
STM32
CubeMX

1. Description

1.1. Project

Project Name	Documents
Board Name	custom
Generated with:	STM32CubeMX 6.8.1
Date	06/13/2023

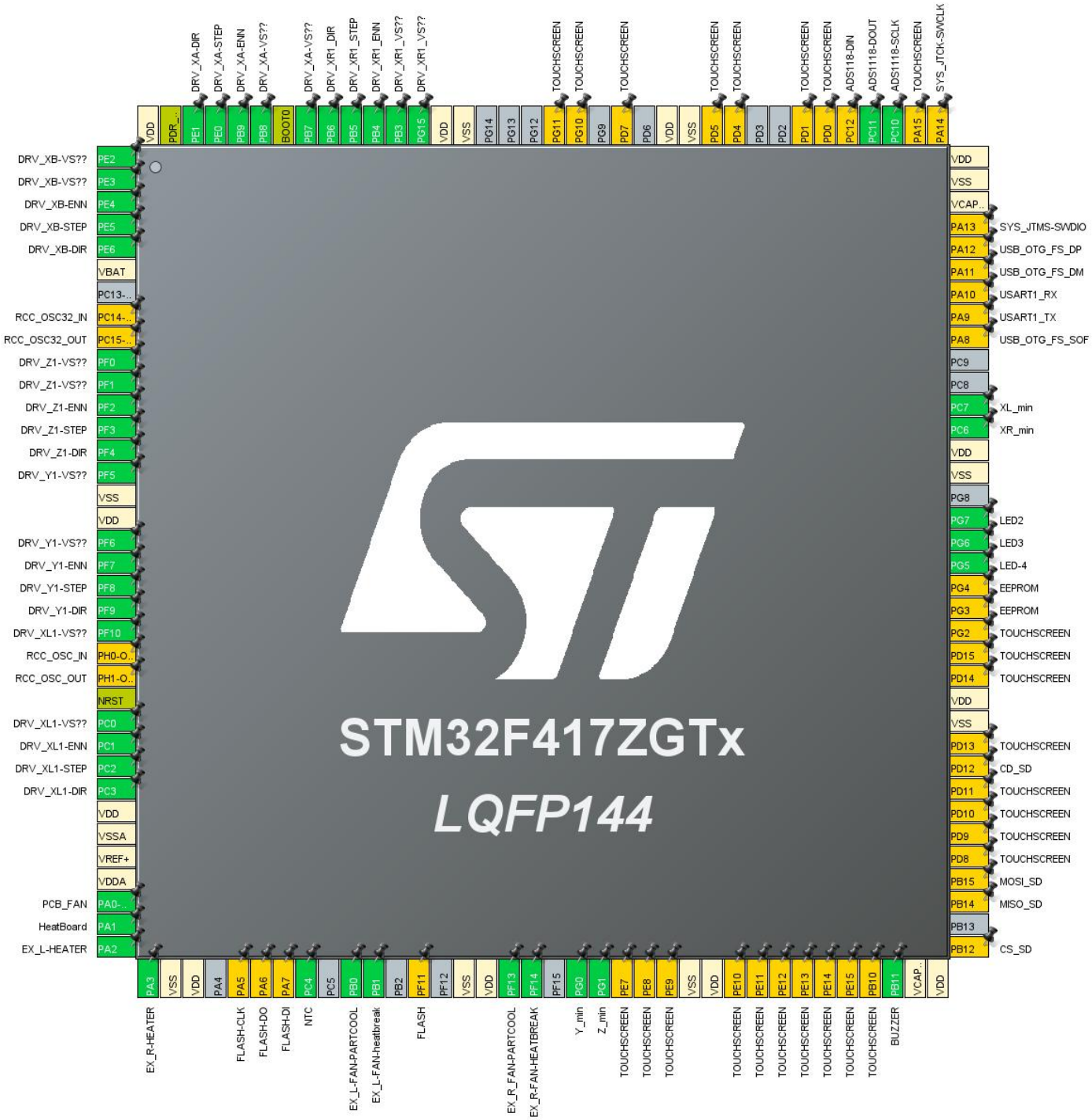
1.2. MCU

MCU Series	STM32F4
MCU Line	STM32F407/417
MCU name	STM32F417ZGTx
MCU Package	LQFP144
MCU Pin number	144

1.3. Core(s) information

Core(s)	Arm Cortex-M4

2. Pinout Configuration



3. Pins Configuration

Pin Number LQFP144	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	PE2 *	I/O	GPIO_Output	DRV_XB-VS??
2	PE3 *	I/O	GPIO_Output	DRV_XB-VS??
3	PE4 *	I/O	GPIO_Output	DRV_XB-ENN
4	PE5 *	I/O	GPIO_Output	DRV_XB-STEP
5	PE6 *	I/O	GPIO_Output	DRV_XB-DIR
6	VBAT	Power		
8	PC14-OSC32_IN **	I/O	RCC_OSC32_IN	
9	PC15-OSC32_OUT **	I/O	RCC_OSC32_OUT	
10	PF0 *	I/O	GPIO_Output	DRV_Z1-VS??
11	PF1 *	I/O	GPIO_Output	DRV_Z1-VS??
12	PF2 *	I/O	GPIO_Output	DRV_Z1-ENN
13	PF3 *	I/O	GPIO_Output	DRV_Z1-STEP
14	PF4 *	I/O	GPIO_Output	DRV_Z1-DIR
15	PF5 *	I/O	GPIO_Output	DRV_Y1-VS??
16	VSS	Power		
17	VDD	Power		
18	PF6 *	I/O	GPIO_Output	DRV_Y1-VS??
19	PF7 *	I/O	GPIO_Output	DRV_Y1-ENN
20	PF8 *	I/O	GPIO_Output	DRV_Y1-STEP
21	PF9 *	I/O	GPIO_Output	DRV_Y1-DIR
22	PF10 *	I/O	GPIO_Output	DRV_XL1-VS??
23	PH0-OSC_IN **	I/O	RCC_OSC_IN	
24	PH1-OSC_OUT **	I/O	RCC_OSC_OUT	
25	NRST	Reset		
26	PC0 *	I/O	GPIO_Output	DRV_XL1-VS??
27	PC1 *	I/O	GPIO_Output	DRV_XL1-ENN
28	PC2 *	I/O	GPIO_Output	DRV_XL1-STEP
29	PC3 *	I/O	GPIO_Output	DRV_XL1-DIR
30	VDD	Power		
31	VSSA	Power		
32	VREF+	Power		
33	VDDA	Power		
34	PA0-WKUP *	I/O	GPIO_Output	PCB_FAN
35	PA1 *	I/O	GPIO_Output	HeatBoard
36	PA2 *	I/O	GPIO_Output	EX_L-HEATER
37	PA3 *	I/O	GPIO_Output	EX_R-HEATER

Pin Number LQFP144	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
38	VSS	Power		
39	VDD	Power		
41	PA5 **	I/O	SPI1_SCK	FLASH-CLK
42	PA6 **	I/O	SPI1_MISO	FLASH-DO
43	PA7 **	I/O	SPI1_MOSI	FLASH-DI
44	PC4	I/O	ADC1_IN14	NTC
46	PB0 *	I/O	GPIO_Output	EX_L-FAN-PARTCOOL
47	PB1 *	I/O	GPIO_Output	EX_L-FAN-heatbreak
49	PF11 **	I/O	DCMI_D12	FLASH
51	VSS	Power		
52	VDD	Power		
53	PF13 *	I/O	GPIO_Output	EX_R_FAN-PARTCOOL
54	PF14 *	I/O	GPIO_Output	EX_R-FAN-HEATBREAK
56	PG0 *	I/O	GPIO_Input	Y_min
57	PG1 *	I/O	GPIO_Input	Z_min
58	PE7 **	I/O	FSMC_D4	TOUCHSCREEN
59	PE8 **	I/O	FSMC_D5	TOUCHSCREEN
60	PE9 **	I/O	FSMC_D6	TOUCHSCREEN
61	VSS	Power		
62	VDD	Power		
63	PE10 **	I/O	FSMC_D7	TOUCHSCREEN
64	PE11 **	I/O	FSMC_DA8	TOUCHSCREEN
65	PE12 **	I/O	FSMC_D9	TOUCHSCREEN
66	PE13 **	I/O	FSMC_D10	TOUCHSCREEN
67	PE14 **	I/O	FSMC_D11	TOUCHSCREEN
68	PE15 **	I/O	FSMC_D12	TOUCHSCREEN
69	PB10 **	I/O	SPI2_SCK	TOUCHSCREEN
70	PB11 *	I/O	GPIO_Analog	BUZZER
71	VCAP_1	Power		
72	VDD	Power		
73	PB12 **	I/O	SPI2_NSS	CS_SD
75	PB14 **	I/O	SPI2_MISO	MISO_SD
76	PB15 **	I/O	SPI2_MOSI	MOSI_SD
77	PD8 **	I/O	FSMC_D13	TOUCHSCREEN
78	PD9 **	I/O	FSMC_D14	TOUCHSCREEN
79	PD10 **	I/O	FSMC_DA15	TOUCHSCREEN
80	PD11 **	I/O	FSMC_A16	TOUCHSCREEN
81	PD12 **	I/O	TIM4_CH1	CD_SD
82	PD13 **	I/O	FSMC_A18	TOUCHSCREEN

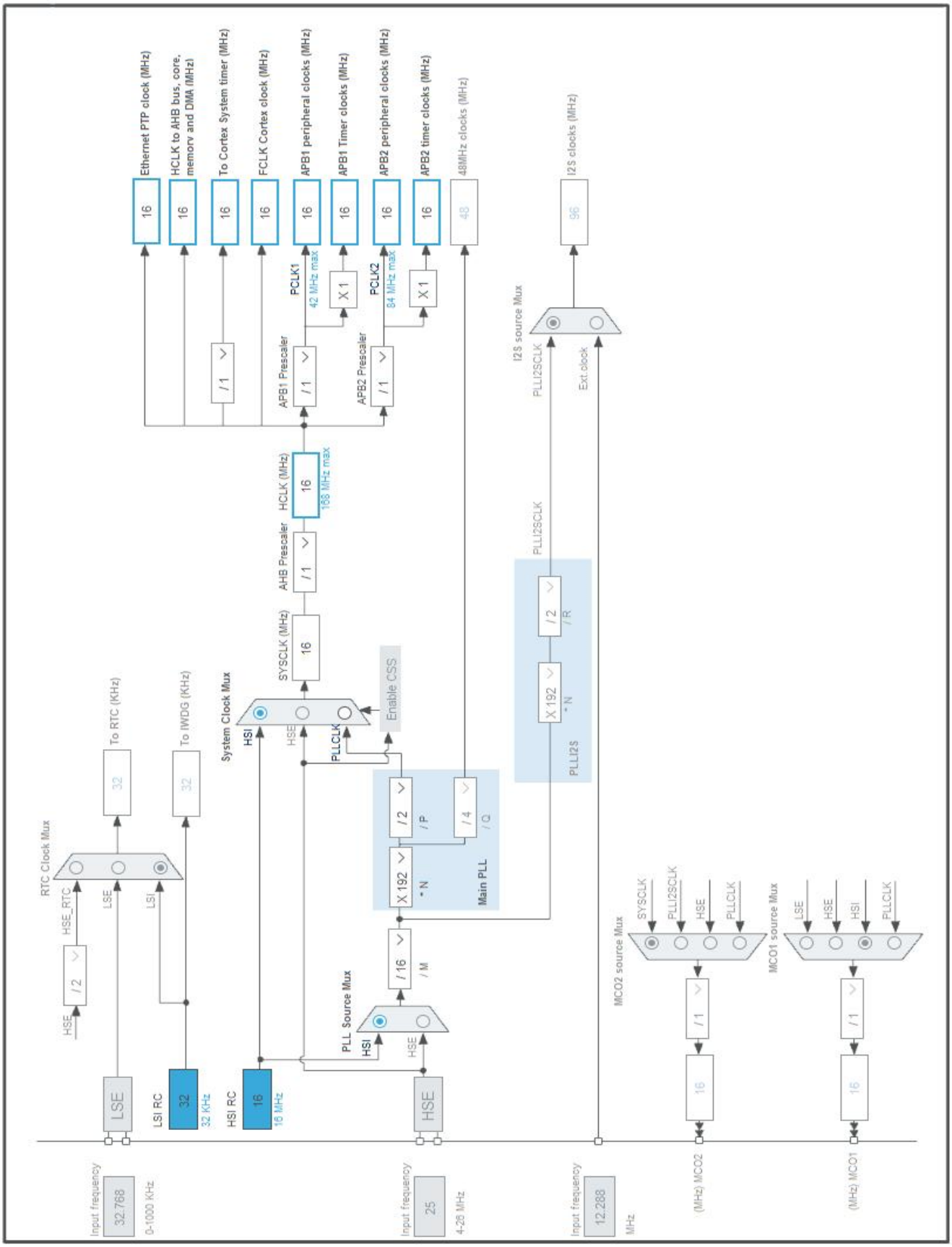
Pin Number LQFP144	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
83	VSS	Power		
84	VDD	Power		
85	PD14 **	I/O	FSMC_D0	TOUCHSCREEN
86	PD15 **	I/O	FSMC_D1	TOUCHSCREEN
87	PG2 **	I/O	FSMC_A12	TOUCHSCREEN
88	PG3 **	I/O	FSMC_A13	EEPROM
89	PG4 **	I/O	FSMC_A14	EEPROM
90	PG5 *	I/O	GPIO_Output	LED-4
91	PG6 *	I/O	GPIO_Input	LED3
92	PG7 *	I/O	GPIO_Output	LED2
94	VSS	Power		
95	VDD	Power		
96	PC6 *	I/O	GPIO_Input	XR_min
97	PC7 *	I/O	GPIO_Input	XL_min
100	PA8 **	I/O	USB_OTG_FS_SOF	
101	PA9 **	I/O	USART1_TX	
102	PA10 **	I/O	USART1_RX	
103	PA11 **	I/O	USB_OTG_FS_DM	
104	PA12 **	I/O	USB_OTG_FS_DP	
105	PA13 **	I/O	SYS_JTMS-SWDIO	
106	VCAP_2	Power		
107	VSS	Power		
108	VDD	Power		
109	PA14 **	I/O	SYS_JTCK-SWCLK	
110	PA15 **	I/O	I2S3_WS	TOUCHSCREEN
111	PC10 *	I/O	GPIO_Output	ADS1118-SCLK
112	PC11 *	I/O	GPIO_Input	ADS1118-DOUT
113	PC12 **	I/O	I2S3_SD	ADS118-DIN
114	PD0 **	I/O	FSMC_D2	TOUCHSCREEN
115	PD1 **	I/O	FSMC_D3	TOUCHSCREEN
118	PD4 **	I/O	FSMC_NOE	TOUCHSCREEN
119	PD5 **	I/O	FSMC_NWE	TOUCHSCREEN
120	VSS	Power		
121	VDD	Power		
123	PD7 **	I/O	FSMC_NE1	TOUCHSCREEN
125	PG10 **	I/O	FSMC_NE3	TOUCHSCREEN
126	PG11 **	I/O	FSMC_NCE4_2	TOUCHSCREEN
130	VSS	Power		
131	VDD	Power		

Pin Number LQFP144	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
132	PG15 *	I/O	GPIO_Output	DRV_XR1_VS??
133	PB3 *	I/O	GPIO_Output	DRV_XR1_VS??
134	PB4 *	I/O	GPIO_Output	DRV_XR1_ENN
135	PB5 *	I/O	GPIO_Output	DRV_XR1_STEP
136	PB6 *	I/O	GPIO_Output	DRV_XR1_DIR
137	PB7 *	I/O	GPIO_Input	DRV_XA-VS??
138	BOOT0	Boot		
139	PB8 *	I/O	GPIO_Output	DRV_XA-VS??
140	PB9 *	I/O	GPIO_Output	DRV_XA-ENN
141	PE0 *	I/O	GPIO_Output	DRV_XA-STEP
142	PE1 *	I/O	GPIO_Output	DRV_XA-DIR
143	PDR_ON	Reset		
144	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



5. Software Project

5.1. Project Settings

Name	Value
Project Name	Documents
Project Folder	C:\Users\Luca Desktop\Documents
Toolchain / IDE	EWARM V8.50
Firmware Package Name and Version	STM32Cube FW_F4 V1.27.1
Application Structure	Advanced
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	Copy all used libraries into the project folder
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

6. Power Consumption Calculator report

6.1. Microcontroller Selection

Series	STM32F4
Line	STM32F407/417
MCU	STM32F417ZGTx
Datasheet	DS8597_Rev8

6.2. Parameter Selection

Temperature	25
Vdd	3.3

6.3. 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

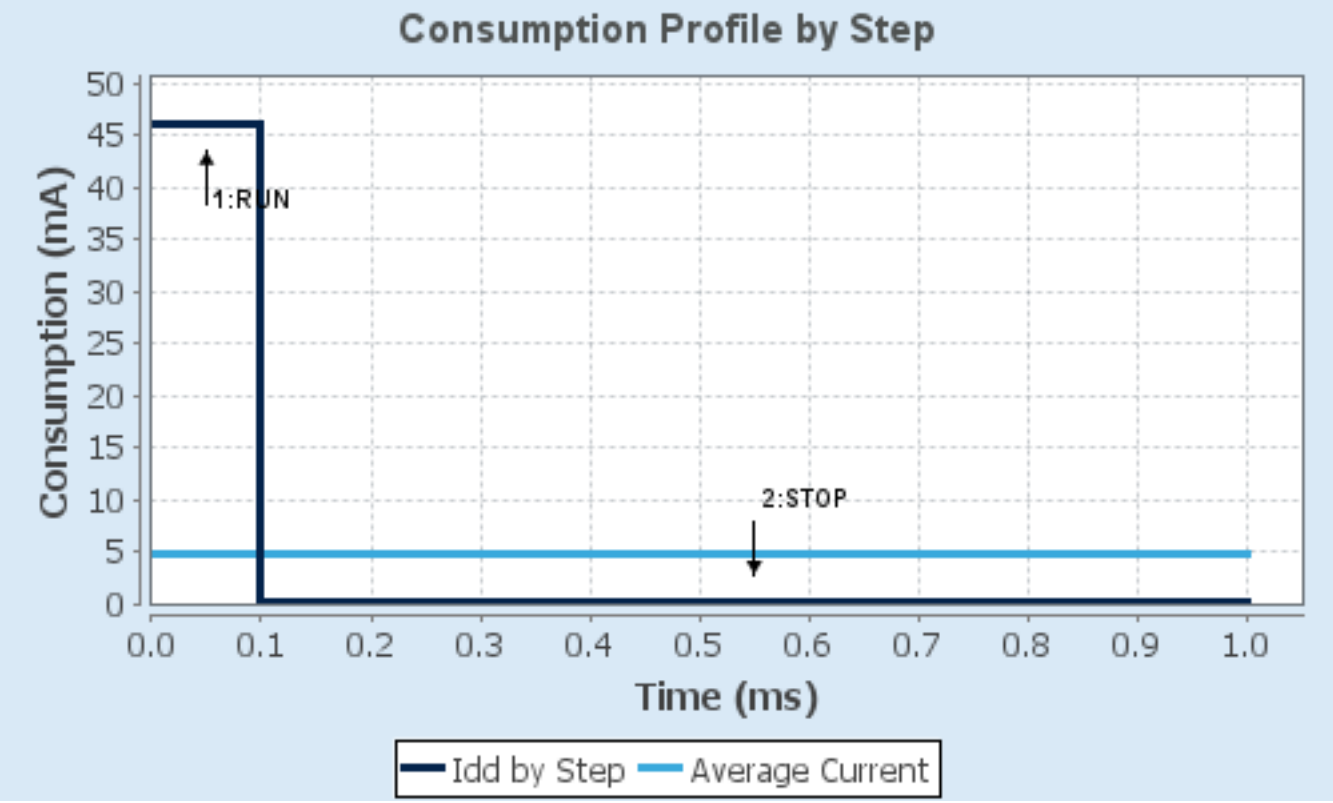
6.4. Sequence

Step	Step1	Step2
Mode	RUN	STOP
Vdd	3.3	3.3
Voltage Source	Battery	Battery
Range	Scale1-High	No Scale
Fetch Type	FLASH	n/a
CPU Frequency	168 MHz	0 Hz
Clock Configuration	HSE PLL	Regulator_LP Flash-PwrDwn
Clock Source Frequency	4 MHz	0 Hz
Peripherals		
Additional Cons.	0 mA	0 mA
Average Current	46 mA	280 µA
Duration	0.1 ms	0.9 ms
DMIPS	210.0	0.0
Ta Max	98.93	104.96
Category	In DS Table	In DS Table

6.5. Results

Sequence Time	1 ms	Average Current	4.85 mA
Battery Life	29 days, 4 hours	Average DMIPS	210.0 DMIPS

6.6. Chart


Consumption Profile by Step
Consumption (mA)
50
45
40
35
30
25
20
15
10
5
0
1:RUN
2:STOP
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

7. Peripherals and Middlewares Configuration

7.1. ADC1

mode: IN14

7.1.1. Parameter Settings:

ADCs_Common_Settings:

Mode	Independent mode

ADC_Settings:

Clock Prescaler	PCLK2 divided by 2
Resolution	12 bits (15 ADC Clock cycles)
Data Alignment	Right alignment
Scan Conversion Mode	Disabled
Continuous Conversion Mode	Disabled
Discontinuous Conversion Mode	Disabled
DMA Continuous Requests	Disabled
End Of Conversion Selection	EOC flag at the end of single channel conversion

ADC_Regular_ConversionMode:

Number Of Conversion	1
External Trigger Conversion Source	Regular Conversion launched by software
External Trigger Conversion Edge	None
Rank	1
Channel	Channel 14
Sampling Time	3 Cycles

ADC_Injected_ConversionMode:

Number Of Conversions	0

WatchDog:

Enable Analog WatchDog Mode	false

7.2. RCC

7.2.1. Parameter Settings:

System Parameters:

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

RCC Parameters:

HSI Calibration Value	16
HSE Startup Timout Value (ms)	100
LSE Startup Timout Value (ms)	5000

Power Parameters:

Power Regulator Voltage Scale	Power Regulator Voltage Scale 1

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
ADC1	PC4	ADC1_IN14	Analog mode	No pull-up and no pull-down	n/a	NTC
Single Mapped Signals	PC14-OSC32_IN	RCC_OSC32_IN	n/a	n/a	n/a	
	PC15-OSC32_OUT	RCC_OSC32_OUT	n/a	n/a	n/a	
	PH0-OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	
	PH1-OSC_OUT	RCC_OSC_OUT	n/a	n/a	n/a	
	PA5	SPI1_SCK	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	FLASH-CLK
	PA6	SPI1_MISO	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	FLASH-DO
	PA7	SPI1_MOSI	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	FLASH-DI
	PF11	DCMI_D12	Alternate Function Push Pull	No pull-up and no pull-down	Low	FLASH
	PE7	FSMC_D4	Alternate Function Push Pull	No pull-up and no pull-down	Very High	TOUCHSCREEN
	PE8	FSMC_D5	Alternate Function Push Pull	No pull-up and no pull-down	Very High	TOUCHSCREEN
	PE9	FSMC_D6	Alternate Function Push Pull	No pull-up and no pull-down	Very High	TOUCHSCREEN
	PE10	FSMC_D7	Alternate Function Push Pull	No pull-up and no pull-down	Very High	TOUCHSCREEN
	PE11	FSMC_DA8	Alternate Function Push Pull	No pull-up and no pull-down	Very High	TOUCHSCREEN
	PE12	FSMC_D9	Alternate Function Push Pull	No pull-up and no pull-down	Very High	TOUCHSCREEN
	PE13	FSMC_D10	Alternate Function Push Pull	No pull-up and no pull-down	Very High	TOUCHSCREEN
	PE14	FSMC_D11	Alternate Function Push Pull	No pull-up and no pull-down	Very High	TOUCHSCREEN
	PE15	FSMC_D12	Alternate Function Push Pull	No pull-up and no pull-down	Very High	TOUCHSCREEN
	PB10	SPI2_SCK	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	TOUCHSCREEN
	PB12	SPI2_NSS	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	CS_SD
	PB14	SPI2_MISO	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	MISO_SD
	PB15	SPI2_MOSI	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	MOSI_SD
	PD8	FSMC_D13	Alternate Function Push Pull	No pull-up and no pull-down	Very High	TOUCHSCREEN
	PD9	FSMC_D14	Alternate Function Push Pull	No pull-up and no pull-down	Very High	TOUCHSCREEN

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
	PD10	FSMC_DA15	Alternate Function Push Pull	No pull-up and no pull-down	Very High	TOUCHSCREEN
	PD11	FSMC_A16	Alternate Function Push Pull	No pull-up and no pull-down	Very High	TOUCHSCREEN
	PD12	TIM4_CH1	Alternate Function Push Pull	No pull-up and no pull-down	Low	CD_SD
	PD13	FSMC_A18	Alternate Function Push Pull	No pull-up and no pull-down	Very High	TOUCHSCREEN
	PD14	FSMC_D0	Alternate Function Push Pull	No pull-up and no pull-down	Very High	TOUCHSCREEN
	PD15	FSMC_D1	Alternate Function Push Pull	No pull-up and no pull-down	Very High	TOUCHSCREEN
	PG2	FSMC_A12	Alternate Function Push Pull	No pull-up and no pull-down	Very High	TOUCHSCREEN
	PG3	FSMC_A13	Alternate Function Push Pull	No pull-up and no pull-down	Very High	EEPROM
	PG4	FSMC_A14	Alternate Function Push Pull	No pull-up and no pull-down	Very High	EEPROM
	PA8	USB_OTG_FS_SOF	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	
	PA9	USART1_TX	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	
	PA10	USART1_RX	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	
	PA11	USB_OTG_FS_DM	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	
	PA12	USB_OTG_FS_DP	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	
	PA13	SYS_JTMS-SWDIO	n/a	n/a	**n/a**	
	PA14	SYS_JTCK-SWCLK	n/a	n/a	**n/a**	
	PA15	I2S3_WS	Alternate Function Push Pull	No pull-up and no pull-down	Low	TOUCHSCREEN
	PC12	I2S3_SD	Alternate Function Push Pull	No pull-up and no pull-down	Low	ADS118-DIN
	PD0	FSMC_D2	Alternate Function Push Pull	No pull-up and no pull-down	Very High	TOUCHSCREEN
	PD1	FSMC_D3	Alternate Function Push Pull	No pull-up and no pull-down	Very High	TOUCHSCREEN
	PD4	FSMC_NOE	Alternate Function Push Pull	No pull-up and no pull-down	Very High	TOUCHSCREEN
	PD5	FSMC_NWE	Alternate Function Push Pull	No pull-up and no pull-down	Very High	TOUCHSCREEN
	PD7	FSMC_NE1	Alternate Function Push Pull	No pull-up and no pull-down	Very High	TOUCHSCREEN
	PG10	FSMC_NE3	Alternate Function Push Pull	No pull-up and no pull-down	Very High	TOUCHSCREEN
	PG11	FSMC_NCE4_2	Alternate Function Push Pull	No pull-up and no pull-down	Very High	TOUCHSCREEN
GPIO	PE2	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DRV_XB-VS??
	PE3	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DRV_XB-VS??
	PE4	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DRV_XB-ENN
	PE5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DRV_XB-STEP
	PE6	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DRV_XB-DIR
	PF0	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DRV_Z1-VS??
	PF1	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DRV_Z1-VS??
	PF2	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DRV_Z1-ENN

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
	PF3	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DRV_Z1-STEP
	PF4	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DRV_Z1-DIR
	PF5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DRV_Y1-VS??
	PF6	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DRV_Y1-VS??
	PF7	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DRV_Y1-ENN
	PF8	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DRV_Y1-STEP
	PF9	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DRV_Y1-DIR
	PF10	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DRV_XL1-VS??
	PC0	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DRV_XL1-VS??
	PC1	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DRV_XL1-ENN
	PC2	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DRV_XL1-STEP
	PC3	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DRV_XL1-DIR
	PA0-WKUP	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	PCB_FAN
	PA1	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	HeatBoard
	PA2	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	EX_L-HEATER
	PA3	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	EX_R-HEATER
	PB0	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	EX_L-FAN-PARTCOOL
	PB1	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	EX_L-FAN-heatbreak
	PF13	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	EX_R_FAN-PARTCOOL
	PF14	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	EX_R-FAN-HEATBREAK
	PG0	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	Y_min
	PG1	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	Z_min
	PB11	GPIO_Analog	Analog mode	No pull-up and no pull-down	n/a	BUZZER
	PG5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED-4
	PG6	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	LED3
	PG7	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LED2
	PC6	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	XR_min
	PC7	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	XL_min
	PC10	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	ADS1118-SCLK
	PC11	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	ADS1118-DOUT
	PG15	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DRV_XR1_VS??
	PB3	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DRV_XR1_VS??
	PB4	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DRV_XR1_ENN
	PB5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DRV_XR1_STEP
	PB6	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DRV_XR1_DIR
	PB7	GPIO_Input	Input mode	No pull-up and no pull-down	n/a	DRV_XA-VS??
	PB8	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DRV_XA-VS??
	PB9	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DRV_XA-ENN
	PE0	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DRV_XA-STEP
	PE1	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	DRV_XA-DIR

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
Memory management fault	true	0	0
Pre-fetch 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, ADC2 and ADC3 global interrupts	unused		
FPU global interrupt	unused		

8.3.2. NVIC Code generation

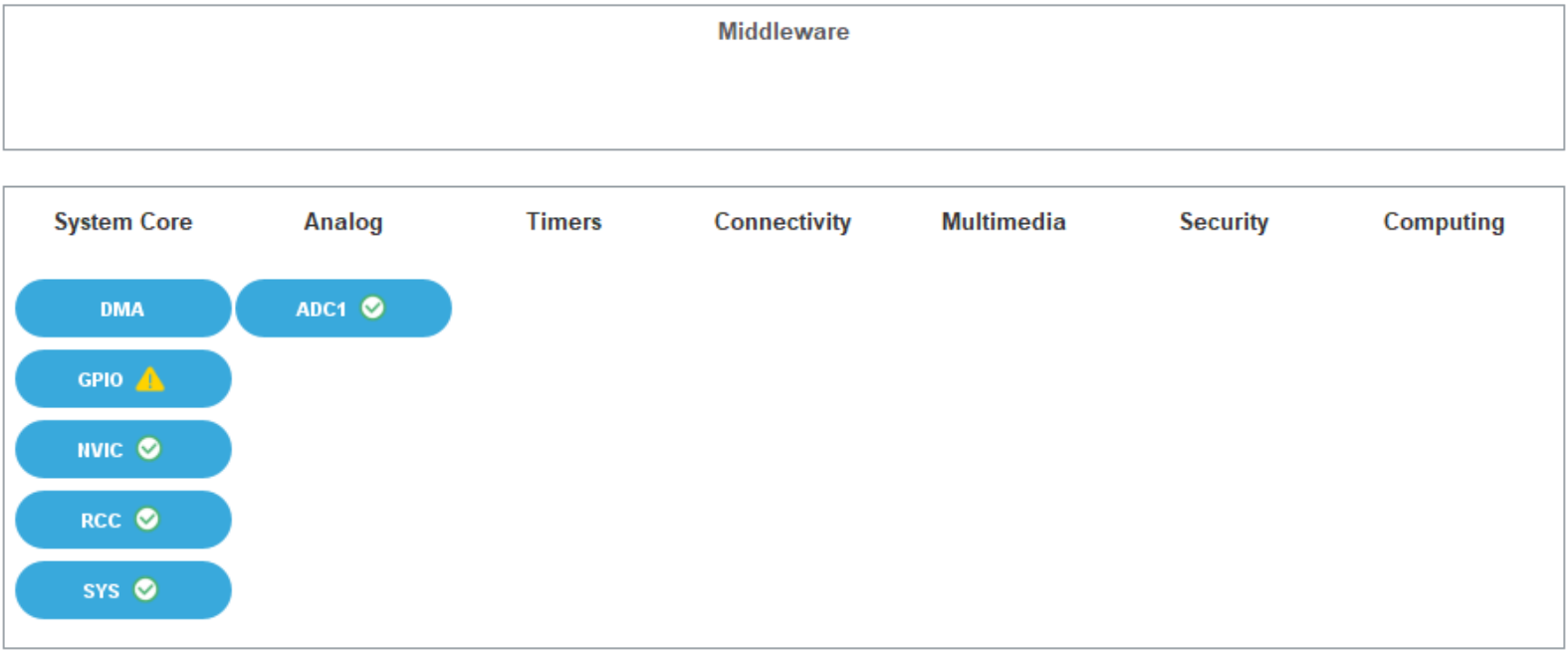
Enabled interrupt Table	Select for init sequence ordering	Generate IRQ handler	Call HAL handler
Non maskable interrupt	false	true	false
Hard fault interrupt	false	true	false
Memory management fault	false	true	false
Pre-fetch fault, memory access fault	false	true	false
Undefined instruction or illegal 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**

9. System Views

9.1. Category view

9.1.1. Current



10. Docs & Resources

Type	Link
BSDL files	https://www.st.com/resource/en/bsdl_model/stm32f405-415_407-417_bsdl.zip
IBIS models	https://www.st.com/resource/en/ibis_model/stm32f405-415_407-417_ibis.zip
System View Description	https://www.st.com/resource/en/svd/stm32f4_svd.zip
BSDL files	https://www.st.com/resource/en/bsdl_model/stm32f405-415_407-417_bsdl.zip
IBIS models	https://www.st.com/resource/en/ibis_model/stm32f405-415_407-417_ibis.zip
System View Description	https://www.st.com/resource/en/svd/stm32f4_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-stm8_software_development_tools.pdf
Training Material	https://www.st.com/resource/en/sales_guide/sg_sc2154.pdf
Flyers	https://www.st.com/resource/en/flyer/flstm32nucleo.pdf
Flyers	https://www.st.com/resource/en/flyer/flstmcsuite.pdf
Flyers	https://www.st.com/resource/en/flyer/flstm32trust.pdf
Product Certifications	https://www.st.com/resource/en/certification_document/stm32_authentication_can.pdf
Application Notes	https://www.st.com/resource/en/application_note/an1181-electrostatic-discharge-sensitivity-measurement-stmicroelectronics.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/an2834-how-to-get-the-best-adc-accuracy-in-stm32-microcontrollers-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an2867-oscillator-design-guide-for-stm8afals-stm32-mcus-and-mpus-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an2945-stm8s-and-stm32-mcus-a-consistent-832bit-product-line-for-painless-migration-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an3070-managing-the-driver-enable-signal-for-rs485-and-iolink-communications-with-the-stm32s-usart-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/an3154-can-protocol-used-in-the-stm32-bootloader-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/an3364-migration-and-compatibility-guidelines-for-stm32-microcontroller-applications-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an3371-using-the-hardware-realtime-clock-rtc-in-stm32-f0-f2-f3-f4-and-l1-series-of-mcus-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an3997-audio-playback-and-recording-using-the-stm32f4discovery-stmicroelectronics.pdf

Application Notes	https://www.st.com/resource/en/application_note/an3998-pdm-audio-software-decoding-on-stm32-microcontrollers-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an4013-stm32-crossseries-timer-overview-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an4031-using-the-stm32f2-stm32f4-and-stm32f7-series-dma-controller-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an4073-how-to-improve-adc-accuracy-when-using-stm32f2xx-and-stm32f4xx-microcontrollers-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an4076-two-or-three-shunt-resistor-based-current-sensing-circuit-design-in-3phase-inverters-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an4221-i2c-protocol-used-in-the-stm32-bootloader-stmicroelectronics.pdf
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Application Notes	https://www.st.com/resource/en/application_note/an4230-stm32-microcontroller-random-number-generation-validation-using-the-nist-statistical-test-suite-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an4277-using-stm32-device-pwm-shutdown-features-for-motor-control-and-digital-power-conversion-stmicroelectronics.pdf
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Application Notes	https://www.st.com/resource/en/application_note/an4488-getting-started-with-stm32f4xxxx-mcu-hardware-development-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an4547-migrating-from-stm32f407xx417xx-to-stm32f427xx429xx437xx439xx-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/an4640-peripherals-interconnections-on-stm32f4057xx-stm32f4157xx-stm32f42xxx-stm32f43xxx-stm32f446xx-and-stm32f469479xx-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
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Application Notes	https://www.st.com/resource/en/application_note/an4759-using-the-hardware-realtime-clock-rtc-and-the-tamper-management-unit-tamp-with-stm32-microcontrollers-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/an4821-migrating-from-stm32f405415-line-and-stm32f407417-line-to-stm32l4-series-and-stm32l4-series-microcontrollers-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an4838-managing-memory-protection-unit-in-stm32-mcus-stmicroelectronics.pdf
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	electromyogram-technique-to-detect-muscle-activity-stmicroelectronics.pdf
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Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an1801_stm32cubeprogrammer_in_truestudio-installing-stm32cubeprogrammer-in-truestudio-stmicroelectronics.pdf
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Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/stm32cubemx_installation_in_truestudio-stm32cubemx-installation-in-truestudio-stmicroelectronics.pdf
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Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an3116-stm32s-adc-modes-and-their-applications-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an3174-implementing-receivers-for-infrared-remote-control-protocols-using-stm32f10xxx-microcontrollers-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an3241-qvga-tftlcd-direct-drive-using-the-stm32f10xx-fsmc-peripheral-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an3307-guidelines-for-obtaining-iec-60335-class-b-certification-for-any-stm32-application-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an3364-migration-and-compatibility-guidelines-for-stm32-microcontroller-applications-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an3965-stm32f40xstm32f41x-inapplication-programming-using-the-usart-stmicroelectronics.pdf

Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an3966-lwip-tcpip-stack-demonstration-for-stm32f4x7-microcontrollers-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an3967-secure-socket-layer-ssl-for-stm32f417xx-microcontrollers-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an3968-stm32f407stm32f417-inapplication-programming-iap-over-ethernet-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an3969-eeprom-emulation-in-stm32f40xstm32f41x-microcontrollers-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an3988-clock-configuration-tool-for-stm32f40xx41xx427x437x-microcontrollers-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an3990-upgrading-stm32f4discovery-board-firmware-using-a-usb-key-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an3997-audio-playback-and-recording-using-the-stm32f4discovery-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an3998-pdm-audio-software-decoding-on-stm32-microcontrollers-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an4044-floating-point-unit-demonstration-on-stm32-microcontrollers-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an4323-getting-started-with-stemwin-library-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an4365-using-stm32f4-mcu-power-modes-with-best-dynamic-efficiency-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/an4457-implementing-an-emulated-uart-on-stm32f4-microcontrollers-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an4499-stm32--nrf51822-bluetooth-low-energy-system-solution-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an4502-stm32-smbuspmbus-embedded-software-expansion-for-stm32cube-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/an4666-parallel-synchronous-transmission-using-gpio-and-dma-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an4678-full-duplex-spi-emulation-for-stm32f4-microcontrollers-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an4701-proprietary-code-readout-protection-on-microcontrollers-of-the-stm32f4-series-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an4739-stm32cube-firmware-examples-for-stm32f4-series-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an4758-proprietary-code-readout-protection-on-stm32l4-stm32l4-stm32g4-and-stm32wb-series-mcus-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an4759-using-the-hardware-realtime-clock-rtc-and-the-tamper-management-unit-tamp-with-stm32-microcontrollers-stmicroelectronics.pdf
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Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an4968-proprietary-code-read-out-protection-pcrop-on-stm32f72xxx-and-stm32f73xxx-microcontrollers-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an5054-secure-programming-using-stm32cubeprogrammer-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/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 & Software	https://www.st.com/resource/en/application_note/an5426-migrating-graphics-middleware-projects-from-stm32cubemx-540-to-stm32cubemx-550-stmicroelectronics.pdf
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Errata Sheets	https://www.st.com/resource/en/errata_sheet/es0182-stm32f405407xx-and-stm32f415417xx-device-limitations-stmicroelectronics.pdf
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