



# STM32 CubeMX

## 1. Description

### 1.1. Project

Project Name	L07 MCU
Board Name	custom
Generated with:	STM32CubeMX 6.15.0
Date	09/10/2025

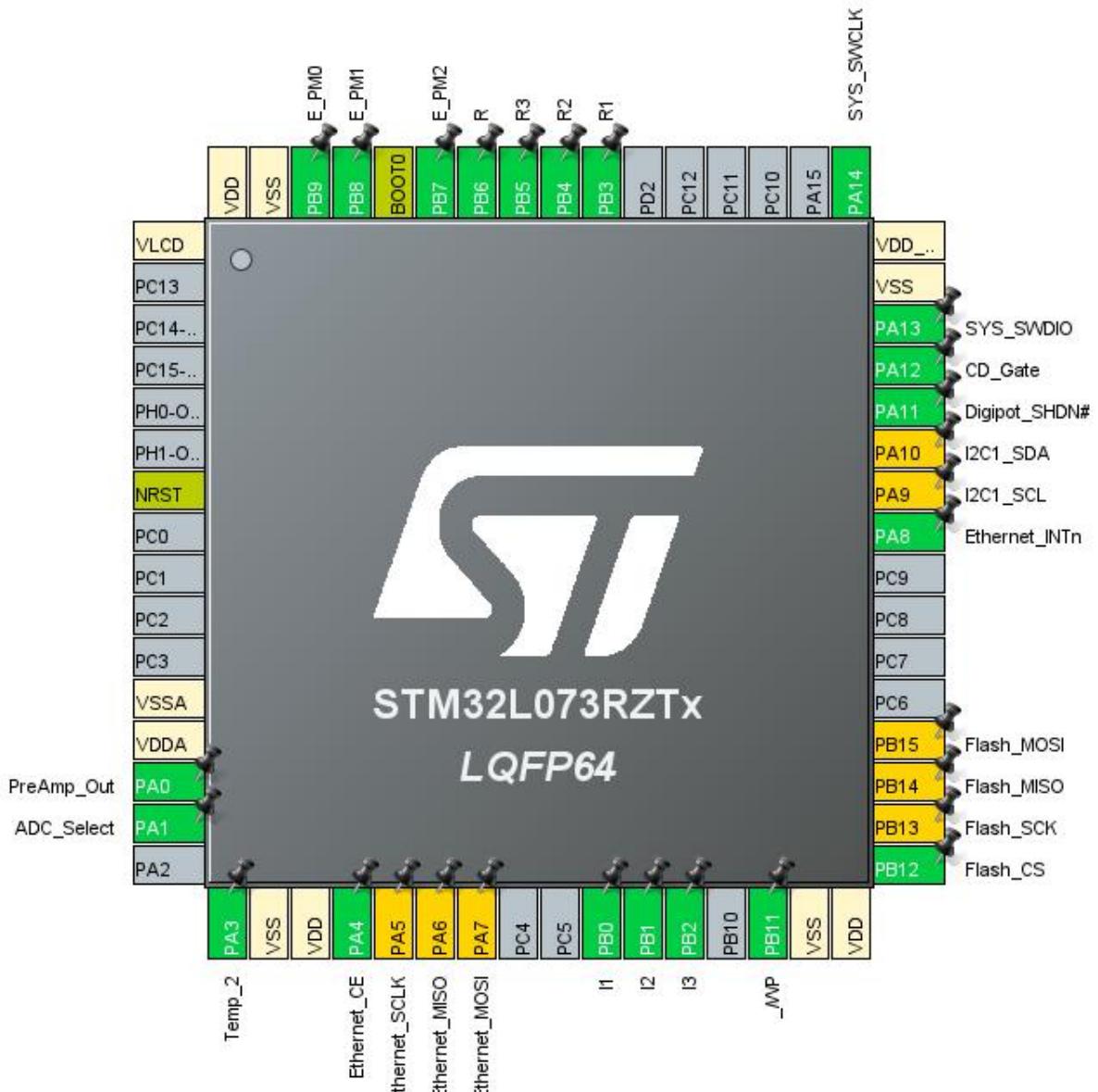
### 1.2. MCU

MCU Series	STM32L0
MCU Line	STM32L0x3
MCU name	STM32L073RZTx
MCU Package	LQFP64
MCU Pin number	64

### 1.3. Core(s) information

Core(s)	Arm Cortex-M0+
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## 2. Pinout Configuration



### 3. Pins Configuration

Pin Number LQFP64	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VLCD	Power		
7	NRST	Reset		
12	VSSA	Power		
13	VDDA	Power		
14	PA0 *	I/O	GPIO_Output	PreAmp_Out
15	PA1 *	I/O	GPIO_Output	ADC_Select
17	PA3	I/O	ADC_IN3	Temp_2
18	VSS	Power		
19	VDD	Power		
20	PA4 *	I/O	GPIO_Output	Ethernet_CE
21	PA5 **	I/O	SPI1_SCK	Ethernet_SCLK
22	PA6 **	I/O	SPI1_MISO	Ethernet_MISO
23	PA7 **	I/O	SPI1_MOSI	Ethernet_MOSI
26	PB0 *	I/O	GPIO_Output	I1
27	PB1 *	I/O	GPIO_Output	I2
28	PB2 *	I/O	GPIO_Output	I3
30	PB11 *	I/O	GPIO_Output	_WP
31	VSS	Power		
32	VDD	Power		
33	PB12 *	I/O	GPIO_Output	Flash_CS
34	PB13 **	I/O	SPI2_SCK	Flash_SCK
35	PB14 **	I/O	SPI2_MISO	Flash_MISO
36	PB15 **	I/O	SPI2_MOSI	Flash_MOSI
41	PA8	I/O	GPIO_EXTI8	Ethernet_INTn
42	PA9 **	I/O	I2C1_SCL	
43	PA10 **	I/O	I2C1_SDA	
44	PA11 *	I/O	GPIO_Output	Digipot_SHDN#
45	PA12 *	I/O	GPIO_Output	CD_Gate
46	PA13	I/O	SYS_SWDIO	
47	VSS	Power		
48	VDD_USB	Power		
49	PA14	I/O	SYS_SWCLK	
55	PB3 *	I/O	GPIO_Output	R1
56	PB4 *	I/O	GPIO_Output	R2
57	PB5 *	I/O	GPIO_Output	R3
58	PB6 *	I/O	GPIO_Output	R

L07 MCU Project  
Configuration Report

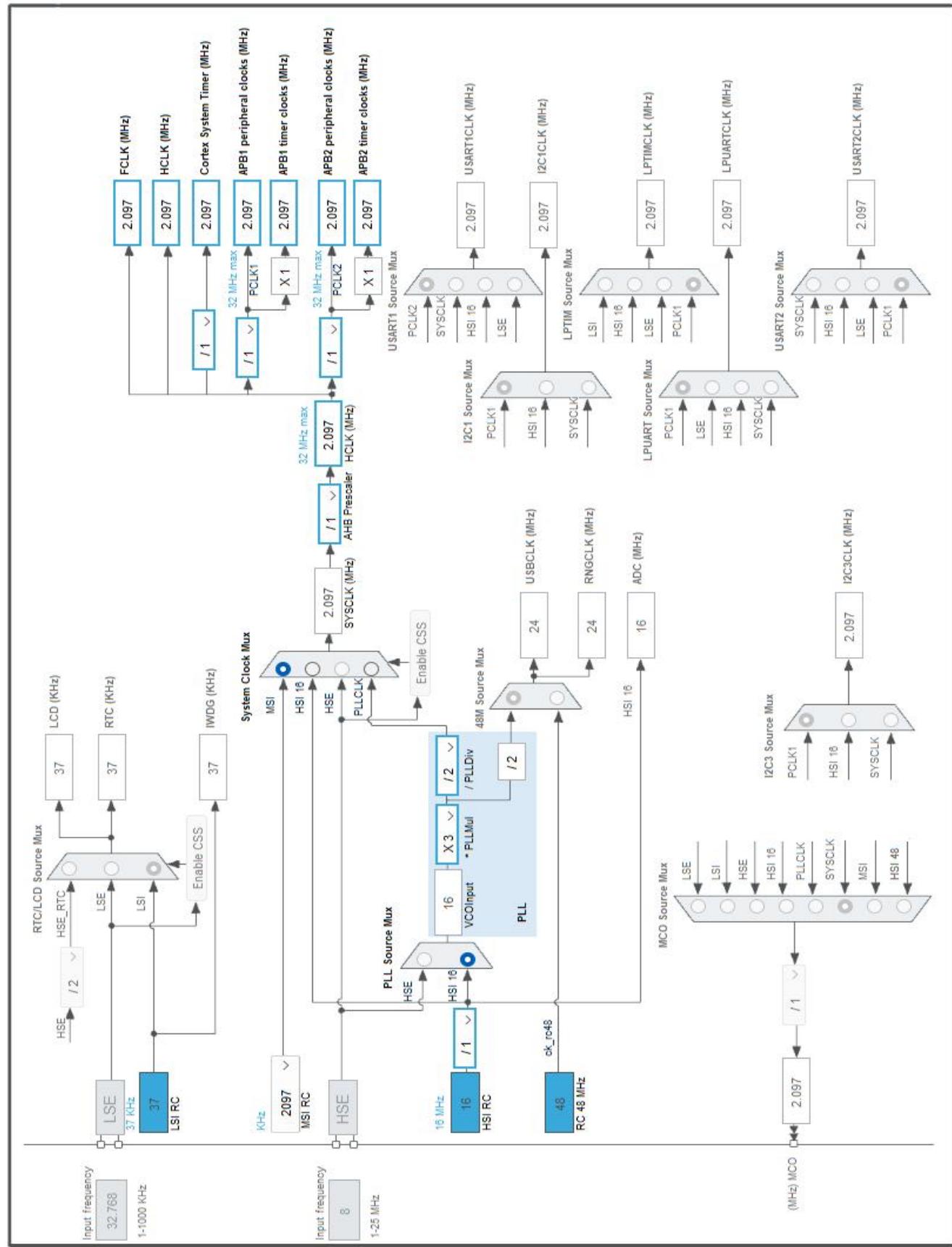
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Pin Number LQFP64	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
59	PB7 *	I/O	GPIO_Output	E_PM2
60	BOOT0	Boot		
61	PB8 *	I/O	GPIO_Output	E_PM1
62	PB9 *	I/O	GPIO_Output	E_PM0
63	VSS	Power		
64	VDD	Power		

\* 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



## 1. Power Consumption Calculator report

### 1.1. Microcontroller Selection

Series	STM32L0
Line	STM32L0x3
MCU	STM32L073RZTx
Datasheet	DS10685 Rev5

### 1.2. Parameter Selection

Temperature	25
Vdd	3.0

### 1.3. Battery Selection

Battery	Li-SOCL2(AAA700)
Capacity	700.0 mAh
Self Discharge	0.08 %/month
Nominal Voltage	3.6 V
Max Cont Current	10.0 mA
Max Pulse Current	30.0 mA
Cells in series	1
Cells in parallel	1

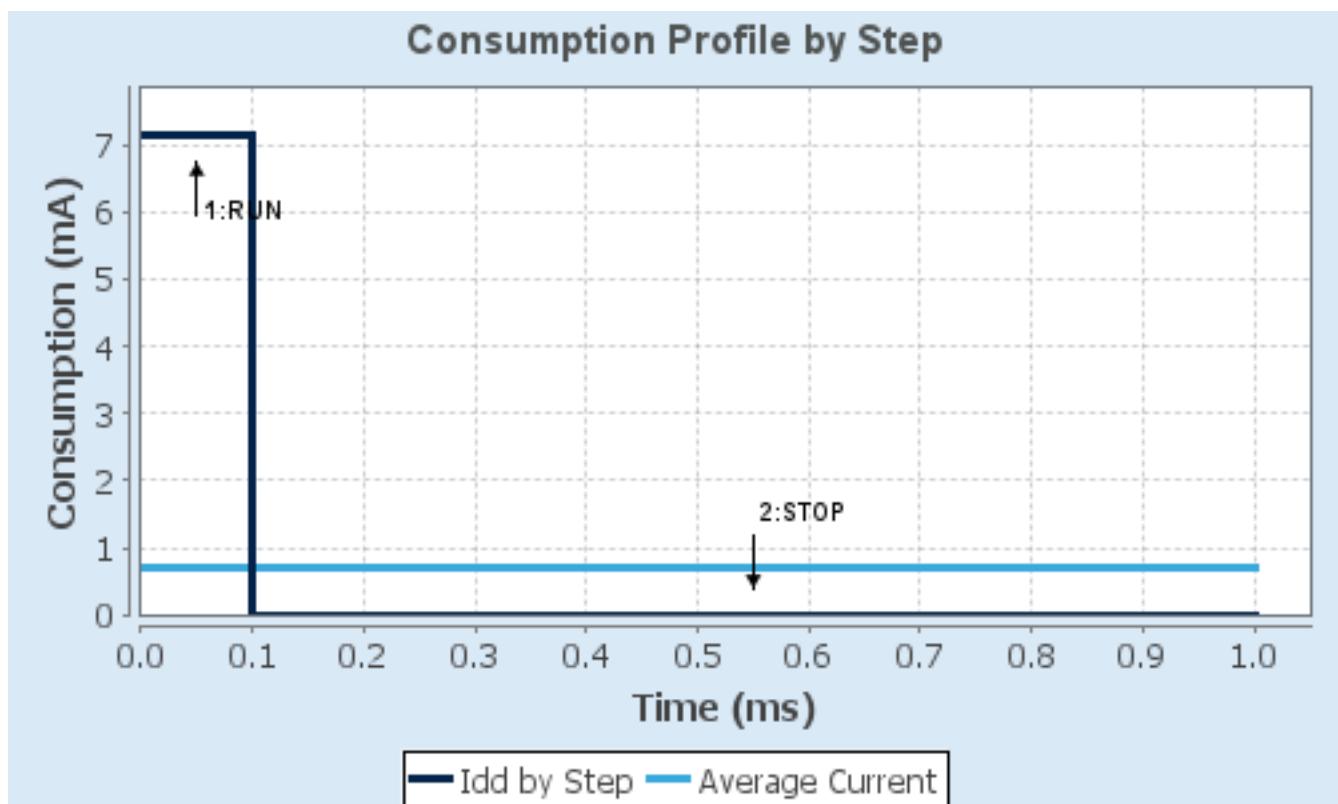
#### 1.4. Sequence

<b>Step</b>	Step1	Step2
<b>Mode</b>	RUN	STOP
<b>Vdd</b>	3.0	3.0
<b>Voltage Source</b>	Battery	Battery
<b>Range</b>	Range1-High	NoRange
<b>Fetch Type</b>	FLASH	n/a
<b>CPU Frequency</b>	32 MHz	0 Hz
<b>Clock Configuration</b>	HSI PLL	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>	7.15 mA	430 nA
<b>Duration</b>	0.1 ms	0.9 ms
<b>DMIPS</b>	30.0	0.0
<b>T<sub>a</sub> Max</b>	104.01	105
<b>Category</b>	In DS Table	In DS Table

#### 1.5. Results

<b>Sequence Time</b>	1 ms	<b>Average Current</b>	715.39 $\mu$ A
<b>Battery Life</b>	1 month, 10 days, 7 hours	<b>Average DMIPS</b>	30.4 DMIPS

#### 1.6. Chart



## 2. Software Project

### 2.1. Project Settings

Name	Value
Project Name	L07 MCU
Project Folder	C:\Users\Shrek\STM32CubeIDE\workspace_1.19.0\L07 MCU
Toolchain / IDE	STM32CubeIDE
Firmware Package Name and Version	STM32Cube FW_L0 V1.12.3
Application Structure	Advanced
Generate Under Root	Yes
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 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

### 2.3. Advanced Settings - Generated Function Calls

Rank	Function Name	Peripheral Instance Name
1	SystemClock_Config	RCC
2	MX_GPIO_Init	GPIO
3	MX_ADC_Init	ADC

### 3. Peripherals and Middlewares Configuration

#### 3.1. ADC

**mode:** IN3

##### 3.1.1. Parameter Settings:

###### **ADC\_Settings:**

Clock Prescaler	Synchronous clock mode divided by 1
Resolution	ADC 12-bit resolution
Data Alignment	Right alignment
Scan Direction	Forward
Continuous Conversion Mode	Disabled
Discontinuous Conversion Mode	Disabled
DMA Continuous Requests	Disabled
End Of Conversion Selection	End of single conversion
Overrun behaviour	Overrun data preserved
Low Power Auto Wait	Disabled
Low Frequency Mode	Enabled
Auto Off	Disabled
Oversampling Mode	Disabled

###### **ADC-Regular\_ConversionMode:**

Sampling Time	1.5 Cycles
External Trigger Conversion Source	Regular Conversion launched by software
External Trigger Conversion Edge	None

###### **WatchDog:**

Enable Analog WatchDog Mode	false
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#### 3.2. RCC

##### 3.2.1. Parameter Settings:

###### **System Parameters:**

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

###### **RCC Parameters:**

HSI Calibration Value	16
MSI Calibration Value	0

HSE Startup Timeout Value (ms) 100  
LSE Startup Timeout Value (ms) 5000

**Power Parameters:**

Power Regulator Voltage Scale Power Regulator Voltage Scale 1

### 3.3. SYS

**mode: Debug Serial Wire**

**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
ADC	PA3	ADC_IN3	Analog mode	No pull-up and no pull-down	n/a	Temp_2
SYS	PA13	SYS_SWDIO	n/a	n/a	n/a	
	PA14	SYS_SWCLK	n/a	n/a	n/a	
Single Mapped Signals	PA5	SPI1_SCK	Alternate Function Push Pull	No pull-up and no pull-down	<b>Very High</b> *	Ethernet_SCLK
	PA6	SPI1_MISO	Alternate Function Push Pull	No pull-up and no pull-down	<b>Very High</b> *	Ethernet_MISO
	PA7	SPI1_MOSI	Alternate Function Push Pull	No pull-up and no pull-down	<b>Very High</b> *	Ethernet_MOSI
	PB13	SPI2_SCK	Alternate Function Push Pull	No pull-up and no pull-down	<b>Very High</b> *	Flash_SCK
	PB14	SPI2_MISO	Alternate Function Push Pull	No pull-up and no pull-down	<b>Very High</b> *	Flash_MISO
	PB15	SPI2_MOSI	Alternate Function Push Pull	No pull-up and no pull-down	<b>Very High</b> *	Flash_MOSI
	PA9	I2C1_SCL	Alternate Function Open Drain	No pull-up and no pull-down	<b>Very High</b> *	
	PA10	I2C1_SDA	Alternate Function Open Drain	No pull-up and no pull-down	<b>Very High</b> *	
GPIO	PA0	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	PreAmp_Out
	PA1	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	ADC_Select
	PA4	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	Ethernet_CE
	PB0	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	I1
	PB1	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	I2
	PB2	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	I3
	PB11	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	_WP
	PB12	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	Flash_CS
	PA8	GPIO_EXTI8	External Interrupt Mode with Rising edge trigger detection	No pull-up and no pull-down	n/a	Ethernet_INTn
	PA11	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	Digipot_SHDN#
	PA12	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	CD_Gate
	PB3	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	R1
	PB4	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	R2
	PB5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	R3
	PB6	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	R

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
	PB7	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	E_PM2
	PB8	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	E_PM1
	PB9	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	E_PM0

#### 4.2. DMA configuration

nothing configured in DMA service

## 4.3. NVIC configuration

### 4.3.1. NVIC

Interrupt Table	Enable	Preenemption Priority	SubPriority
Non maskable Interrupt	true	0	0
Hard fault interrupt	true	0	0
System service call via SWI instruction	true	0	0
Pendable request for system service	true	0	0
System tick timer	true	3	0
PVD interrupt through EXTI line 16		unused	
Flash and EEPROM global interrupt		unused	
RCC and CRS global interrupt		unused	
EXTI line 4 to 15 interrupts		unused	
ADC, COMP1 and COMP2 interrupts (COMP interrupts through EXTI lines 21 and 22)		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
System service call via SWI instruction	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

## 6. Docs & Resources

Type	Link
IBIS models	<a href="https://www.st.com/resource/en/ibis_model/stm32l0_ibis.zip">https://www.st.com/resource/en/ibis_model/stm32l0_ibis.zip</a>
System View	<a href="https://www.st.com/resource/en/svd/stm32l0-svd.zip">https://www.st.com/resource/en/svd/stm32l0-svd.zip</a>
Description	
Presentations	<a href="https://www.st.com/resource/en/product_presentation/gt_stm32f0-l0.pdf">https://www.st.com/resource/en/product_presentation/gt_stm32f0-l0.pdf</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-stm32l0-series-product-overview.pdf">https://www.st.com/resource/en/product_presentation/microcontrollers-stm32l0-series-product-overview.pdf</a>
Brochures	<a href="https://www.st.com/resource/en/brochure/brstm32l0.pdf">https://www.st.com/resource/en/brochure/brstm32l0.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/flstm32trust.pdf">https://www.st.com/resource/en/flyer/flstm32trust.pdf</a>
Magazine Articles	<a href="https://www.st.com/resource/en/magazine/design-elektronik_october2016.pdf">https://www.st.com/resource/en/magazine/design-elektronik_october2016.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>
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>

- Application Notes [https://www.st.com/resource/en/application\\_note/an3126-audio-and-waveform-generation-using-the-dac-in-stm32-products-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an3126-audio-and-waveform-generation-using-the-dac-in-stm32-products-stmicroelectronics.pdf)
- Application Notes [https://www.st.com/resource/en/application\\_note/an3155-usart-protocol-used-in-the-stm32-bootloader-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an3155-usart-protocol-used-in-the-stm32-bootloader-stmicroelectronics.pdf)
- Application Notes [https://www.st.com/resource/en/application\\_note/an3156-usb-dfu-protocol-used-in-the-stm32-bootloader-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an3156-usb-dfu-protocol-used-in-the-stm32-bootloader-stmicroelectronics.pdf)
- Application Notes [https://www.st.com/resource/en/application\\_note/an4221-i2c-protocol-used-in-the-stm32-bootloader-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an4221-i2c-protocol-used-in-the-stm32-bootloader-stmicroelectronics.pdf)
- Application Notes [https://www.st.com/resource/en/application\\_note/an4286-spi-protocol-used-in-the-stm32-bootloader-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an4286-spi-protocol-used-in-the-stm32-bootloader-stmicroelectronics.pdf)
- Application Notes [https://www.st.com/resource/en/application\\_note/an4445-stm32l0xx-ultralow-power-features-overview-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an4445-stm32l0xx-ultralow-power-features-overview-stmicroelectronics.pdf)
- Application Notes [https://www.st.com/resource/en/application\\_note/an4467-getting-started-with-stm32l0xx-hardware-development-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an4467-getting-started-with-stm32l0xx-hardware-development-stmicroelectronics.pdf)
- Application Notes [https://www.st.com/resource/en/application\\_note/an4617-migrating-between-stm32f0-and-stm32l0-microcontrollers-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an4617-migrating-between-stm32f0-and-stm32l0-microcontrollers-stmicroelectronics.pdf)
- Application Notes [https://www.st.com/resource/en/application\\_note/an4629-adc-hardware-oversampling-for-microcontrollers-of-the-stm32-l0-and-l4-series-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an4629-adc-hardware-oversampling-for-microcontrollers-of-the-stm32-l0-and-l4-series-stmicroelectronics.pdf)
- Application Notes [https://www.st.com/resource/en/application\\_note/an4654-migrating-between-stm32l1-and-stm32l0-series-microcontrollers-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an4654-migrating-between-stm32l1-and-stm32l0-series-microcontrollers-stmicroelectronics.pdf)
- Application Notes [https://www.st.com/resource/en/application\\_note/an4655-virtually-increasing-the-number-of-serial-communication-peripherals-in-stm32-applications-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an4655-virtually-increasing-the-number-of-serial-communication-peripherals-in-stm32-applications-stmicroelectronics.pdf)
- Application Notes [https://www.st.com/resource/en/application\\_note/an4718-how-to-design-a-vbat-system-based-on-stm32l0l1-series-with-external-components-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an4718-how-to-design-a-vbat-system-based-on-stm32l0l1-series-with-external-components-stmicroelectronics.pdf)
- Application Notes [https://www.st.com/resource/en/application\\_note/an4725-stm32cube-mcu-package-examples-for-stm32l0-series-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an4725-stm32cube-mcu-package-examples-for-stm32l0-series-stmicroelectronics.pdf)
- Application Notes [https://www.st.com/resource/en/application\\_note/an4729-stm32l0l4-firewall-overview-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an4729-stm32l0l4-firewall-overview-stmicroelectronics.pdf)

- Application Notes [https://www.st.com/resource/en/application\\_note/an4730-using-the-firewall-embedded-in-stm32l0l4l4-series-mcus-for-secure-access-to-sensitive-parts-of-code-and-data-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an4730-using-the-firewall-embedded-in-stm32l0l4l4-series-mcus-for-secure-access-to-sensitive-parts-of-code-and-data-stmicroelectronics.pdf)
- Application Notes [https://www.st.com/resource/en/application\\_note/an4750-handling-of-software-errors-in-stm32-applications-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an4750-handling-of-software-errors-in-stm32-applications-stmicroelectronics.pdf)
- 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-simulation-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-simulation-using-ibis-and-boardlevel-simulations-using-hyperlynx-si-on-stm32-mcus-and-mpus-stmicroelectronics.pdf)
- Application Notes [https://www.st.com/resource/en/application\\_note/an4809-migrating-between-stm32l0-series-and-stm32l4-series--stm32l4-series-microcontrollers-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an4809-migrating-between-stm32l0-series-and-stm32l4-series--stm32l4-series-microcontrollers-stmicroelectronics.pdf)
- Application Notes [https://www.st.com/resource/en/application\\_note/an4989-stm32-microcontroller-debug-toolbox-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an4989-stm32-microcontroller-debug-toolbox-stmicroelectronics.pdf)
- Application Notes [https://www.st.com/resource/en/application\\_note/an5027-interfacing-pdm-digital-microphones-using-stm32-mcus-and-mpus-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an5027-interfacing-pdm-digital-microphones-using-stm32-mcus-and-mpus-stmicroelectronics.pdf)
- Application Notes [https://www.st.com/resource/en/application\\_note/an5086-i2s-protocol-emulation-on-stm32l0-series-microcontrollers-using-a-standard-spi-peripheral-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an5086-i2s-protocol-emulation-on-stm32l0-series-microcontrollers-using-a-standard-spi-peripheral-stmicroelectronics.pdf)
- Application Notes [https://www.st.com/resource/en/application\\_note/an4899-stm32-microcontroller-gpio-hardware-settings-and-lowpower-consumption-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an4899-stm32-microcontroller-gpio-hardware-settings-and-lowpower-consumption-stmicroelectronics.pdf)
- Application Notes [https://www.st.com/resource/en/application\\_note/an5612-esd-protection-of-stm32-mcus-and-mpus-stmicroelectronics.pdf](https://www.st.com/resource/en/application_note/an5612-esd-protection-of-stm32-mcus-and-mpus-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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