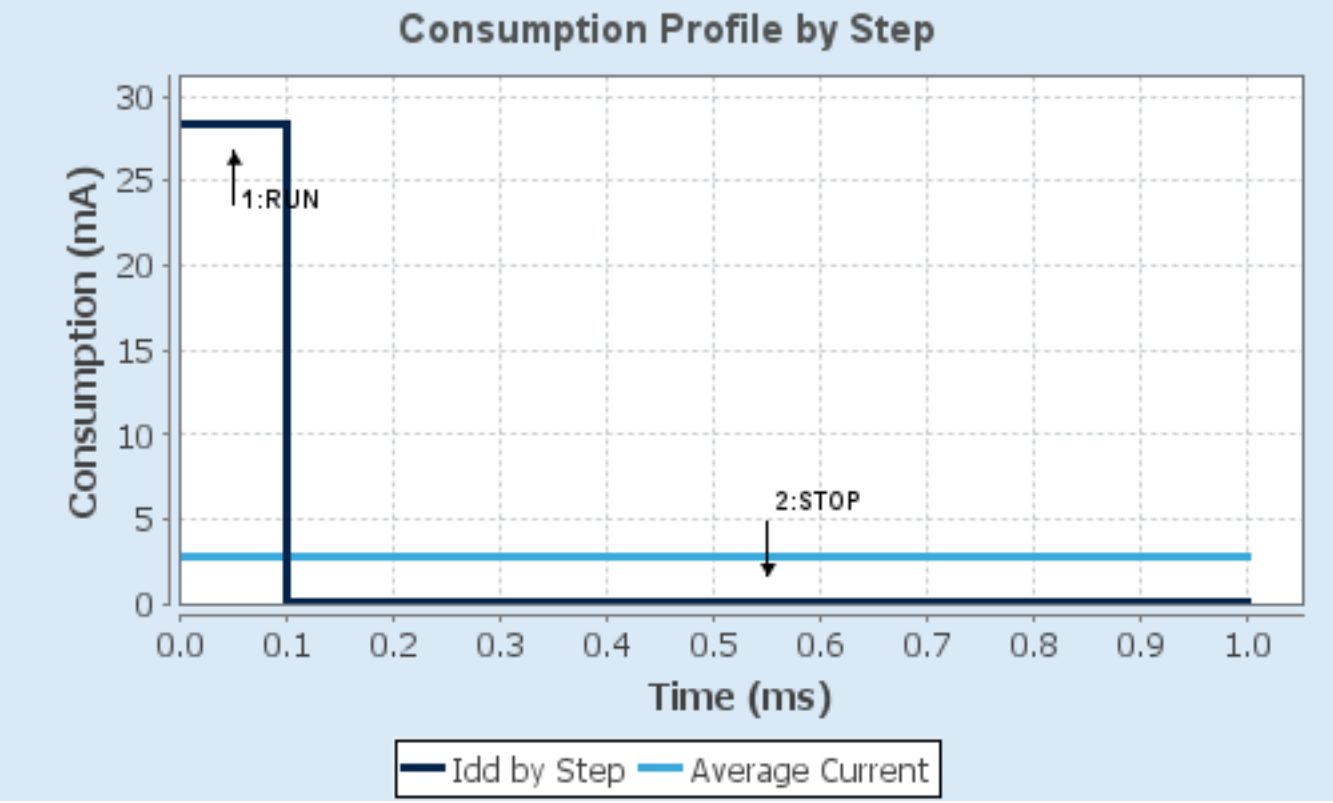
1.4. Sequence

Step	Step1	Step2
Mode	RUN	STOP
Vdd	3.3	3.3
Voltage Source	Battery	Battery
Range	No Scale	No Scale
Fetch Type	FLASH	n/a
CPU Frequency	72 MHz	0 Hz
Clock Configuration	HSE PLL	Regulator_LP
Clock Source Frequency	8 MHz	0 Hz
Peripherals		
Additional Cons.	0 mA	0 mA
Average Current	28.3 mA	26 µA
Duration	0.1 ms	0.9 ms
DMIPS	90.0	0.0
Ta Max	100.8	105
Category	In DS Table	In DS Table

1.5. Results

Sequence Time	1 ms	Average Current	2.85 mA
Battery Life	1 month, 19 days, 4 hours	Average DMIPS	61.0 DMIPS

1.6. Chart


Consumption Profile by Step
Consumption (mA)
30
25
20
15
10
5
0
1:RUN
2:STOP
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

2. Software Project

2.1. Project Settings

Name	Value
Project Name	stm32f105
Project Folder	Z:\upload\USB-CAN-Starline-2CAN\STM32CubeMX
Toolchain / IDE	EWARM V8.32
Firmware Package Name and Version	STM32Cube FW_F1 V1.8.6
Application Structure	Advanced
Generate Under Root	No
Do not generate the main()	No
Minimum Heap Size	0x400
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	Yes
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	Yes

2.3. Advanced Settings - Generated Function Calls

Rank	Function Name	Peripheral Instance Name
1	SystemClock_Config	RCC
2	MX_GPIO_Init	GPIO
3	MX_CAN1_Init	CAN1
4	MX_USB_OTG_FS_PCD_Init	USB_OTG_FS

3. Peripherals and Middlewares Configuration

3.1. CAN1

mode: Activated

3.1.1. Parameter Settings:

Bit Timings Parameters:

Prescaler (for Time Quantum)	**4 ***
Time Quantum	**111.11111111111111 ***
Time Quanta in Bit Segment 1	**15 Times ***
Time Quanta in Bit Segment 2	**2 Times ***
Time for one Bit	**2000 ***
Baud Rate	**500000 ***
ReSynchronization Jump Width	1 Time

Basic Parameters:

Time Triggered Communication Mode	**Enable ***
Automatic Bus-Off Management	**Enable ***
Automatic Wake-Up Mode	Disable
Automatic Retransmission	Disable
Receive Fifo Locked Mode	Disable
Transmit Fifo Priority	**Enable ***

Advanced Parameters:

Test Mode	Normal

3.2. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

3.2.1. Parameter Settings:

System Parameters:

VDD voltage (V)	3.3
Instruction Cache	Enabled
Prefetch Buffer	Enabled
Data Cache	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

3.3. SYS

Debug: Serial Wire

Timebase Source: SysTick

3.4. USB_OTG_FS

Mode: Device_Only

mode: Activate_VBUS

3.4.1. Parameter Settings:

Speed	Device Full Speed 12MBit/s
Low power	Disabled
VBUS sensing	Enabled
Signal start of frame	Disabled

*** User modified value**

4. System Configuration

4.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
CAN1	PB8	CAN1_RX	Input mode	No pull-up and no pull-down	n/a	
	PB9	CAN1_TX	Alternate Function Push Pull	n/a	**High ***	
RCC	PD0-OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	
	PD1-OSC_OUT	RCC_OSC_OUT	n/a	n/a	n/a	
SYS	PA13	SYS_JTMS-SWDIO	n/a	n/a	n/a	
	PA14	SYS_JTCK-SWCLK	n/a	n/a	n/a	
USB_OTG_FS	PA9	USB_OTG_FS_VBUS	Input mode	No pull-up and no pull-down	n/a	
	PA11	USB_OTG_FS_DM	n/a	n/a	n/a	
	PA12	USB_OTG_FS_DP	n/a	n/a	n/a	
GPIO	PB15	GPIO_Output	**Output Open Drain ***	No pull-up and no pull-down	**High ***	LEDRX_Pin
	PC7	GPIO_Output	**Output Open Drain ***	No pull-up and no pull-down	**High ***	LEDTX_Pin
	PB4	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	TJA1048T_STBN2
	PB7	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	TJA1048T_STBN1

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
CAN1 RX0 interrupt	true	0	0
CAN1 SCE interrupt	true	0	0
USB OTG FS global interrupt	true	0	0
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
CAN1 TX interrupt	unused		
CAN1 RX1 interrupt	unused		

4.3.2. NVIC Code generation

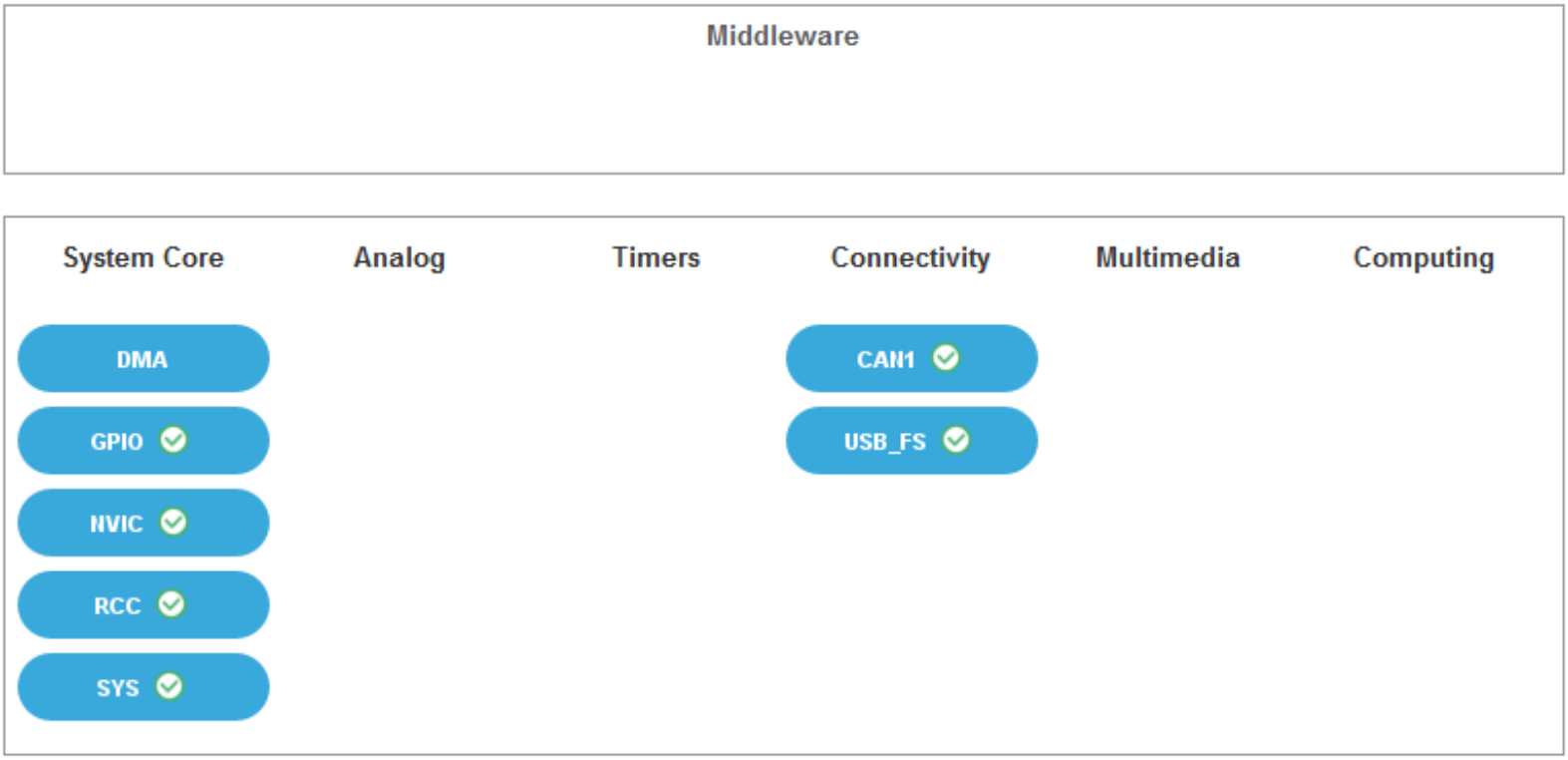
Enabled interrupt Table	Select for init sequence ordering	Generate IRQ handler	Call HAL handler
Non maskable interrupt	false	true	false
Hard fault interrupt	false	true	false
Memory management fault	false	true	false
Prefetch fault, memory access fault	false	true	false
Undefined instruction or illegal 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
CAN1 RX0 interrupt	false	true	true
CAN1 SCE interrupt	false	true	true
USB OTG FS global interrupt	false	true	true

*** User modified value**

5. System Views

5.1. Category view

5.1.1. Current



6. Docs & Resources

Type	Link