



1. Description

1.1. Project

Project Name	template-jatim1
Board Name	custom
Generated with:	STM32CubeMX 6.10.0
Date	04/15/2024

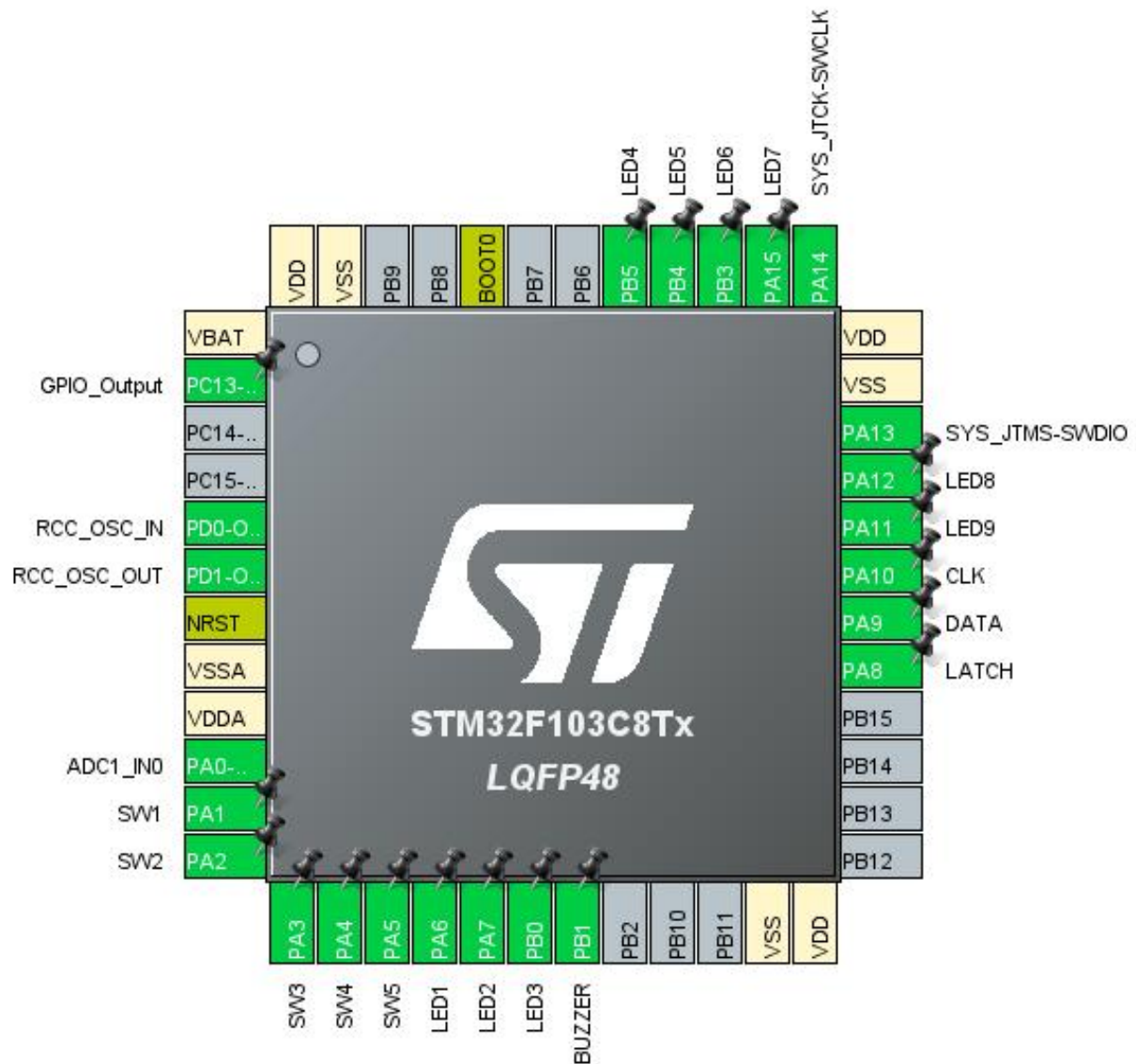
1.2. MCU

MCU Series	STM32F1
MCU Line	STM32F103
MCU name	STM32F103C8Tx
MCU Package	LQFP48
MCU Pin number	48

1.3. Core(s) information

Core(s)	Arm Cortex-M3
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2. Pinout Configuration

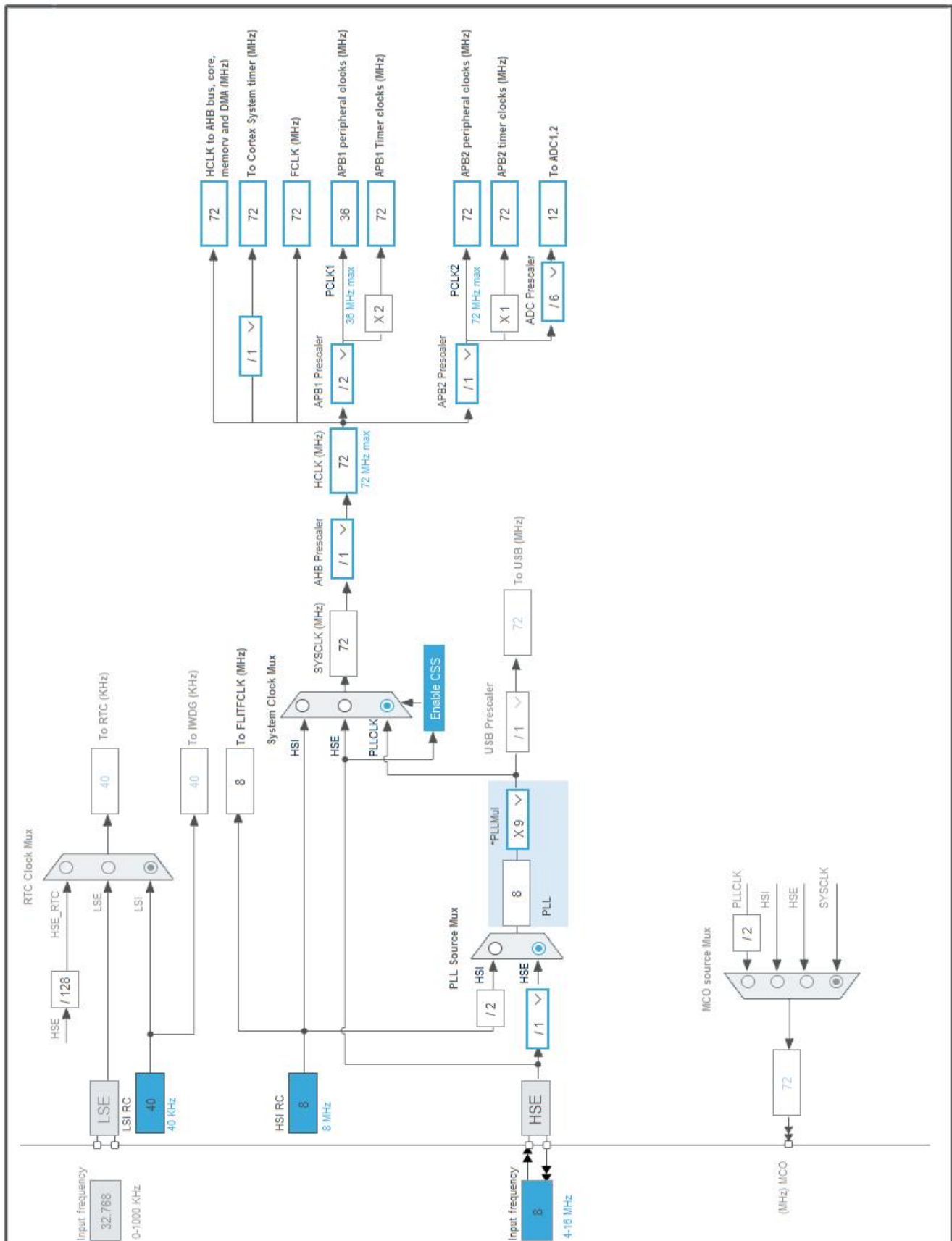


3. Pins Configuration

Pin Number LQFP48	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VBAT	Power		
2	PC13-TAMPER-RTC *	I/O	GPIO_Output	
5	PD0-OSC_IN	I/O	RCC_OSC_IN	
6	PD1-OSC_OUT	I/O	RCC_OSC_OUT	
7	NRST	Reset		
8	VSSA	Power		
9	VDDA	Power		
10	PA0-WKUP	I/O	ADC1_IN0	
11	PA1 *	I/O	GPIO_Input	SW1
12	PA2 *	I/O	GPIO_Input	SW2
13	PA3 *	I/O	GPIO_Input	SW3
14	PA4 *	I/O	GPIO_Input	SW4
15	PA5 *	I/O	GPIO_Input	SW5
16	PA6 *	I/O	GPIO_Output	LED1
17	PA7 *	I/O	GPIO_Output	LED2
18	PB0 *	I/O	GPIO_Output	LED3
19	PB1 *	I/O	GPIO_Output	BUZZER
23	VSS	Power		
24	VDD	Power		
29	PA8 *	I/O	GPIO_Output	LATCH
30	PA9 *	I/O	GPIO_Output	DATA
31	PA10 *	I/O	GPIO_Output	CLK
32	PA11 *	I/O	GPIO_Output	LED9
33	PA12 *	I/O	GPIO_Output	LED8
34	PA13	I/O	SYS_JTMS-SWDIO	
35	VSS	Power		
36	VDD	Power		
37	PA14	I/O	SYS_JTCK-SWCLK	
38	PA15 *	I/O	GPIO_Output	LED7
39	PB3 *	I/O	GPIO_Output	LED6
40	PB4 *	I/O	GPIO_Output	LED5
41	PB5 *	I/O	GPIO_Output	LED4
44	BOOT0	Boot		
47	VSS	Power		
48	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	template-jatim1
Project Folder	C:\Users\User\STM32CubeIDE\workspace_1.14.1\template-jatim1
Toolchain / IDE	STM32CubeIDE
Firmware Package Name and Version	STM32Cube FW_F1 V1.8.5
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
3	MX_ADC1_Init	ADC1

1. Power Consumption Calculator report

1.1. Microcontroller Selection

Series	STM32F1
Line	STM32F103
MCU	STM32F103C8Tx
Datasheet	DS5319_Rev17

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

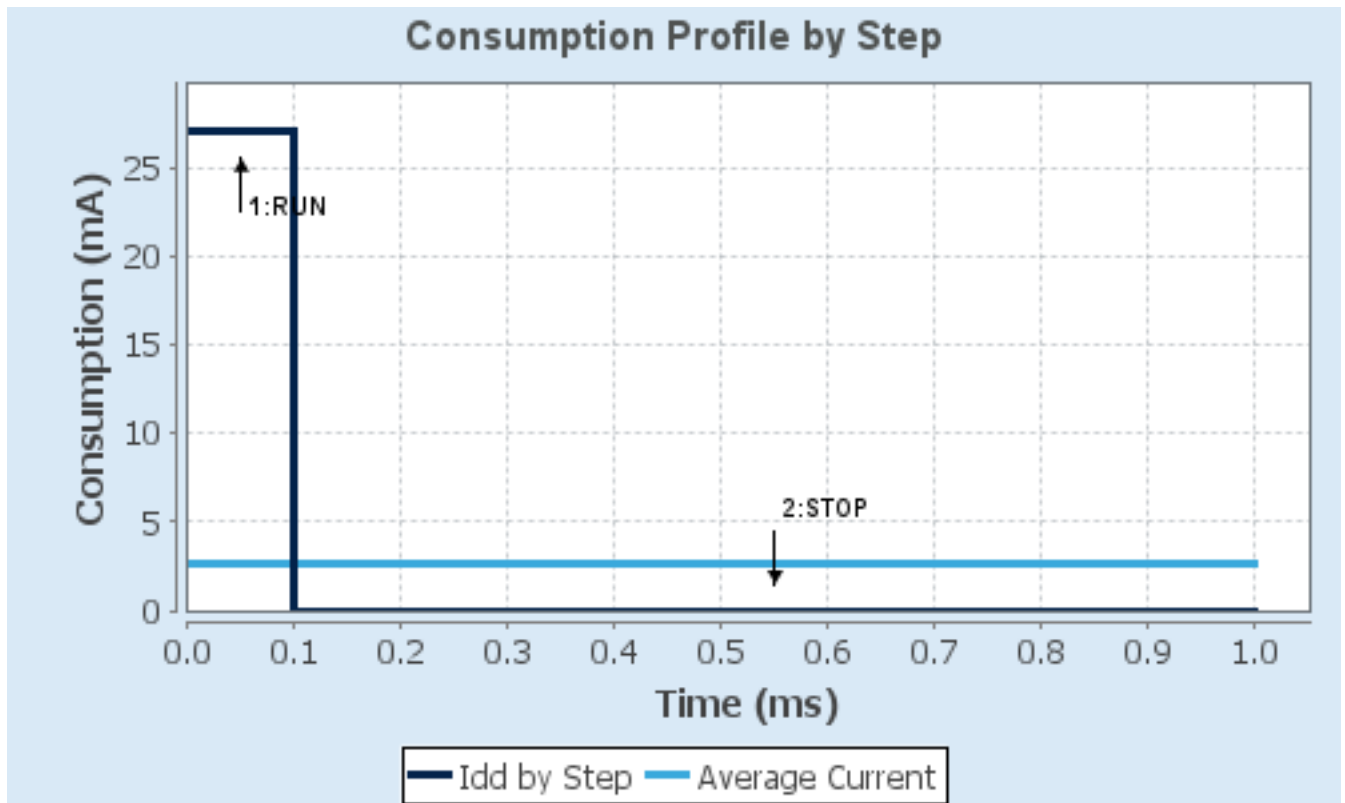
1.4. Sequence

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	27 mA	14 μ A
Duration	0.1 ms	0.9 ms
DMIPS	90.0	0.0
Ta Max	100.1	105
Category	In DS Table	In DS Table

1.5. Results

Sequence Time	1 ms	Average Current	2.71 mA
Battery Life	1 month, 21 days, 17 hours	Average DMIPS	61.0 DMIPS

1.6. Chart



2. Peripherals and Middlewares Configuration

2.1. ADC1

mode: IN0

2.1.1. Parameter Settings:

ADCs_Common_Settings:

Mode Independent mode

ADC_Settings:

Data Alignment Right alignment

Scan Conversion Mode Disabled

Continuous Conversion Mode **Enabled ***

Discontinuous Conversion Mode Disabled

ADC_Regular_ConversionMode:

Enable Regular Conversions Enable

Number Of Conversion 1

External Trigger Conversion Source Regular Conversion launched by software

Rank 1

Channel Channel 0

Sampling Time 1.5 Cycles

ADC_Injected_ConversionMode:

Enable Injected Conversions Disable

WatchDog:

Enable Analog WatchDog Mode false

2.2. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

2.2.1. Parameter Settings:

System Parameters:

VDD voltage (V) 3.3

Prefetch Buffer Enabled

Flash Latency(WS) 2 WS (3 CPU cycle)

RCC Parameters:

HSI Calibration Value 16

HSE Startup Timeout Value (ms) 100

LSE Startup Timeout Value (ms) 5000

2.3. SYS

Debug: Serial Wire

Timebase Source: SysTick

*** User modified value**

3. System Configuration

3.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
ADC1	PA0-WKUP	ADC1_IN0	Analog mode	n/a	n/a	
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	
GPIO	PC13-TAMPER-RTC	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PA1	GPIO_Input	Input mode	Pull-up *	n/a	SW1
	PA2	GPIO_Input	Input mode	Pull-up *	n/a	SW2
	PA3	GPIO_Input	Input mode	Pull-up *	n/a	SW3
	PA4	GPIO_Input	Input mode	Pull-up *	n/a	SW4
	PA5	GPIO_Input	Input mode	Pull-up *	n/a	SW5
	PA6	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED1
	PA7	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED2
	PB0	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED3
	PB1	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	BUZZER
	PA8	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LATCH
	PA9	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DATA
	PA10	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	CLK
	PA11	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED9
	PA12	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED8
	PA15	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED7
	PB3	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED6
	PB4	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED5
	PB5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED4

3.2. DMA configuration

nothing configured in DMA service

3.3. NVIC configuration

3.3.1. 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 line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
ADC1 and ADC2 global interrupts	unused		

3.3.2. 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

4. System Views

4.1. Category view

4.1.1. Current

Middleware

System Core

Analog

Timers

Connectivity

Computing

DMA

ADC1 

GPIO 

IVIC 

RCC 

SYS 

5. Docs & Resources

Type	Link
BSDL files	https://www.st.com/resource/en/bsdl_model/stm32f1_bsd1.zip
IBIS models	https://www.st.com/resource/en/ibis_model/stm32ibis.zip
System View Description	https://www.st.com/resource/en/svd/stm32f1_svd.zip
Presentations	https://www.st.com/resource/en/product_presentation/stm32-stm8_embedded_software_solutions.pdf
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microcontroller-applications-from-stm32f1-to-stm32l1-series-
stmicroelectronics.pdf

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for related Tools stmicroelectronics.pdf

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