



1. Description

1.1. Project

Project Name	nimmsta_task
Board Name	custom
Generated with:	STM32CubeMX 6.9.0
Date	07/21/2023

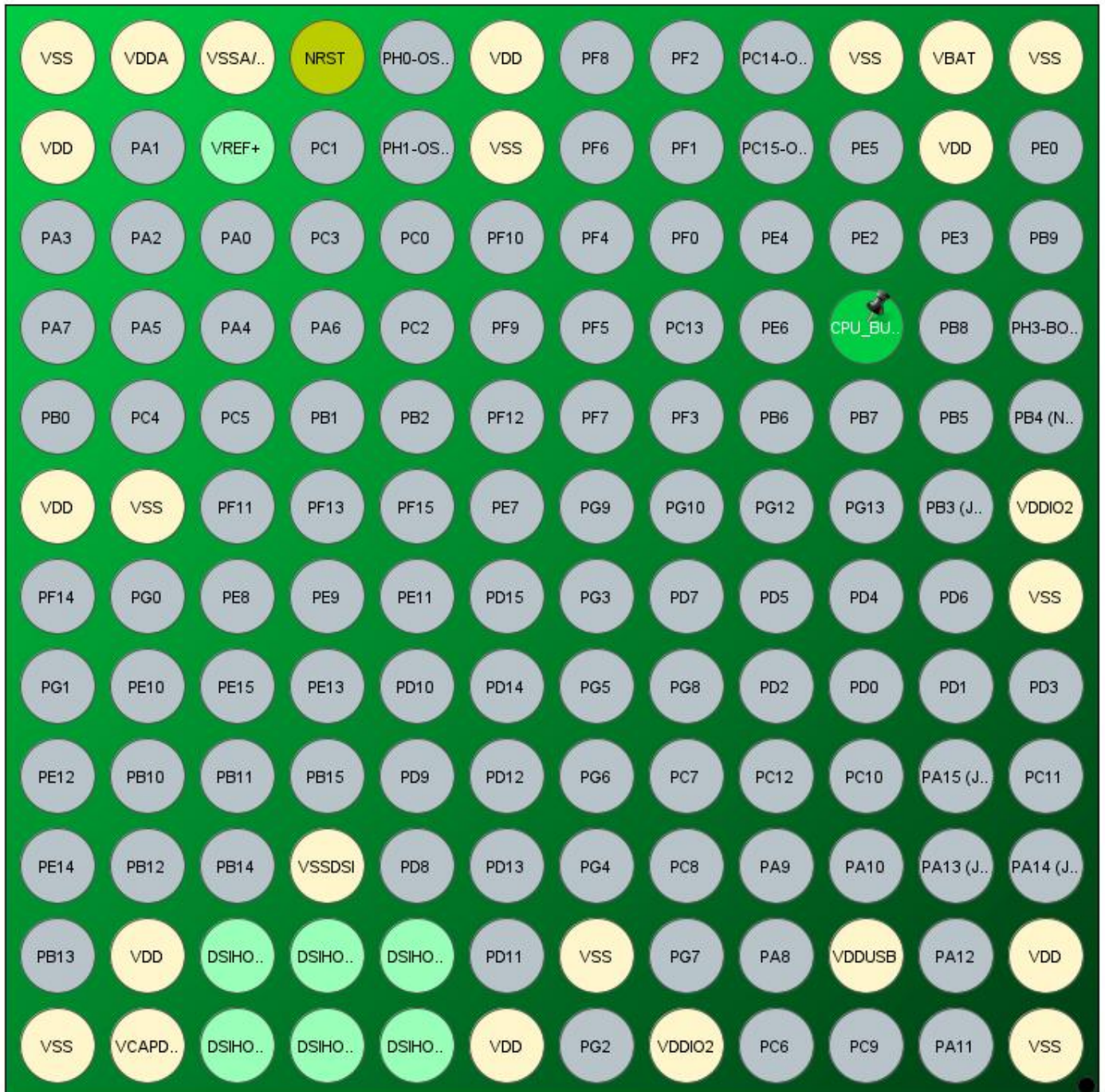
1.2. MCU

MCU Series	STM32L4
MCU Line	STM32L4R9/S9
MCU name	STM32L4R9ZIJx
MCU Package	UFBGA144
MCU Pin number	144

1.3. Core(s) information

Core(s)	Arm Cortex-M4
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2. Pinout Configuration



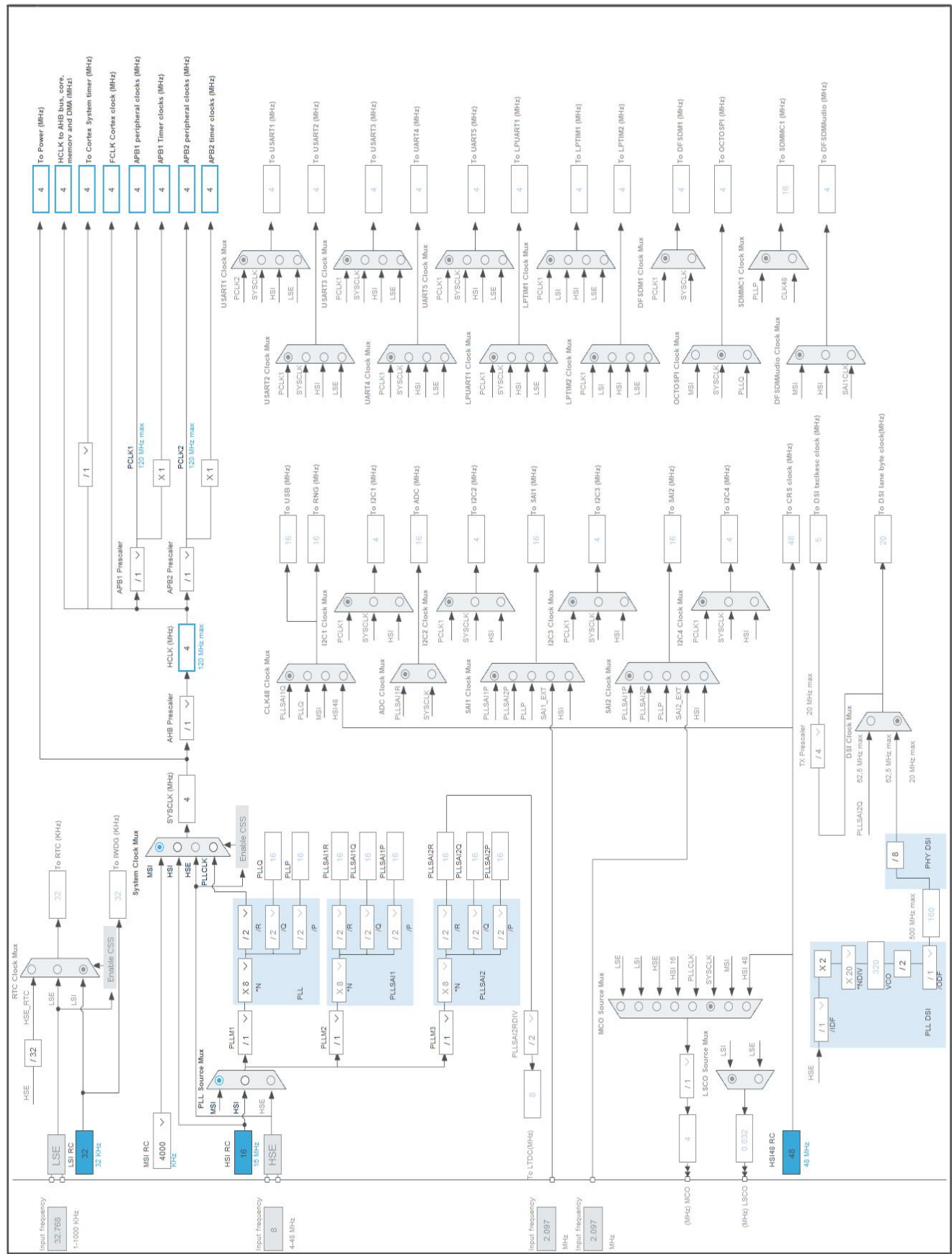
UFBGA144 (Bottom view - Rotated -270°)

3. Pins Configuration

Pin Number UFBGA144	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
A1	VSS	Power		
A6	VDDIO2	Power		
A7	VSS	Power		
A11	VDD	Power		
A12	VSS	Power		
B1	VBAT	Power		
B2	VDD	Power		
C1	VSS	Power		
C4	PE1 *	I/O	GPIO_Output	CPU_BUZZER_DISABLE_O UT
C11	VDDUSB	Power		
E12	VDDIO2	Power		
F11	VSS	Power		
G1	VDD	Power		
G2	VSS	Power		
G12	VDD	Power		
J1	NRST	Reset		
J10	VSSDSI	Power		
K1	VSSA/VREF-	Power		
L1	VDDA	Power		
L6	VSS	Power		
L11	VDD	Power		
L12	VCAPDSI	Power		
M1	VSS	Power		
M2	VDD	Power		
M6	VDD	Power		
M12	VSS	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	nimmsta_task
Project Folder	C:\Users\Sanket Yenare\STM32CubeIDE\workspace_1.13.0\nimmsta_task
Toolchain / IDE	STM32CubeIDE
Firmware Package Name and Version	STM32Cube FW_L4 V1.18.0
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

1. Power Consumption Calculator report

1.1. Microcontroller Selection

Series	STM32L4
Line	STM32L4R9/S9
MCU	STM32L4R9ZIJx
Datasheet	DS12023_Rev0

1.2. Parameter Selection

Temperature	25
Vdd	3.0

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

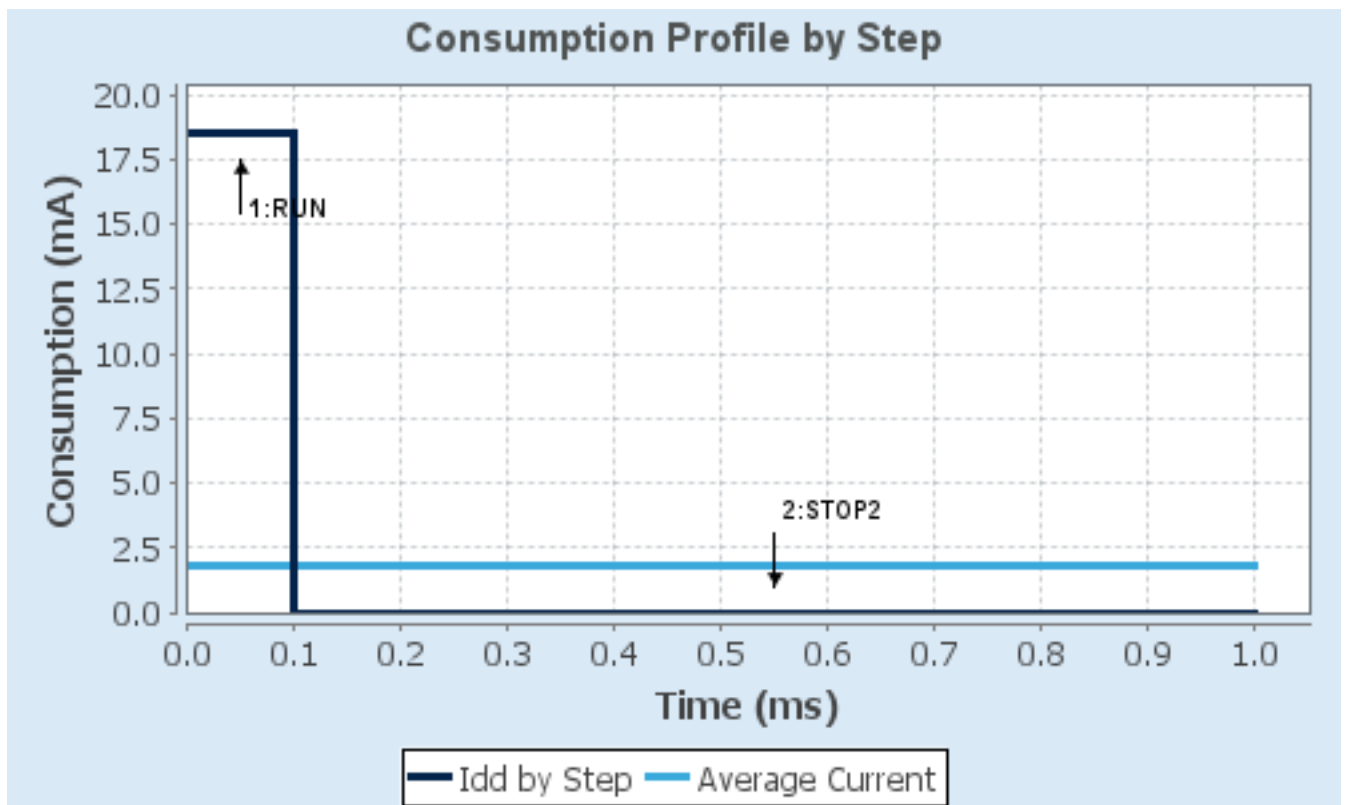
1.4. Sequence

Step	Step1	Step2
Mode	RUN	STOP2
Vdd	3.0	3.0
Voltage Source	Battery	Battery
Range	Range1-Boost	NoRange
Fetch Type	FLASH-SingleBank	n/a
CPU Frequency	120 MHz	0 Hz
Clock Configuration	HSE BYP PLL ART	ALL CLOCKS OFF
Clock Source Frequency	4 MHz	0 Hz
Peripherals		
Additional Cons.	0 mA	0 mA
Average Current	18.5 mA	2.55 μ A
Duration	0.1 ms	0.9 ms
DMIPS	150.0	0.0
Ta Max	102.06	105
Category	In DS Table	In DS Table

1.5. Results

Sequence Time	1 ms	Average Current	1.85 mA
Battery Life	2 months, 15 days, 11 hours	Average DMIPS	150.0 DMIPS

1.6. Chart



2. Peripherals and Middlewares Configuration

2.1. RCC

2.1.1. Parameter Settings:

System Parameters:

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

RCC Parameters:

HSI Calibration Value	64
MSI Calibration Value	0
MSI Auto Calibration	Disabled
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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2.2. SYS

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
GPIO	PE1	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	CPU_BUZZER_DISABLE_OUT

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/PVM1/PVM2/PVM3/PVM4 interrupts through EXTI lines 16/35/36/37/38	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
FPU global interrupt	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	Multimedia	Security	Computing
DMA						
GPIO ✓						
NVIC ✓						
RCC ✓						
SYS ✓						

5. Docs & Resources

Type	Link
BSDL files	https://www.st.com/resource/en/bsdl_model/stm32l4plus_bsdl.zip
IBIS models	https://www.st.com/resource/en/ibis_model/stm32l4plus_ibis.zip
System View Description	https://www.st.com/resource/en/svd/stm32l4plus_svd.zip
Presentations	https://www.st.com/resource/en/product_presentation/stm32-stm8_embedded_software_solutions.pdf
Presentations	https://www.st.com/resource/en/product_presentation/stm32_eval-tools_portfolio.pdf
Presentations	https://www.st.com/resource/en/product_presentation/stm32_stm8_functional-safety-packages.pdf
Presentations	https://www.st.com/resource/en/product_presentation/stm32l4plus_pres.pdf
Presentations	https://www.st.com/resource/en/product_presentation/stm32-stm8_software_development_tools.pdf
Brochures	https://www.st.com/resource/en/brochure/brstm32ulp.pdf
Flyers	https://www.st.com/resource/en/flyer/flstm32l4plus.pdf
Flyers	https://www.st.com/resource/en/flyer/flstm32nucleo.pdf
Flyers	https://www.st.com/resource/en/flyer/flstm32gui.pdf
Product Certifications	https://www.st.com/resource/en/certification_document/psa-certificate_stm32l4.pdf
Application Notes	https://www.st.com/resource/en/application_note/an1181-electrostatic-discharge-sensitivity-measurement-stmicroelectronics.pdf
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for related Tools & Software	guide-for-the-xcubesbsfu-stm32cube-expansion-package-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an5282-using-xcuberccalib-software-to-calibrate-stm32wb-series-internal-rc-oscillators-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an5360-getting-started-with-projects-based-on-the-stm32mp1-series-in-stm32cubeide-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an5361-getting-started-with-projects-based-on-dualcore-stm32h7-microcontrollers-in-stm32cubeide-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an5394-getting-started-with-projects-based-on-the-stm32l5-series-in-stm32cubeide-stmicroelectronics.pdf
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& Software

Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an5472-lpwan-cellular-connectivity-on-stevalstwinkt1b-for-cloud-condition-monitoringbased-applications-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an5857-using-xcuberccalib-software-to-calibrate-stm32c0-series-internal-rc-oscillator-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an4502-stm32-smbuspmbus-expansion-package-for-stm32cube-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an5126-how-to-calibrate-internal-oscillators-on-stm32g0-mcus-stmicroelectronics.pdf
Design Notes & Tips	https://www.st.com/resource/en/design_tip/dt0117-microphone-array-beamforming-in-the-pcm-and-pdm-domain-stmicroelectronics.pdf
Errata Sheets	https://www.st.com/resource/en/errata_sheet/es0393-stm32l4rxxx-and-stm32l4sxxx-device-errata-stmicroelectronics.pdf
Datasheet	https://www.st.com/resource/en/datasheet/dm00366448.pdf
Programming Manuals	https://www.st.com/resource/en/programming_manual/pm0214-stm32-cortexm4-mcus-and-mpus-programming-manual-stmicroelectronics.pdf
Reference Manuals	https://www.st.com/resource/en/reference_manual/rm0432-stm32l4-series-advanced-armbased-32bit-mcus-stmicroelectronics.pdf
Technical Notes & Articles	https://www.st.com/resource/en/technical_note/tn1163-description-of-wlcsp-for-microcontrollers-and-recommendations-for-its-use-stmicroelectronics.pdf
Technical Notes & Articles	https://www.st.com/resource/en/technical_note/tn1204-tape-and-reel-shipping-media-for-stm32-microcontrollers-in-bga-packages-stmicroelectronics.pdf
Technical Notes & Articles	https://www.st.com/resource/en/technical_note/tn1205-tape-and-reel-shipping-media-for-stm8-and-stm32-microcontrollers-in-fpn-packages-stmicroelectronics.pdf
Technical Notes & Articles	https://www.st.com/resource/en/technical_note/tn1206-tape-and-reel-shipping-media-for-stm8-and-stm32-microcontrollers-in-qfp-packages-stmicroelectronics.pdf

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Technical Notes & Articles	https://www.st.com/resource/en/technical_note/tn1433-reference-device-marking-schematics-for-stm32-microcontrollers-and-microprocessors-stmicroelectronics.pdf