
STM32
CubeMX

1. Description

1.1. Project

Project Name	Source_Test
Board Name	NUCLEO-G431RB
Generated with:	STM32CubeMX 6.12.0
Date	01/16/2025

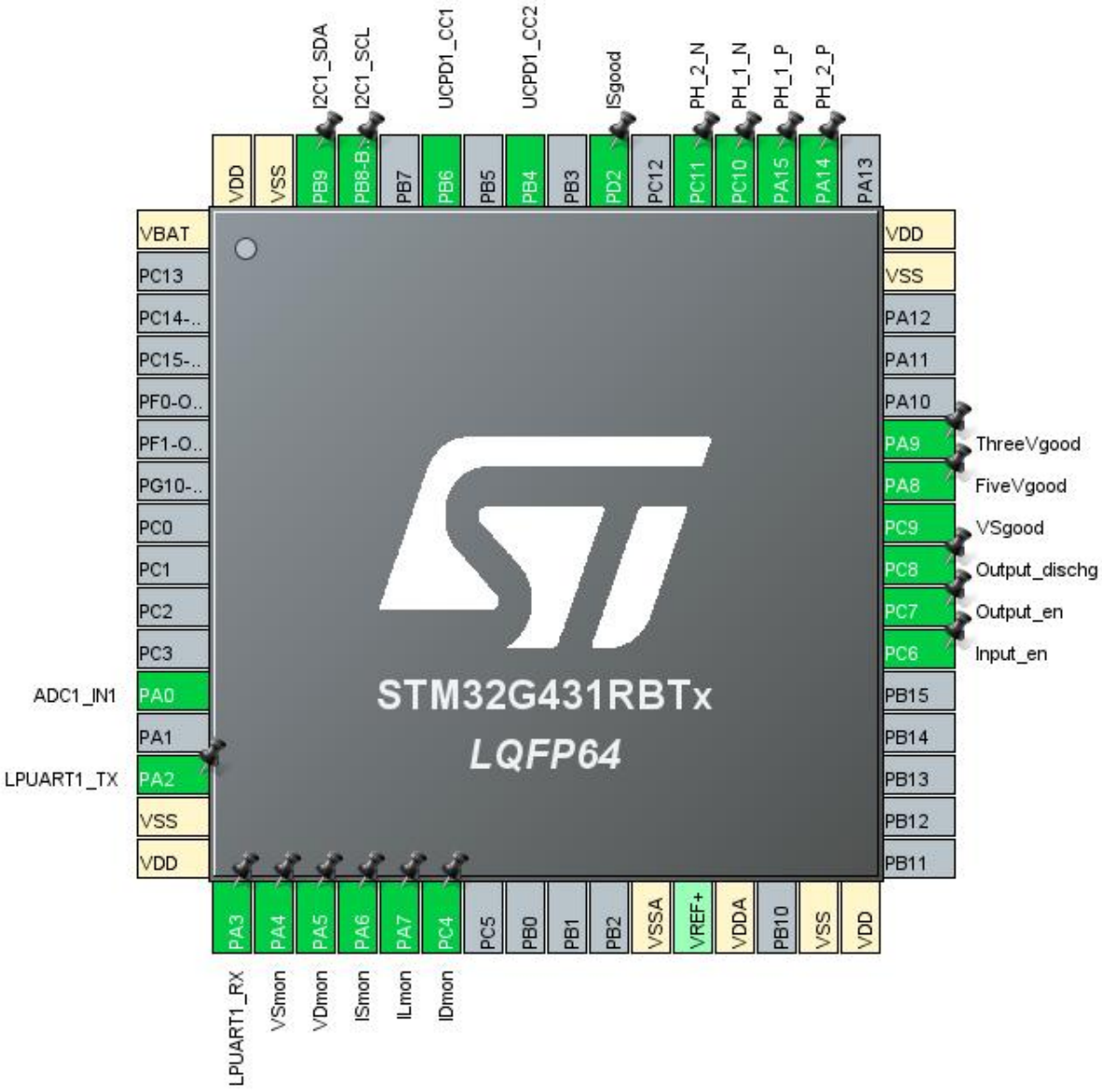
1.2. MCU

MCU Series	STM32G4
MCU Line	STM32G4x1
MCU name	STM32G431RBTx
MCU Package	LQFP64
MCU Pin number	64

1.3. Core(s) information

Core(s)	ARM Cortex-M4

2. Pinout Configuration

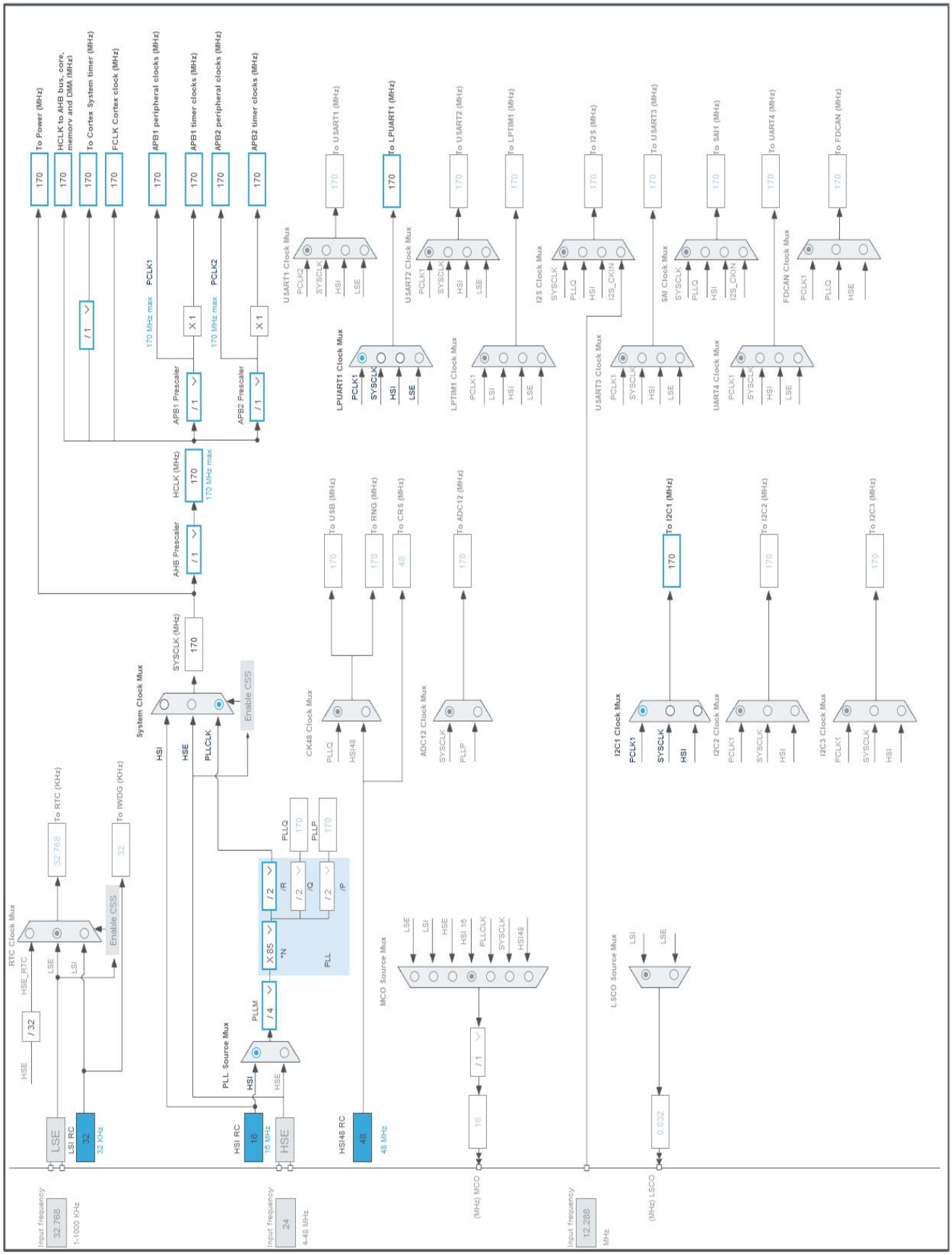


3. Pins Configuration

Pin Number LQFP64	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VBAT	Power		
12	PA0	I/O	ADC1_IN1	
14	PA2	I/O	LPUART1_TX	
15	VSS	Power		
16	VDD	Power		
17	PA3	I/O	LPUART1_RX	
18	PA4	I/O	ADC2_IN17	VSmon
19	PA5	I/O	ADC2_IN13	VDmon
20	PA6	I/O	ADC2_IN3	ISmon
21	PA7	I/O	ADC2_IN4	ILmon
22	PC4	I/O	ADC2_IN5	IDmon
27	VSSA	Power		
29	VDDA	Power		
31	VSS	Power		
32	VDD	Power		
38	PC6 *	I/O	GPIO_Output	Input_en
39	PC7 *	I/O	GPIO_Output	Output_en
40	PC8 *	I/O	GPIO_Output	Output_dischg
41	PC9	I/O	TIM8_BKIN2	VSgood
42	PA8 *	I/O	GPIO_Input	FiveVgood
43	PA9 *	I/O	GPIO_Input	ThreeVgood
47	VSS	Power		
48	VDD	Power		
50	PA14	I/O	TIM8_CH2	PH_2_P
51	PA15	I/O	TIM8_CH1	PH_1_P
52	PC10	I/O	TIM8_CH1N	PH_1_N
53	PC11	I/O	TIM8_CH2N	PH_2_N
55	PD2	I/O	TIM8_BKIN	ISgood
57	PB4	I/O	UCPD1_CC2	
59	PB6	I/O	UCPD1_CC1	
61	PB8-BOOT0	I/O	I2C1_SCL	
62	PB9	I/O	I2C1_SDA	
63	VSS	Power		
64	VDD	Power		

* The pin is affected with an I/O function

4. Clock Tree Configuration



1. Power Consumption Calculator report

1.1. Microcontroller Selection

Series	STM32G4
Line	STM32G4x1
MCU	STM32G431RBTx
Datasheet	DS12589_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

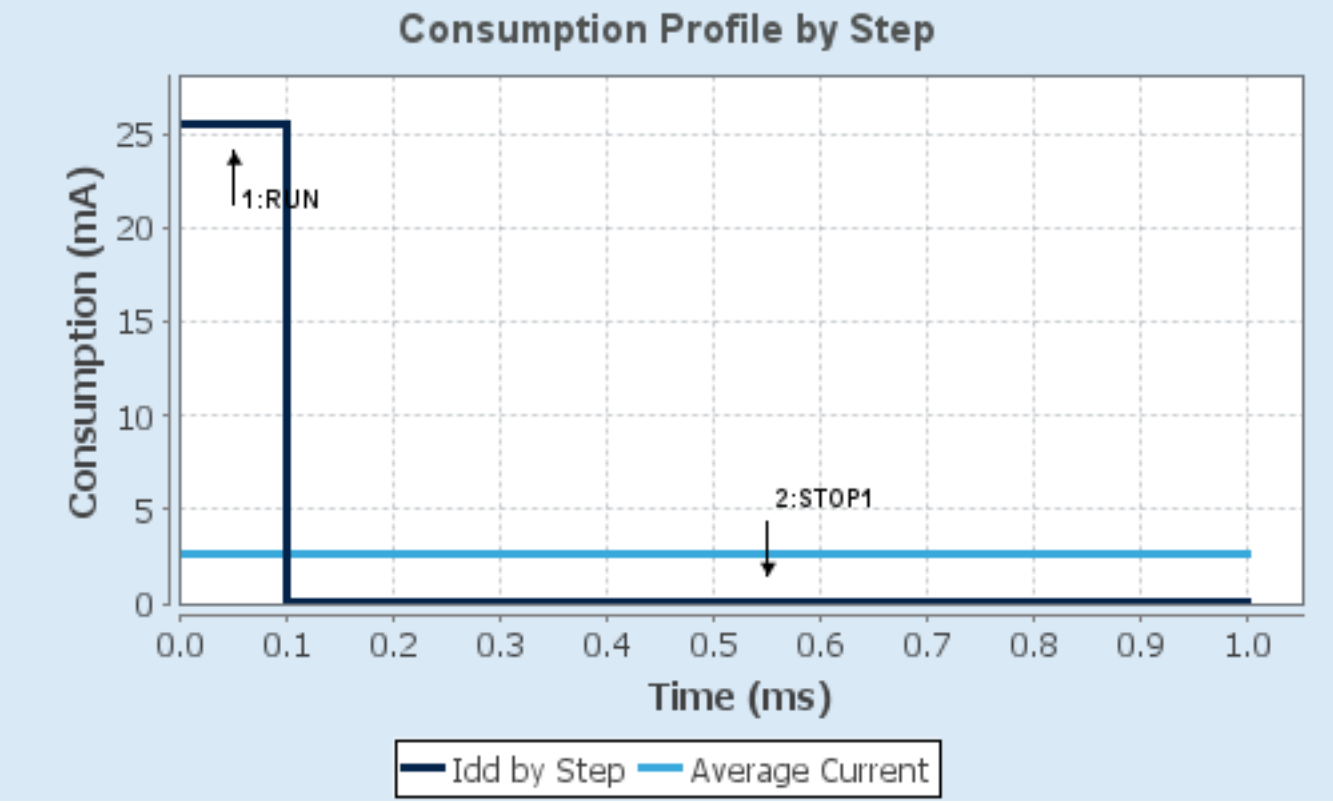
1.4. Sequence

Step	Step1	Step2
Mode	RUN	STOP1
Vdd	3.0	3.0
Voltage Source	Battery	Battery
Range	Range1-Boost	NoRange
Fetch Type	FLASH/ART	NA
CPU Frequency	170 MHz	0 Hz
Clock Configuration	HSE BYP PLL	ALL CLOCKS OFF
Clock Source Frequency	4 MHz	0 Hz
Peripherals		
Additional Cons.	0 mA	0 mA
Average Current	25.5 mA	59 µA
Duration	0.1 ms	0.9 ms
DMIPS	213.0	0.0
Ta Max	125.03	129.99
Category	In DS Table	In DS Table

1.5. Results

Sequence Time	1 ms	Average Current	2.6 mA
Battery Life	1 month, 23 days, 22 hours	Average DMIPS	212.5 DMIPS

1.6. Chart


Consumption Profile by Step
Consumption (mA)
25
20
15
10
5
0
1:RUN
2:STOP1
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Time (ms)
Idd by Step
Average Current

2. Software Project

2.1. Project Settings

Name	Value
Project Name	Source_Test
Project Folder	C:\Users\elect\Documents\GitHub\PD_Charger\STM32CubeIDE\Source_Test
Toolchain / IDE	STM32CubeIDE
Firmware Package Name and Version	STM32Cube FW_G4 V1.6.1
Application Structure	Advanced
Generate Under Root	Yes
Do not generate the main()	No
Minimum Heap Size	0xC00
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	MX_GPIO_Init	GPIO
2	MX_DMA_Init	DMA
3	MX_ADC1_Init	ADC1
4	MX_GUI_INTERFACE_Init	GUI_INTERFACE
5	MX_LPUART1_UART_Init	LPUART1
6	MX_TRACER_EMB_Init	TRACER_EMB
7	MX_UCPD1_Init	UCPD1
8	MX_USBPD_Init	USBPD
9	SystemClock_Config	RCC
10	MX_TIM8_Init	TIM8
11	MX_ADC2_Init	ADC2

Rank	Function Name	Peripheral Instance Name
12	MX_I2C1_Init	I2C1
14	MX_TCPP_Init	STMicroelectronics.X-CUBE-TCPP.4.1.0
15	MX_TCPP_Process	STMicroelectronics.X-CUBE-TCPP.4.1.0

3. Peripherals and Middlewares Configuration

3.1. ADC1

IN1: IN1 Single-ended

3.1.1. Parameter Settings:

ADCs_Common_Settings:

Mode	Independent mode

ADC_Settings:

Clock Prescaler	Synchronous clock mode divided by 4
Resolution	ADC 12-bit resolution
Data Alignment	Right alignment
Gain Compensation	0
Scan Conversion Mode	Disabled
End Of Conversion Selection	End of single conversion
Low Power Auto Wait	Disabled
Continuous Conversion Mode	Disabled
Discontinuous Conversion Mode	Disabled
DMA Continuous Requests	Disabled
Overrun behaviour	Overrun data preserved

ADC_Regular_ConversionMode:

Enable Regular Conversions	Enable
Enable Regular Oversampling	Disable
Number Of Conversion	1
External Trigger Conversion Source	Regular Conversion launched by software
External Trigger Conversion Edge	None
Rank	1
Channel	Channel 1
Sampling Time	2.5 Cycles
Offset Number	No offset

ADC_Injected_ConversionMode:

Enable Injected Conversions	Disable

Analog Watchdog 1:

Enable Analog WatchDog1 Mode	false

Analog Watchdog 2:

Enable Analog WatchDog2 Mode	false

Analog Watchdog 3:

Enable Analog WatchDog3 Mode	false

3.2. ADC2

IN3: IN3 Single-ended

IN4: IN4 Single-ended

IN5: IN5 Single-ended

IN13: IN13 Single-ended

mode: IN17 Single-ended

3.2.1. Parameter Settings:

ADCs_Common_Settings:

Mode	Independent mode

ADC_Settings:

Clock Prescaler	Synchronous clock mode divided by 4
Resolution	ADC 12-bit resolution
Data Alignment	Right alignment
Gain Compensation	0
Scan Conversion Mode	Disabled
End Of Conversion Selection	End of single conversion
Low Power Auto Wait	Disabled
Continuous Conversion Mode	Disabled
Discontinuous Conversion Mode	Disabled
DMA Continuous Requests	Disabled
Overrun behaviour	Overrun data preserved

ADC_Regular_ConversionMode:

Enable Regular Conversions	Enable
Enable Regular Oversampling	Disable
Number Of Conversion	1
External Trigger Conversion Source	Regular Conversion launched by software
External Trigger Conversion Edge	None
Rank	1
Channel	**Channel 5 ***
Sampling Time	2.5 Cycles
Offset Number	No offset

ADC_Injected_ConversionMode:

Enable Injected Conversions	Disable

Analog Watchdog 1:

Enable Analog WatchDog1 Mode	false

Analog Watchdog 2:

Enable Analog WatchDog2 Mode	false

Analog Watchdog 3:

Enable Analog WatchDog3 Mode	false

3.3. GUI_INTERFACE

mode: Enable

3.3.1. Parameter Settings:

Version	1.13.0
HWBoardVersionName	**G4_SRC1M1 ***
PDTypeName	**MB1360 ***

3.4. I2C1

I2C: I2C

3.4.1. Parameter Settings:

Timing configuration:

Custom Timing	Disabled
I2C Speed Mode	Standard Mode
I2C Speed Frequency (KHz)	100
Rise Time (ns)	100
Fall Time (ns)	100
Coefficient of Digital Filter	0
Analog Filter	Enabled
Timing	**0x40B285C2 ***

Slave Features:

Clock No Stretch Mode	Disabled
General Call Address Detection	Disabled
Primary Address Length selection	7-bit
Dual Address Acknowledged	Disabled
Primary slave address	0

3.5. LPUART1

Mode: Asynchronous

3.5.1. Parameter Settings:

Basic Parameters:

Baud Rate	921600
Word Length	**7 Bits (including Parity) ***
Parity	None
Stop Bits	1

Advanced Parameters:

Data Direction	Receive and Transmit
Single Sample	Disable
ClockPrescaler	1
Fifo Mode	FIFO mode disable
Txfifo Threshold	1 eighth full configuration
Rxfifo Threshold	1 eighth full configuration

Advanced Features:

TX Pin Active Level Inversion	Disable
RX Pin Active Level Inversion	Disable
Data Inversion	Disable
TX and RX pins Swapping	Disable
Overrun	Enable
DMA on RX Error	Enable
MSB First	Disable

3.6. NUCLEO-G431RB
mode: Human Machine Interface

3.6.1. Human Machine Interface:

Led:

USER LED GREEN (LD1)	false

Button:

USER BUTTON	Disable

VCOM:

Virtual Com Port	false

Demonstration code:

Generate demonstration code	Disabled

3.7. NUCLEO-G431RB
mode: Human Machine Interface

3.7.1. Human Machine Interface:

Led:

USER LED GREEN (LD1)	false

Button:

USER BUTTON	Disable

VCOM:

Virtual Com Port	false

Demonstration code:

Generate demonstration code	Disabled

3.8. RCC

3.8.1. Parameter Settings:

System Parameters:

VDD voltage (V)	3.3
Instruction Cache	Enabled
Prefetch Buffer	Disabled
Data Cache	Enabled
Flash Latency(WS)	4 WS (5 CPU cycle)

RCC Parameters:

HSI Calibration Value	64
HSE Startup Timout Value (ms)	100
LSE Startup Timout Value (ms)	5000

Power Parameters:

Power Regulator Voltage Scale	Power Regulator Voltage Scale 1 boost

Peripherals Clock Configuration:

Generate the peripherals clock configuration	TRUE

3.9. SYS

Timebase Source: SysTick

mode: save power of non-active UCPD - deactive Dead Battery pull-up

3.10. TIM8

Clock Source : Internal Clock

Channel1: PWM Generation CH1 CH1N

Channel2: PWM Generation CH2 CH2N
mode: Activate-Break-Input
mode: Activate-Break-Input-2

3.10.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	0
Counter Mode	Up
Dithering	Disable
Counter Period (AutoReload Register - 16 bits value)	**169 ***
Internal Clock Division (CKD)	No Division
Repetition Counter (RCR - 16 bits value)	0
auto-reload preload	Disable

Trigger Output (TRGO) Parameters:

Master/Slave Mode (MSM bit)	Disable (Trigger input effect not delayed)
Trigger Event Selection TRGO	Reset (UG bit from TIMx_EGR)
Trigger Event Selection TRGO2	Reset (UG bit from TIMx_EGR)

Break And Dead Time management - BRK Configuration:

BRK State	Enable
BRK Polarity	High
BRK Filter (4 bits value)	0
BRK Sources Configuration	
- Digital Input	Enable
Break_IO mode selection	Break IO is an Input
Digital Input Polarity	**Polarity Low ***
- COMP1	Disable
- COMP2	Disable
- COMP3	Disable
- COMP4	Disable

Break And Dead Time management - BRK2 Configuration:

BRK2 State	Enable
BRK2 Polarity	High
BRK2 Filter (4 bits value)	0
BRK2 Sources Configuration	
- Digital Input	Enable
Break2 IO mode selection	Break2 IO is an Input
Digital Input Polarity	Polarity High
- COMP1	Disable
- COMP2	Disable
- COMP3	Disable
- COMP4	Disable

Break And Dead Time management - Output Configuration:

Automatic Output State	**Enable ***
Off State Selection for Run Mode (OSSR)	Enable
Off State Selection for Idle Mode (OSSI)	Enable
Lock Configuration	Off
DeadTime Preload	Disable
Dead Time	**8 ***
Asymmetrical DeadTime	Disable
Falling Dead Time	0

Clear Input:

Clear Input Source	Disable

PWM Generation Channel 1 and 1N:

Mode	PWM mode 1
Pulse (16 bits value)	**84 ***
Output compare preload	Enable
Fast Mode	Disable
CH Polarity	High
CHN Polarity	High
CH Idle State	Reset
CHN Idle State	Reset

PWM Generation Channel 2 and 2N:

Mode	PWM mode 1
Pulse (16 bits value)	**10 ***
Output compare preload	Enable
Fast Mode	Disable
CH Polarity	High
CHN Polarity	High
CH Idle State	Reset
CHN Idle State	Reset

3.11. TRACER_EMB

Uart Trace Source: LPUART1

3.11.1. Parameter Settings:

Version	TRACER_EMB
TRACER_EMB request LPUART1 TX DMA	enabled
TRACER_EMB request LPUART1 NVIC	enabled

3.12. UCPD1

UCPD Mode: Source

3.12.1. Parameter Settings:

Version	1.0

3.13. FREERTOS

Interface: CMSIS_V1

3.13.1. Config parameters:

API:

FreeRTOS API	CMSIS v1

Versions:

FreeRTOS version	10.3.1
CMSIS-RTOS version	1.02

MPU/FPU:

ENABLE_MPU	Disabled
ENABLE_FPU	Disabled

Kernel settings:

USE_PREEMPTION	Enabled
CPU_CLOCK_HZ	SystemCoreClock
TICK_RATE_HZ	1000
MAX_PRIORITIES	7
MINIMAL_STACK_SIZE	128
MAX_TASK_NAME_LEN	16
USE_16_BIT_TICKS	Disabled
IDLE_SHOULD_YIELD	Enabled
USE_MUTEXES	Enabled
USE_RECURSIVE_MUTEXES	Disabled
USE_COUNTING_SEMAPHORES	Disabled
QUEUE_REGISTRY_SIZE	8
USE_APPLICATION_TASK_TAG	Disabled
ENABLE_BACKWARD_COMPATIBILITY	Enabled
USE_PORT_OPTIMISED_TASK_SELECTION	Enabled
USE_TICKLESS_IDLE	Disabled
USE_TASK_NOTIFICATIONS	Enabled
RECORD_STACK_HIGH_ADDRESS	Disabled

Memory management settings:

Memory Allocation	Dynamic
TOTAL_HEAP_SIZE	**7000 ***
Memory Management scheme	heap_4

Hook function related definitions:

USE_IDLE_HOOK	Disabled
USE_TICK_HOOK	Disabled
USE_MALLOC_FAILED_HOOK	Disabled
USE_DAEMON_TASK_STARTUP_HOOK	Disabled
CHECK_FOR_STACK_OVERFLOW	Disabled

Run time and task stats gathering related definitions:

GENERATE_RUN_TIME_STATS	Disabled
USE_TRACE_FACILITY	Disabled
USE_STATS_FORMATTING_FUNCTIONS	Disabled

Co-routine related definitions:

USE_CO_ROUTINES	Disabled
MAX_CO_ROUTINE_PRIORITIES	2

Software timer definitions:

USE_TIMERS	Disabled

Interrupt nesting behaviour configuration:

LIBRARY_LOWEST_INTERRUPT_PRIORITY	15
LIBRARY_MAX_SYSCALL_INTERRUPT_PRIORITY	**3 ***

Added with 10.2.1 support:

MESSAGE_BUFFER_LENGTH_TYPE	size_t
USE_POSIX_ERRNO	Disabled

3.13.2. Include parameters:

Include definitions:

vTaskPrioritySet	Enabled
uxTaskPriorityGet	Enabled
vTaskDelete	Enabled
vTaskCleanUpResources	Disabled
vTaskSuspend	Enabled
vTaskDelayUntil	Disabled
vTaskDelay	Enabled
xTaskGetSchedulerState	Enabled
xTaskResumeFromISR	Enabled
xQueueGetMutexHolder	Disabled
xSemaphoreGetMutexHolder	Disabled
pcTaskGetTaskName	Disabled
uxTaskGetStackHighWaterMark	Disabled

xTaskGetCurrentTaskHandle	Disabled
eTaskGetState	Enabled
xEventGroupSetBitFromISR	Disabled
xTimerPendFunctionCall	Disabled
xTaskAbortDelay	Disabled
xTaskGetHandle	Disabled
uxTaskGetStackHighWaterMark2	Disabled

3.13.3. Advanced settings:

Newlib settings (see parameter description first):

USE_NEWLIB_REENTRANT	Disabled

Project settings (see parameter description first):

Use FW pack heap file	Enabled

3.14. STMicroelectronics.X-CUBE-TCPP.4.1.0
mode: DeviceJjUSBPDOoApplication
mode: BoardOoPartJjtcpp0203
mode: BoardOoSupportJjXAaNUCLEOAaSRC1M1

3.15. USBPD
mode: Port Configuration
Stack Configuration: Full Stack
Timer service Source: TIM1
mode: Tracer Source (TRACER_EMB)

3.15.1. Parameter Settings:

USBPD needs:

USBPD request UCPD1 NVIC	enabled
USBPD request UCPD1 DMA	enabled

3.15.2. DPM Core Parameters:

USB IF and Manufacturer ID:

Vendor ID	**0x0483 ***
Product ID	0x0002
XID	0xF0000003

3.15.3. PDO Sources:

Number of PDO Source:

Number of PDO to define	1

Generic Source Parameters:

Unchunked Extended Messages Supported	Not supported
Dual-Role Data	Supported
USB Communication Capable	Not supported
Unconstrained Power	Not supported
USB Suspend Supported	Not supported
Dual Role Power	Not supported

PDO 0:

PDO type	Fixed Supply (Vmin=Vmax)
Voltage (mV)	5000
Current (mA)	100
Peak Current	Peak equal

3.15.4. Stack Port 0 Parameters:

Port Configuration:

UCPD Instance	UCPD1
DMA Request RX for UCPD Port 0	UCPD1_RX_DMA1_Channel_4
DMA Request TX for UCPD Port 0	UCPD1_TX_DMA1_Channel_2

Start of Packet Parameters:

SOP	Supported
SOP'	Not supported
SOP''	Not supported
SOP' debug	Not supported
SOP'' debug	Not supported

Port 0 Parameters:

Specification revision value	Revision 3 (PD3)
Default port role	Source
Port role swap	Not supported
Data role swap to DFP	Supported
Data role swap to UFP	Supported
Vendor defined messages	Not supported
Discover Identity response	Not supported
Discover Identity sent	Not supported
Ping	Not supported
Caps counter	Not supported

PD Revision 3 specific parameters:

Unchunk mode	Not supported
Fast role swap	Not supported
Higher Capability	Not supported
USB Communication Capable	Not supported
Unconstrained Power	Not supported
USB Suspend Supported	Not supported
PPS message	Not supported
Source Capabilities Extended message	Not supported
Alert message	Not supported
Status message	Not supported
Manufacturer Info message	Not supported
Country Codes message	Not supported
Country Info message	Not supported
Security Response message	Not supported
Firmware update Response message	Not supported
Get Battery Capabitity and Status messages	Not supported

Cable Detection Parameters:

CAD default resistor	Default USB Power
CAD accessory	Not supported

3.15.5. PDO General Definitions:

Number of Source PDOs for port 0	1

3.15.6. User Port 0 Parameters:

Port 0 Parameters:

Data role swap	Not supported
VCONN swap	Not supported

*** User modified value**

4. System Configuration

4.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
ADC1	PA0	ADC1_IN1	Analog mode	No pull-up and no pull-down	n/a	
ADC2	PA4	ADC2_IN17	Analog mode	No pull-up and no pull-down	n/a	VSmon
	PA5	ADC2_IN13	Analog mode	No pull-up and no pull-down	n/a	VDmon
	PA6	ADC2_IN3	Analog mode	No pull-up and no pull-down	n/a	ISmon
	PA7	ADC2_IN4	Analog mode	No pull-up and no pull-down	n/a	ILmon
	PC4	ADC2_IN5	Analog mode	No pull-up and no pull-down	n/a	IDmon
I2C1	PB8-BOOT0	I2C1_SCL	Alternate Function Open Drain	No pull-up and no pull-down	Low	
	PB9	I2C1_SDA	Alternate Function Open Drain	No pull-up and no pull-down	Low	
LPUART1	PA2	LPUART1_TX	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PA3	LPUART1_RX	Alternate Function Push Pull	No pull-up and no pull-down	Low	
TIM8	PC9	TIM8_BKIN2	Alternate Function Open Drain	No pull-up and no pull-down	Low	VSgood
	PA14	TIM8_CH2	Alternate Function Push Pull	No pull-up and no pull-down	Low	PH_2_P
	PA15	TIM8_CH1	Alternate Function Push Pull	No pull-up and no pull-down	Low	PH_1_P
	PC10	TIM8_CH1N	Alternate Function Push Pull	No pull-up and no pull-down	Low	PH_1_N
	PC11	TIM8_CH2N	Alternate Function Push Pull	No pull-up and no pull-down	Low	PH_2_N
	PD2	TIM8_BKIN	Alternate Function Open Drain	**Pull-up ***	Low	ISgood
UCPD1	PB4	UCPD1_CC2	Analog mode	No pull-up and no pull-down	n/a	
	PB6	UCPD1_CC1	Analog mode	No pull-up and no pull-down	n/a	
GPIO	PC6	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	Input_en
	PC7	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	Output_en
	PC8	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	Output_dischg
	PA8	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	FiveVgood
	PA9	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	ThreeVgood

4.2. DMA configuration

DMA request	Stream	Direction	Priority
UCPD1_RX	DMA1_Channel4	Peripheral To Memory	Low
UCPD1_TX	DMA1_Channel2	Memory To Peripheral	Low
LPUART1_TX	DMA1_Channel1	Memory To Peripheral	Low

UCPD1_RX: DMA1_Channel4 DMA request Settings:

Mode:	Normal
Peripheral Increment:	Disable
Memory Increment:	**Enable ***
Peripheral Data Width:	Byte
Memory Data Width:	Byte

UCPD1_TX: DMA1_Channel2 DMA request Settings:

Mode:	Normal
Peripheral Increment:	Disable
Memory Increment:	**Enable ***
Peripheral Data Width:	Byte
Memory Data Width:	Byte

LPUART1_TX: DMA1_Channel1 DMA request Settings:

Mode:	Normal
Peripheral Increment:	Disable
Memory Increment:	**Enable ***
Peripheral Data Width:	Byte
Memory Data Width:	Byte

4.3. NVIC configuration

4.3.1. 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	15	0
System tick timer	true	15	0
DMA1 channel1 global interrupt	true	3	0
DMA1 channel2 global interrupt	true	3	0
DMA1 channel4 global interrupt	true	3	0
UCPD1 interrupt / UCPD1 wake-up interrupt through EXTI line 43	true	3	0
LPUART1 global interrupt	true	3	0
PVD/PVM1/PVM2/PVM3/PVM4 interrupts through EXTI lines 16/38/39/40/41	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
ADC1 and ADC2 global interrupt	unused		
I2C1 event interrupt / I2C1 wake-up interrupt through EXTI line 23	unused		
I2C1 error interrupt	unused		
TIM8 break interrupt	unused		
TIM8 update interrupt	unused		
TIM8 trigger and commutation interrupts	unused		
TIM8 capture compare interrupt	unused		
FPU global interrupt	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
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	false	false

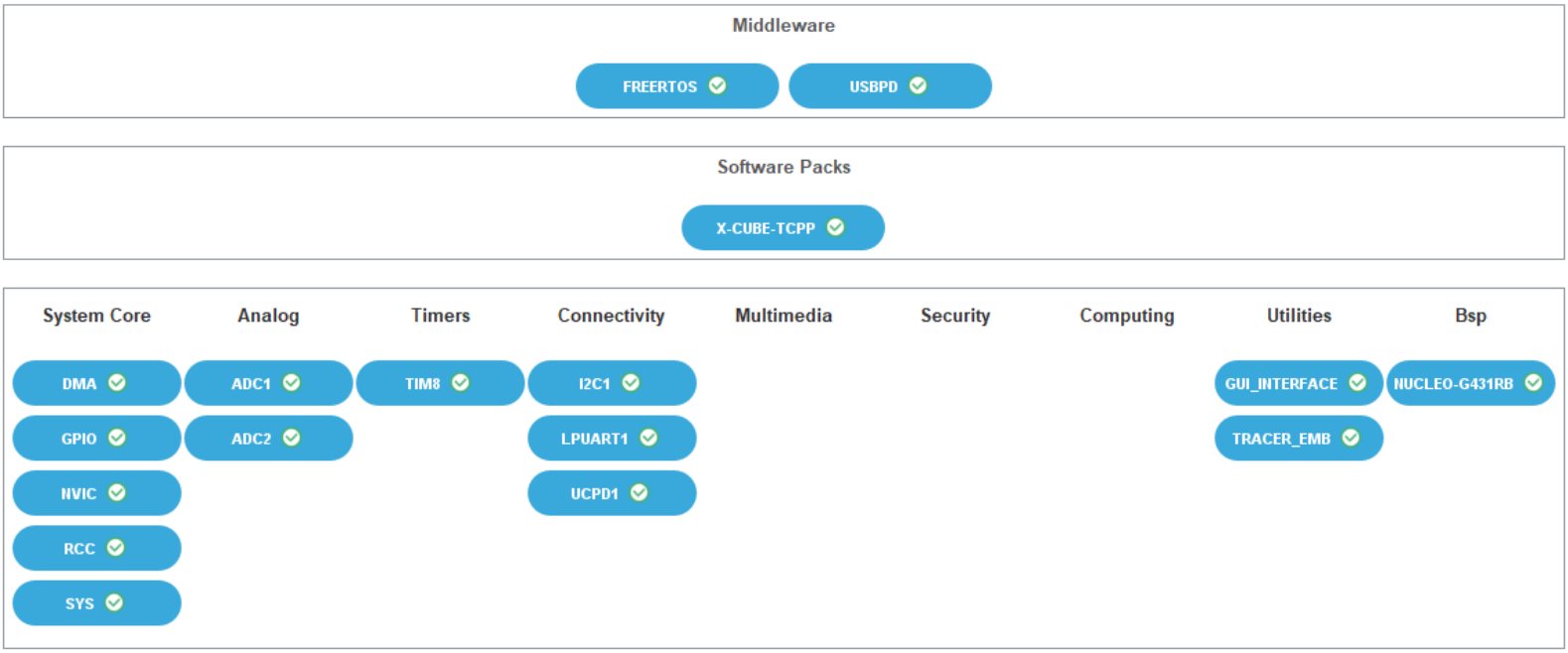
Enabled interrupt Table	Select for init sequence ordering	Generate IRQ handler	Call HAL handler
Debug monitor	false	true	false
Pendable request for system service	false	false	false
System tick timer	false	true	true
DMA1 channel1 global interrupt	false	true	true
DMA1 channel2 global interrupt	false	true	true
DMA1 channel4 global interrupt	false	true	true
UCPD1 interrupt / UCPD1 wake-up interrupt through EXTI line 43	false	true	false
LPUART1 global interrupt	false	true	true

*** User modified value**

5. System Views

5.1. Category view

5.1.1. Current



6. Software Pack Report

6.1. Software Pack selected

Vendor	Name	Version	Component
STMicroelectronics	X-CUBE-TCPP	4.1.0	Class : Device Group : Application Variant : Source Version : 4.1.0 Class : Board Part Group : tcpp0203 SubGroup : tcpp0203 Version : 1.2.3 Class : Board Support Group : X-NUCLEO-SRC1M1 SubGroup : Common Version : 1.2.1

7. Docs & Resources

Type	Link
BSDL files	https://www.st.com/resource/en/bsdl_model/stm32g4_bsdl.zip
IBIS models	https://www.st.com/resource/en/ibis_model/stm32g4_ibis.zip
System View Description	https://www.st.com/resource/en/svd/stm32g4_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/stm32-usb-c-pd-solutions-presentation.pdf
Presentations	https://www.st.com/resource/en/product_presentation/stm32-stm8_software_development_tools.pdf
Presentations	https://www.st.com/resource/en/product_presentation/microcontrollers-stm32-family-overview.pdf
Presentations	https://www.st.com/resource/en/product_presentation/microcontrollers-stm32g4-series-product-overview.pdf
Brochures	https://www.st.com/resource/en/brochure/products-and-solutions-for-plcs-and-smart-i-os.pdf
Flyers	https://www.st.com/resource/en/flyer/flstm32g4.pdf
Flyers	https://www.st.com/resource/en/flyer/flstm32nucleo.pdf
Flyers	https://www.st.com/resource/en/flyer/flstm32trust.pdf
Flyers	https://www.st.com/resource/en/flyer/fldpstpfc11120.pdf
Application Notes	https://www.st.com/resource/en/application_note/an1709-emc-design-guide-for-stm8-stm32-and-legacy-mcus-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an2606-stm32-microcontroller-system-memory-boot-mode-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an2639-soldering-

	recommendations-and-package-information-for-leadfree-ecopack-mcus-and-mpus-stmicroelectronics.pdf
Application Notes	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
Application Notes	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
Application Notes	https://www.st.com/resource/en/application_note/an4232-getting-started-with-analog-comparators-for-stm32f3-series-and-stm32g4-series-devices-stmicroelectronics.pdf
Application Notes	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/an4296-use-stm32f3stm32g4-ccm-sram-with-iar-embedded-workbench-keil-mdkarm-stmicroelectronics-stm32cubeide-and-other-gnubased-toolchains-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an4566-extending-the-dac-performance-of-stm32-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
Application Notes	https://www.st.com/resource/en/application_note/an4750-handling-of-soft-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
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
Application Notes	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
Application Notes	https://www.st.com/resource/en/application_note/an5093-getting-started-with-stm32g4-series--hardware-development-boards-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an5306-operational-amplifier-opamp-usage-in-stm32g4-series-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an5310-guideline-for-using-analog-features-of-stm32g4-series-versus-stm32f3-series-devices-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an5315-stm32cube-firmware-examples-for-stm32g4-series-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an5346-stm32g4-adc-use-tips-and-recommendations-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an5094-migrating-between-stm32f334303-lines-and-stm32g431xxg474xxg491xx-microcontrollers-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an5738-stm32g4-series-lifetime-estimates-stmicroelectronics.pdf
Application Notes	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
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
Application Notes	https://www.st.com/resource/en/application_note/an4838-introduction-to-memory-protection-unit-management-on-stm32-mcus-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an5325-how-to-use-the-cordic-to-perform-mathematical-functions-on-stm32-mcus-

	stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an5225-introduction-to-usb-typec-power-delivery-for-stm32-mcus-and-mpus-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an4894-how-to-use-eeprom-emulation-on-stm32-mcus-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an2834-how-to-optimize-the-adc-accuracy-in-the-stm32-mcus-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an5537-how-to-use-adc-oversampling-techniques-to-improve-signaltonoise-ratio-on-stm32-mcus-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an5036-guidelines-for-thermal-management-on-stm32-applications-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an5405-how-to-use-fdcan-bootloader-protocol-on-stm32-mcus-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an5978-introduction-to-mb1971-llc-hat-12-v-to-75-v1-a-for-f334-g474-nucleo-board-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an5690-how-to-use-vrefbuf-peripheral-on-stm32-mcus-and-mpus-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an4230-introduction-to-random-number-generation-validation-using-the-nist-statistical-test-suite-for-stm32-mcus-and-mpus-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an2548-introduction-to-dma-controller-for-stm32-mcus-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an4013-introduction-to-timers-for-stm32-mcus-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an4277-how-to-use-pwm-shutdown-for-motor-control-and-digital-power-conversion-on-stm32-mcus-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an4635-how-to-optimize-lpuart-power-consumption-on-stm32-mcus-stmicroelectronics.pdf

Application Notes	https://www.st.com/resource/en/application_note/an4759-introduction-to-using-the-hardware-realtime-clock-rtc-and-the-tamper-management-unit-tamp-with-stm32-mcus-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an4908-getting-started-with-usart-automatic-baud-rater-detection-for-stm32-mcus-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an5156-introduction-to-security-for-stm32-mcus-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an5224-introduction-to-dmamux-for-stm32-mcus-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an5543-guidelines-for-enhanced-spi-communication-on-stm32-mcus-and-mpus-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an5348-introduction-to-fdcan-peripherals-for-stm32-mcus-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an1202_freertos_guide-freertos-guide-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an1602_semihosting_in_truestudio-how-to-do-semihosting-in-truestudio-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an1801_stm32cubeprogrammer_in_truestudio-installing-stm32cubeprogrammer-in-truestudio-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/atollic_editing_keyboard_shortcuts-atollic-editing-keyboard-shortcuts-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/iar_to_atollic_truestudio_migration_guide-truestudio-for-arm-migration-guide-iar-embedded-workbench-to-truestudio-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/stm32cubemx_installation_in_truestudio-stm32cubemx-installation-in-truestudio-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an4435-guidelines-for-

for related Tools & Software	obtaining-ulcsaiec-607301603351-class-b-certification-in-any-stm32-application-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an4657-stm32-inapplication-programming-iap-using-the-usart-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an4841-digital-signal-processing-for-stm32-microcontrollers-using-cmsis-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an5056-integration-guide-for-the-xcubesbsfu-stm32cube-expansion-package-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an5305-digital-filter-implementation-with-the-fmac-using-stm32cubeg4-mcu-package-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an5315-stm32cube-firmware-examples-for-stm32g4-series-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an5345-highbrightness-rgb-led-control-using-the-bg474edpow1-discovery-kit-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
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an5418-how-to-build-a-simple-usbpd-sink-application-with-stm32cubemx-stmicroelectronics.pdf
Application Notes for related Tools	https://www.st.com/resource/en/application_note/an5426-migrating-graphics-middleware-projects-from-stm32cubemx-540-to-stm32cubemx-

& Software	550-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an5464-position-control-of-a-threephase-permanent-magnet-motor-using-xcubemcsdk-or-xcubemcsdkful-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an5564-getting-started-with-projects-based-on-dualcore-stm32wl-microcontrollers-in-stm32cubeide-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an5698-adapting-the-xcubestl-functional-safety-package-for-stm32-iec-61508-compliant-to-other-safety-standards-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an5731-stm32cubemx-and-stm32cubeide-threadsafe-solution-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an5785-boost-voltage-mode-on-bg474edpow1-discovery-kit-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an5788-stm32-digital-power-pid-and-iir-filters-for-smps-control-design-and-comparison-on-bg414edpow1-discovery-kit-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/an5952-how-to-use-cmake-in-stm32cubeide-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an4635-how-to-optimize-lpuart-power-consumption-on-stm32-mcus-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an5054-how-to-perform-secure-programming-using-stm32cubeprogrammer-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an5496-guidelines-for-the-buck-voltage-mode-on-the-bg474edpow1-discovery-kit-stmicroelectronics.pdf

Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an5497-introduction-to-the-buck-current-mode-with-the-bg474edpow1-discovery-kit-stmicroelectronics.pdf
Errata Sheets	https://www.st.com/resource/en/errata_sheet/es0431-stm32g431xx441xx-device-errata-stmicroelectronics.pdf
Datasheet	https://www.st.com/resource/en/datasheet/dm00507199.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/rm0440-stm32g4-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
Technical Notes & Articles	https://www.st.com/resource/en/technical_note/tn1207-tape-and-reel-shipping-media-for-stm8-and-stm32-microcontrollers-in-so-packages-stmicroelectronics.pdf
Technical Notes & Articles	https://www.st.com/resource/en/technical_note/tn1208-tape-and-reel-shipping-media-for-stm8-and-stm32-microcontrollers-in-tssop-and-ssop-packages-stmicroelectronics.pdf
Technical Notes & Articles	https://www.st.com/resource/en/technical_note/tn1433-reference-device-marking-schematics-for-stm32-microcontrollers-and-microprocessors-stmicroelectronics.pdf
Technical Notes & Articles	https://www.st.com/resource/en/technical_note/tn1489-security-bulletin-tn1489stpsirt-physical-attacks-on-stm32-and-stm32cube-firmware-stmicroelectronics.pdf

User Manuals	https://www.st.com/resource/en/user_manual/um3167-stm32g4-series-ulcsaiec-607301603351-selftest-library-user-guide-stmicroelectronics.pdf