



## 1. Description

### 1.1. Project

Project Name	car
Board Name	custom
Generated with:	STM32CubeMX 6.8.1
Date	05/14/2025

### 1.2. MCU

MCU Series	STM32U5
MCU Line	STM32U575/585
MCU name	STM32U575RITx
MCU Package	LQFP64
MCU Pin number	64

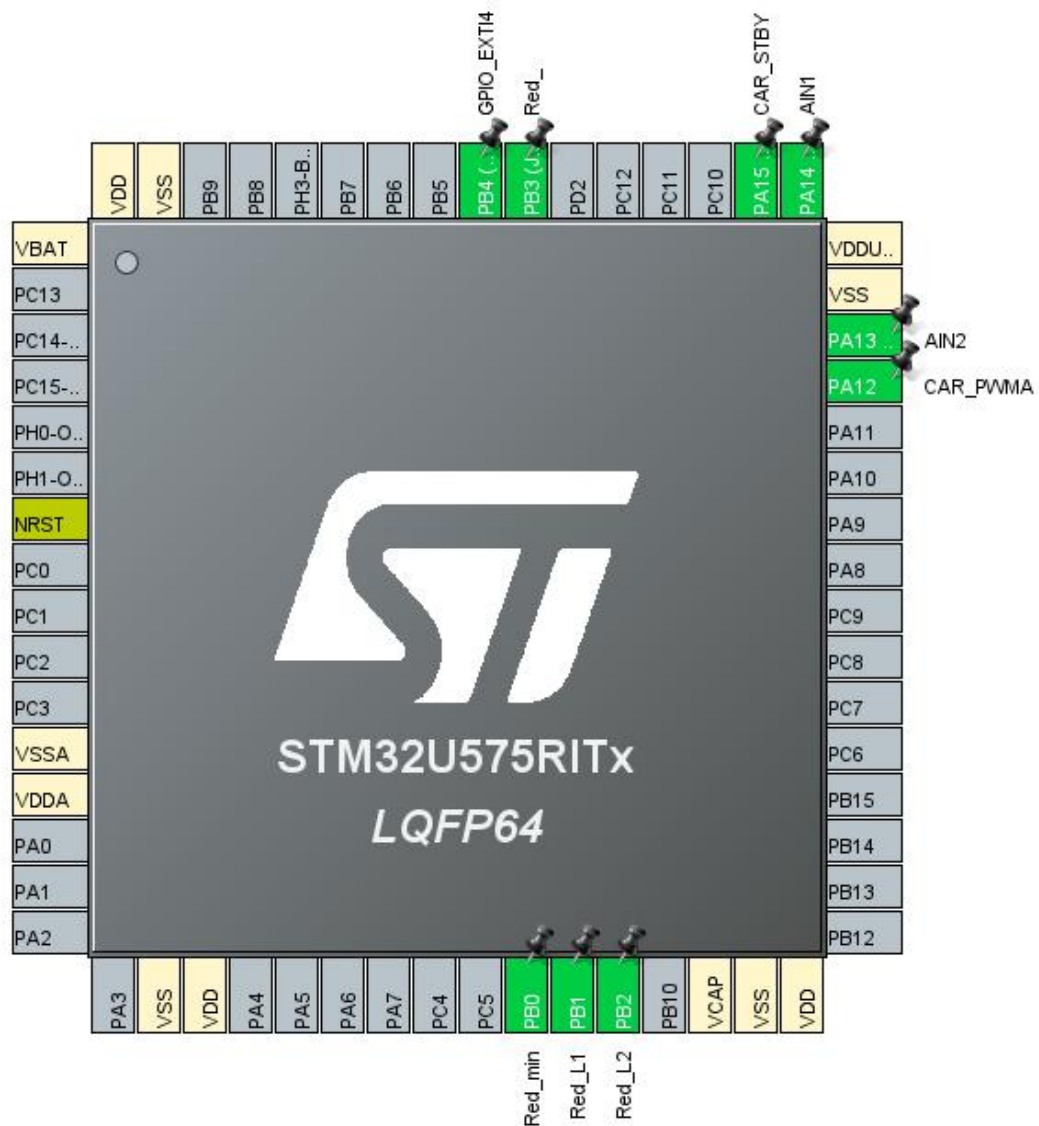
### 1.3. Core(s) information

Core(s)	ARM Cortex-M33
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### 1.4. Caution

The report was generated although the configuration was in a modified state. It may be not accurate

## 2. Pinout Configuration

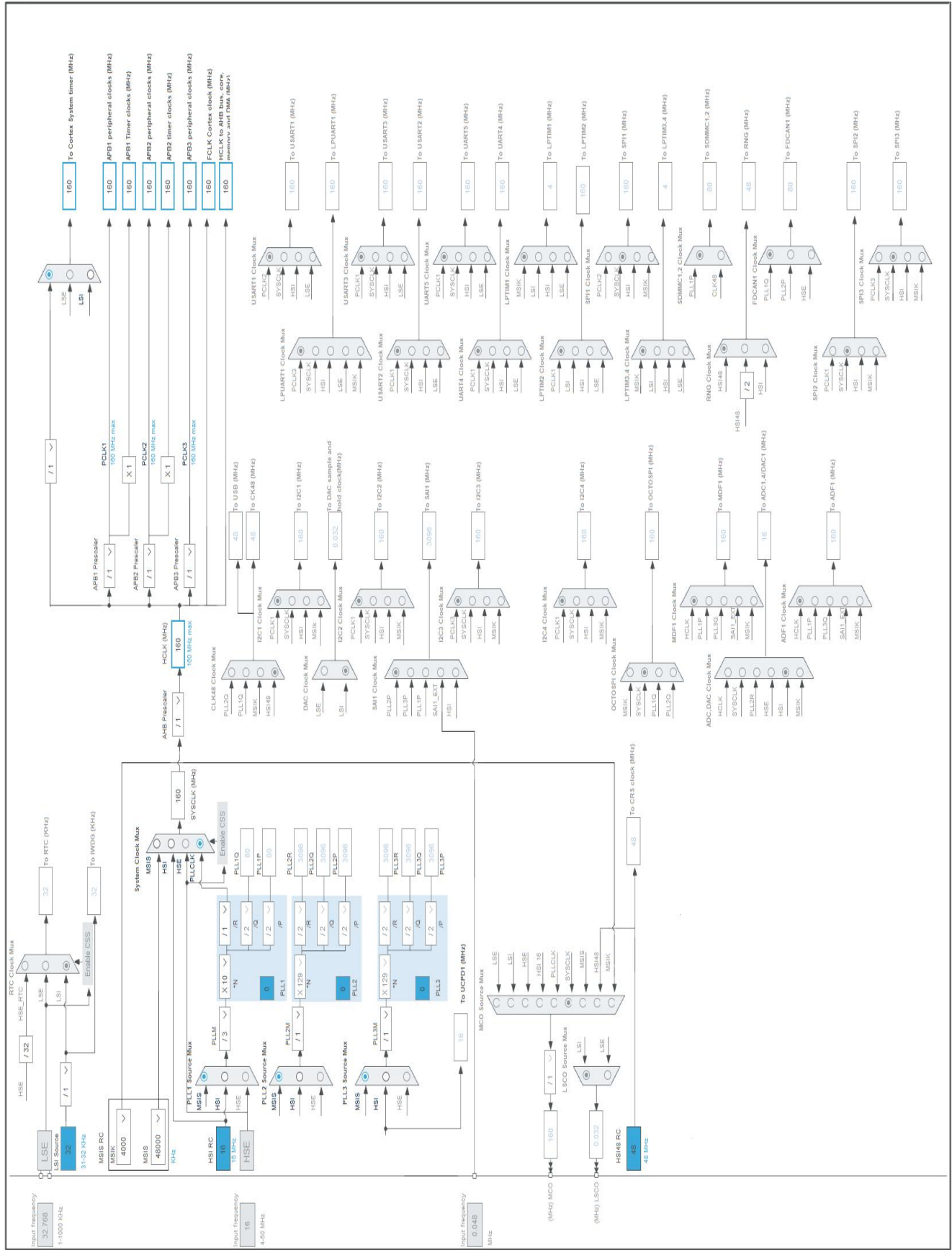


### 3. Pins Configuration

Pin Number LQFP64	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VBAT	Power		
7	NRST	Reset		
12	VSSA	Power		
13	VDDA	Power		
18	VSS	Power		
19	VDD	Power		
26	PB0	I/O	GPIO_EXTI0	Red_min
27	PB1	I/O	GPIO_EXTI1	Red_L1
28	PB2	I/O	GPIO_EXTI2	Red_L2
30	VCAP	Power		
31	VSS	Power		
32	VDD	Power		
45	PA12 *	I/O	GPIO_Output	CAR_PWMA
46	PA13 (JTMS/SWDIO) *	I/O	GPIO_Output	AIN2
47	VSS	Power		
48	VDDUSB	Power		
49	PA14 (JTCK/SWCLK) *	I/O	GPIO_Output	AIN1
50	PA15 (JTDI) *	I/O	GPIO_Output	CAR_STBY
55	PB3 (JTDO/TRACESWO)	I/O	GPIO_EXTI3	Red_
56	PB4 (NJTRST)	I/O	GPIO_EXTI4	
63	VSS	Power		
64	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	car
Project Folder	E:\STM32U575_Car\car
Toolchain / IDE	MDK-ARM V5.32
Firmware Package Name and Version	STM32Cube FW_U5 V1.2.0
Application Structure	Advanced
Generate Under Root	No
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	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	STM32U5
Line	STM32U575/585
MCU	STM32U575RITx
Datasheet	DS13737_Rev1

### 6.2. Parameter Selection

Temperature	25
Vdd	3.0

### 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

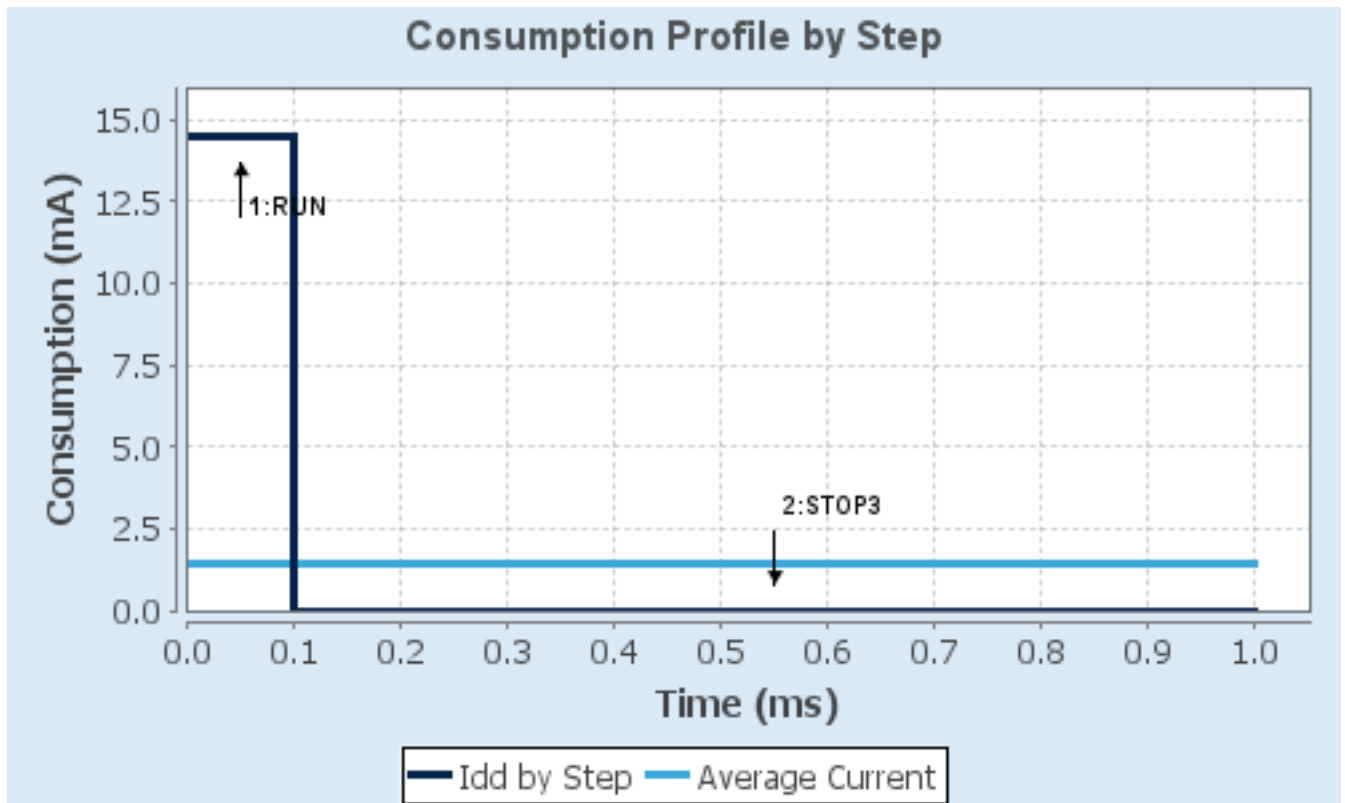
<b>Step</b>	Step1	Step2
<b>Mode</b>	RUN	STOP3
<b>Vdd</b>	3.0	3.0
<b>Voltage Source</b>	Battery	Battery
<b>Range</b>	Range1-High	NoScale/SMPS
<b>Fetch Type</b>	FLASH_PwrDwnBank2/ART/ Cache2Ways	FLASH
<b>CPU Frequency</b>	160 MHz	0 Hz
<b>Clock Configuration</b>	HSE BYP PLL ALL RAM RETENTION	ALL_CLOCKS_OFF
<b>Clock Source Frequency</b>	16 MHz	0 Hz
<b>Peripherals</b>		
<b>Additional Cons.</b>	0 mA	0 mA
<b>Average Current</b>	14.5 mA	1.8 $\mu$ A
<b>Duration</b>	0.1 ms	0.9 ms
<b>DMIPS</b>	200.0	0.0
<b>Ta Max</b>	103.26	105
<b>Category</b>	In DS Table	In DS Table

#### 6.5. Results

Sequence Time	1 ms	Average Current	1.45 mA
Battery Life	3 months, 6 days, 2 hours	Average DMIPS	20.0 DMIPS

#### 6.6. Chart





## 7. Peripherals and Middlewares Configuration

### 7.1. LPBAM

**mode: LPBAM Scenario uses resources from Smart Run Domain only**

**mode: LPBAM Scenario is hosted by LPDMA1**

### 7.2. LPBAMQUEUE

**mode: QUEUE MODE**

#### 7.2.1. Parameter Settings:

##### **DMA Channel Configuration:**

Priority Low

##### **DMA Channel Interrupt Configuration:**

Data Transfer Error Interrupt	Disable
Update Link Error Interrupt	Disable
User Setting Error Interrupt	Disable
Transfer Complete Interrupt	Disable
Trigger Overrun Interrupt	Disable

### 7.3. PWR

**mode: Dead Battery Signals disabled**

**mode: Power saving mode**

**mode: Privilege attributes**

#### 7.3.1. Power Saving:

##### **SRAM power down in Run mode:**

SRAM1 power down in Run mode	Disable
SRAM2 power down in Run mode	Disable
SRAM3 power down in Run mode	Disable
SRAM4 power down in Run mode	Disable

##### **SRAM power down in Stop mode:**

SRAM1 Page1 power down in Stop (0, 1, 2, 3) mode	Disable
SRAM1 Page2 power down in Stop (0, 1, 2, 3) mode	Disable
SRAM1 Page3 power down in Stop (0, 1, 2, 3) mode	Disable
SRAM2 Page1 power down in Stop (0, 1, 2) mode	Disable
SRAM2 Page2 power down in Stop (0, 1, 2) mode	Disable
SRAM3 Page1 power down in Stop (0, 1, 2, 3) mode	Disable
SRAM3 Page2 power down in Stop (0, 1, 2, 3) mode	Disable

SRAM3 Page3 power down in Stop (0, 1, 2, 3) mode	Disable
SRAM3 Page4 power down in Stop (0, 1, 2, 3) mode	Disable
SRAM3 Page5 power down in Stop (0, 1, 2, 3) mode	Disable
SRAM3 Page6 power down in Stop (0, 1, 2, 3) mode	Disable
SRAM3 Page7 power down in Stop (0, 1, 2, 3) mode	Disable
SRAM3 Page8 power down in Stop (0, 1, 2, 3) mode	Disable
SRAM4 power down in Stop (0, 1, 2, 3) mode	Disable
ICACHE power down in Stop (0, 1, 2, 3) mode	Disable
DCACHE1 power down in Stop (0, 1, 2, 3) mode	Disable
DMA2D RAM power down in Stop (0, 1, 2, 3) mode	Disable
PKA32 RAM power down in Stop (0, 1, 2, 3) mode	Disable
PERIPH RAM power down in Stop (0, 1, 2, 3) mode	Disable

**SRAM fast wakeup:**

SRAM4 fast wakeup from Stop (0, 1, 2, 3) modes	Disable
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**7.3.2. PWR Privilege :**

**Privilege PWR:**

PWR Privilege	Disable
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**7.4. SYS**

**Timebase Source: SysTick**

**\* 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	PB0	GPIO_EXTI0	External Interrupt Mode with Rising edge trigger detection	No pull-up and no pull-down	n/a	Red_min
	PB1	GPIO_EXTI1	External Interrupt Mode with Rising edge trigger detection	No pull-up and no pull-down	n/a	Red_L1
	PB2	GPIO_EXTI2	External Interrupt Mode with Rising edge trigger detection	No pull-up and no pull-down	n/a	Red_L2
	PA12	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	CAR_PWMA
	PA13 (JTMS/SWDIO)	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	AIN2
	PA14 (JTCK/SWCLK)	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	AIN1
	PA15 (JTDI)	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	CAR_STBY
	PB3 (JTDO/TRACESWO)	GPIO_EXTI3	External Interrupt Mode with Rising edge trigger detection	No pull-up and no pull-down	n/a	Red_
	PB4 (NJTRST)	GPIO_EXTI4	External Interrupt Mode with Rising edge trigger detection	No pull-up and no pull-down	n/a	

### 8.2. GPDMA1

### 8.3. LINKEDLIST

### 8.4. LPDMA1

## 8.5. NVIC configuration

### 8.5.1. 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
EXTI Line0 interrupt	true	0	0
EXTI Line1 interrupt	true	0	0
EXTI Line2 interrupt	true	0	0
EXTI Line3 interrupt	true	0	0
EXTI Line4 interrupt	true	0	0
FPU global interrupt	true	0	0
Flash non-secure global interrupt	unused		
RCC non-secure global interrupt	unused		

### 8.5.2. 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
EXTI Line0 interrupt	false	true	true
EXTI Line1 interrupt	false	true	true
EXTI Line2 interrupt	false	true	true
EXTI Line3 interrupt	false	true	true
EXTI Line4 interrupt	false	true	true
FPU global interrupt	false	true	false

**\* User modified value**

## 9. System Views

### 9.1. Category view

#### 9.1.1. Current

Middleware										
System Core	Analog	Timers	Connectivity	Multimedia	Security	Computing	Trace and Debug	Power and Thermal	Utilities	Other
CORTEX_M33 ✓								PWR ✓	LINKEDLIST	
GPDMA1										
GPIO ✓										
LPDMA1										
NVIC ✓										
RCC ✓										
SYS ✓										

## 10. Docs & Resources

Type	Link
BSDL files	<a href="https://www.st.com/resource/en/bsdl_model/stm32u5_bsd.zip">https://www.st.com/resource/en/bsdl_model/stm32u5_bsd.zip</a>
IBIS models	<a href="https://www.st.com/resource/en/ibis_model/stm32u5-ibis.zip">https://www.st.com/resource/en/ibis_model/stm32u5-ibis.zip</a>
System View Description	<a href="https://www.st.com/resource/en/svd/stm32u5_svd.zip">https://www.st.com/resource/en/svd/stm32u5_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>
Presentations	<a href="https://www.st.com/resource/en/product_presentation/microcontrollers-stm32u5-series-product-overview.pdf">https://www.st.com/resource/en/product_presentation/microcontrollers-stm32u5-series-product-overview.pdf</a>
Presentations	<a href="https://www.st.com/resource/en/product_presentation/stm32u5-mcu-lines-for-advanced-graphics.pdf">https://www.st.com/resource/en/product_presentation/stm32u5-mcu-lines-for-advanced-graphics.pdf</a>
Brochures	<a href="https://www.st.com/resource/en/brochure/brstm32ulp.pdf">https://www.st.com/resource/en/brochure/brstm32ulp.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/flstm32u5.pdf">https://www.st.com/resource/en/flyer/flstm32u5.pdf</a>
Security Bulletin	<a href="https://www.st.com/resource/en/security_bulletin/sb0023-eucleak-protection-statement-for-stmicroelectronics-certified-products-stmicroelectronics.pdf">https://www.st.com/resource/en/security_bulletin/sb0023-eucleak-protection-statement-for-stmicroelectronics-certified-products-stmicroelectronics.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>
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>
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Application Notes [https://www.st.com/resource/en/application\\_note/an4776-generalpurpose-timer-cookbook-for-stm32-microcontrollers-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an4776-generalpurpose-timer-cookbook-for-stm32-microcontrollers-stmicroelectronics.pdf)

Application Notes [https://www.st.com/resource/en/application\\_note/an4803-highspeed-si-simulations-using-ibis-and-boardlevel-simulations-using-hyperlynx-si-on-stm32-mcus-and-mpus-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an4803-highspeed-si-simulations-using-ibis-and-boardlevel-simulations-using-hyperlynx-si-on-stm32-mcus-and-mpus-stmicroelectronics.pdf)

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- Application Notes [https://www.st.com/resource/en/application\\_note/an5834-lc-sensor-metering-implementation-on-stm32u5-series-featuring-lpbam-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an5834-lc-sensor-metering-implementation-on-stm32u5-series-featuring-lpbam-stmicroelectronics.pdf)
- Application Notes [https://www.st.com/resource/en/application\\_note/an4991-how-to-wake-up-an-stm32-microcontroller-from-lowpower-mode-with-the-usart-or-the-lpuart-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an4991-how-to-wake-up-an-stm32-microcontroller-from-lowpower-mode-with-the-usart-or-the-lpuart-stmicroelectronics.pdf)
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