



1. Description

1.1. Project

Project Name	STCubeGenerated
Board Name	STCubeGenerated
Generated with:	STM32CubeMX 6.2.1
Date	04/03/2021

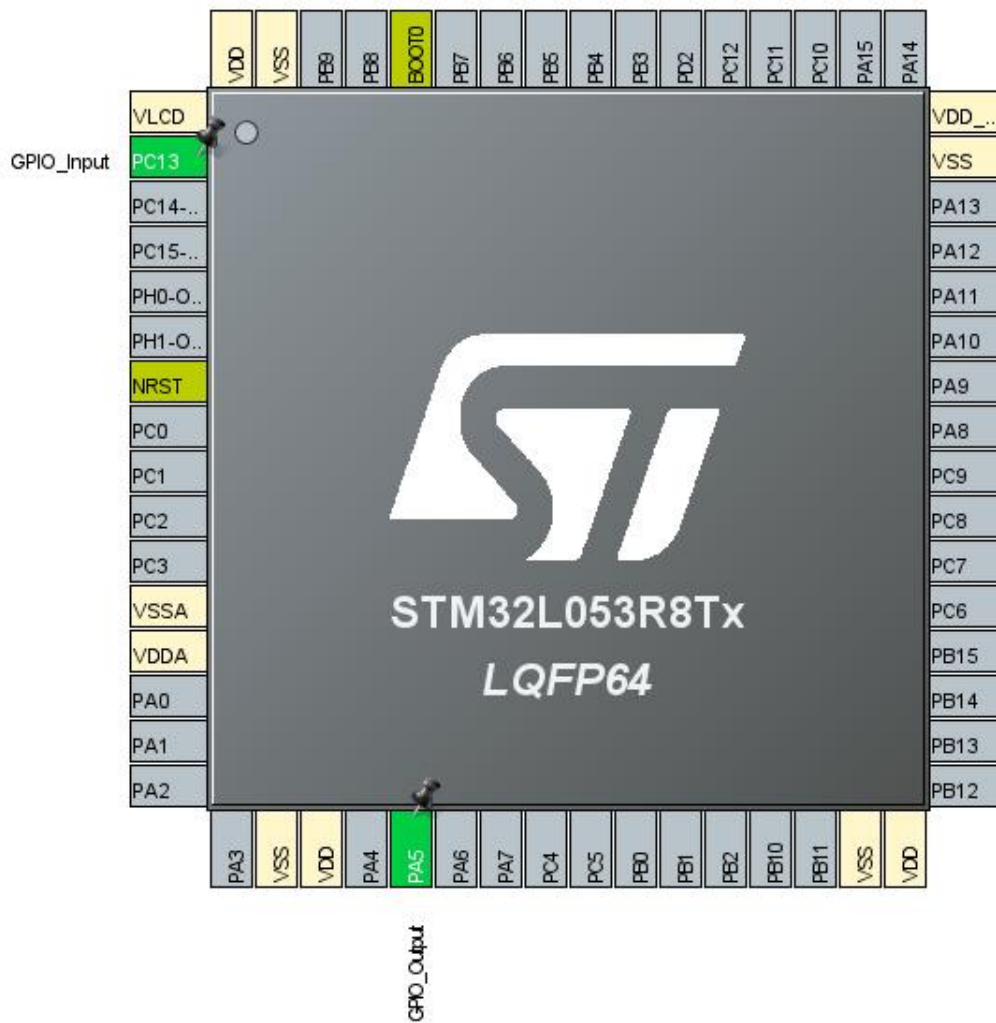
1.2. MCU

MCU Series	STM32L0
MCU Line	STM32L0x3
MCU name	STM32L053R8Tx
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		
2	PC13 *	I/O	GPIO_Input	
7	NRST	Reset		
12	VSSA	Power		
13	VDDA	Power		
18	VSS	Power		
19	VDD	Power		
21	PA5 *	I/O	GPIO_Output	
31	VSS	Power		
32	VDD	Power		
47	VSS	Power		
48	VDD_USB	Power		
60	BOOT0	Boot		
63	VSS	Power		
64	VDD	Power		

* The pin is affected with an I/O function

5. Software Project

5.1. Project Settings

Name	Value
Project Name	STCubeGenerated
Project Folder	E:\Surya\Naive bayes classifier\Boards\ST\NUCLEO-
Toolchain / IDE	MDK-ARM V5
Firmware Package Name and Version	STM32Cube FW_L0 V1.10.0
Application Structure	Basic
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	Add necessary library files as reference in the toolchain project configuration file
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	MX_GPIO_Init	GPIO
2	SystemClock_Config	RCC
3	MX_RNG_Init	RNG

6. Power Consumption Calculator report

6.1. Microcontroller Selection

Series	STM32L0
Line	STM32L0x3
MCU	STM32L053R8Tx
Datasheet	DS10152_Rev7

6.2. Parameter Selection

Temperature	25
Vdd	3.0

6.3. 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

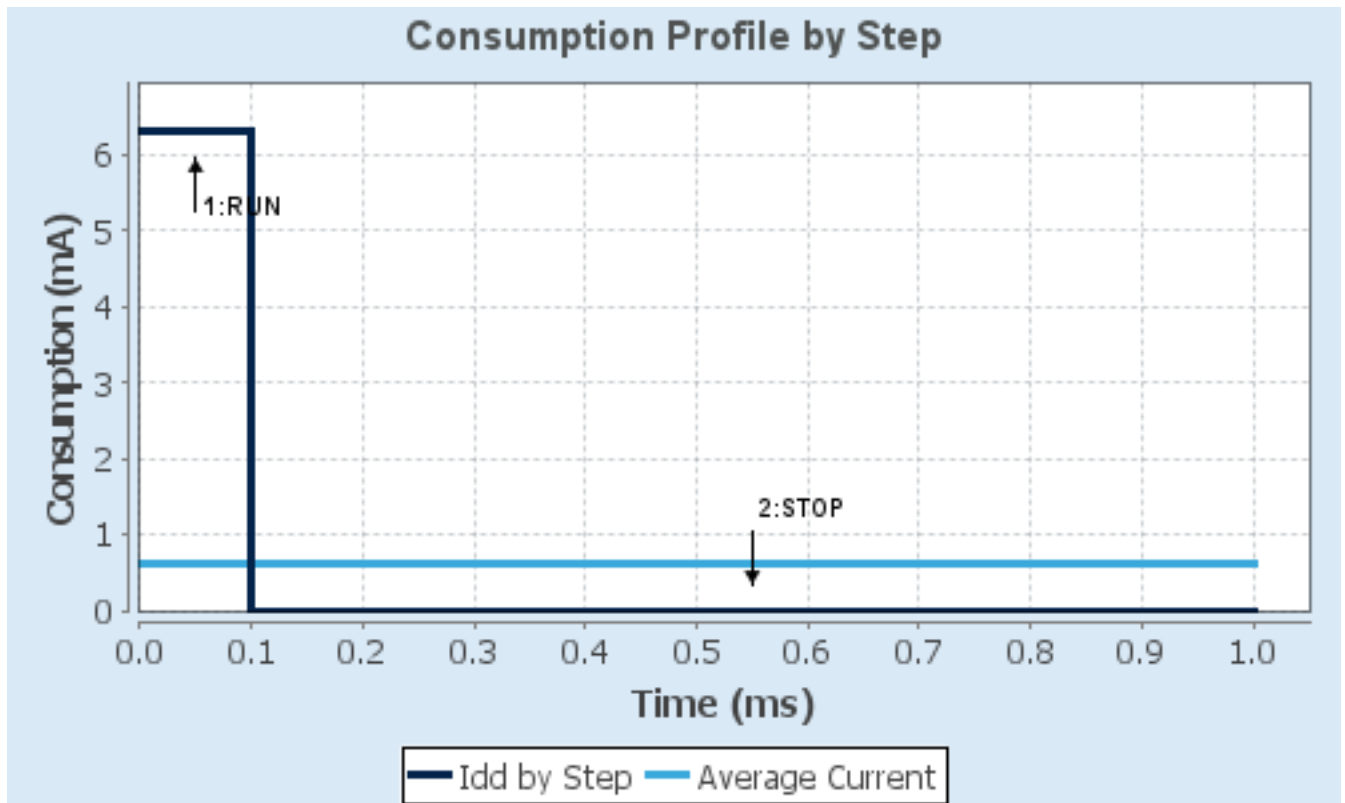
6.4. Sequence

Step	Step1	Step2
Mode	RUN	STOP
Vdd	3.0	3.0
Voltage Source	Battery	Battery
Range	Range1-High	NoRange
Fetch Type	FLASH	n/a
CPU Frequency	32 MHz	0 Hz
Clock Configuration	HSEBYP PLL	ALL CLOCKS OFF
Clock Source Frequency	16 MHz	0 Hz
Peripherals		
Additional Cons.	0 mA	0 mA
Average Current	6.3 mA	410 nA
Duration	0.1 ms	0.9 ms
DMIPS	30.0	0.0
Ta Max	104.15	105
Category	In DS Table	In DS Table

6.5. Results

Sequence Time	1 ms	Average Current	630.37 μ A
Battery Life	1 month, 15 days, 19 hours	Average DMIPS	30.4 DMIPS

6.6. Chart



7. Peripherals and Middlewares Configuration

7.1. RCC

7.1.1. Parameter Settings:

System Parameters:

VDD voltage (V)	3.3
Buffer Cache	Enabled
Prefetch	Disabled
Preread	Enabled
Flash Latency(WS)	1 WS (2 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
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7.2. RNG

mode: Activated

7.3. 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	PC13	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	
	PA5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	

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
System service call via SWI instruction	true	2	0
Pendable request for system service	true	3	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		
AES, RNG and LPUART1 interrupts / LPUART1 wake-up interrupt through EXTI line 28	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
System service call via SWI instruction	false	false	false
Pendable request for system service	false	false	false
System tick timer	false	false	true

* User modified value

9. System Views

9.1. Category view

9.1.1. Current

Middleware

System Core

Analog

Timers

Connectivity

Multimedia

Security

Computing

DMA

GPIO ✓

NVIC ✓

RCC ✓

SYS ✓

RNG ✓

10. Docs & Resources

Type	Link
Datasheet	http://www.st.com/resource/en/datasheet/DM00105960.pdf
Reference manual	http://www.st.com/resource/en/reference_manual/DM00095744.pdf
Programming manual	http://www.st.com/resource/en/programming_manual/DM00104451.pdf
Errata sheet	http://www.st.com/resource/en/errata_sheet/DM00114891.pdf
Application note	http://www.st.com/resource/en/application_note/CD00160362.pdf
Application note	http://www.st.com/resource/en/application_note/CD00167594.pdf
Application note	http://www.st.com/resource/en/application_note/CD00211314.pdf
Application note	http://www.st.com/resource/en/application_note/CD00259245.pdf
Application note	http://www.st.com/resource/en/application_note/CD00264342.pdf
Application note	http://www.st.com/resource/en/application_note/CD00264379.pdf
Application note	http://www.st.com/resource/en/application_note/DM00042534.pdf
Application note	http://www.st.com/resource/en/application_note/DM00072315.pdf
Application note	http://www.st.com/resource/en/application_note/DM00073742.pdf
Application note	http://www.st.com/resource/en/application_note/DM00073853.pdf
Application note	http://www.st.com/resource/en/application_note/DM00081379.pdf
Application note	http://www.st.com/resource/en/application_note/DM00085385.pdf
Application note	http://www.st.com/resource/en/application_note/DM00087593.pdf
Application note	http://www.st.com/resource/en/application_note/DM00108286.pdf
Application note	http://www.st.com/resource/en/application_note/DM00112257.pdf
Application note	http://www.st.com/resource/en/application_note/DM00129215.pdf
Application note	http://www.st.com/resource/en/application_note/DM00145318.pdf
Application note	http://www.st.com/resource/en/application_note/DM00150625.pdf
Application note	http://www.st.com/resource/en/application_note/DM00151811.pdf
Application note	http://www.st.com/resource/en/application_note/DM00158601.pdf
Application note	http://www.st.com/resource/en/application_note/DM00160482.pdf

Application note http://www.st.com/resource/en/application_note/DM00150423.pdf

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Application note http://www.st.com/resource/en/application_note/DM00220769.pdf

Application note http://www.st.com/resource/en/application_note/DM00206898.pdf

Application note http://www.st.com/resource/en/application_note/DM00257177.pdf

Application note http://www.st.com/resource/en/application_note/DM00272912.pdf

Application note http://www.st.com/resource/en/application_note/DM00226326.pdf

Application note http://www.st.com/resource/en/application_note/DM00236305.pdf

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Application note http://www.st.com/resource/en/application_note/DM00296349.pdf

Application note http://www.st.com/resource/en/application_note/DM00327191.pdf

Application note http://www.st.com/resource/en/application_note/DM00355687.pdf

Application note http://www.st.com/resource/en/application_note/DM00354244.pdf

Application note http://www.st.com/resource/en/application_note/DM00315319.pdf

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Application note http://www.st.com/resource/en/application_note/DM00209772.pdf

Application note http://www.st.com/resource/en/application_note/DM00660597.pdf

Application note http://www.st.com/resource/en/application_note/DM00725181.pdf