
STM32
CubeMX

1. Description

1.1. Project

Project Name	F3_BSP
Board Name	F4_BSP
Generated with:	STM32CubeMX 6.9.1
Date	08/30/2023

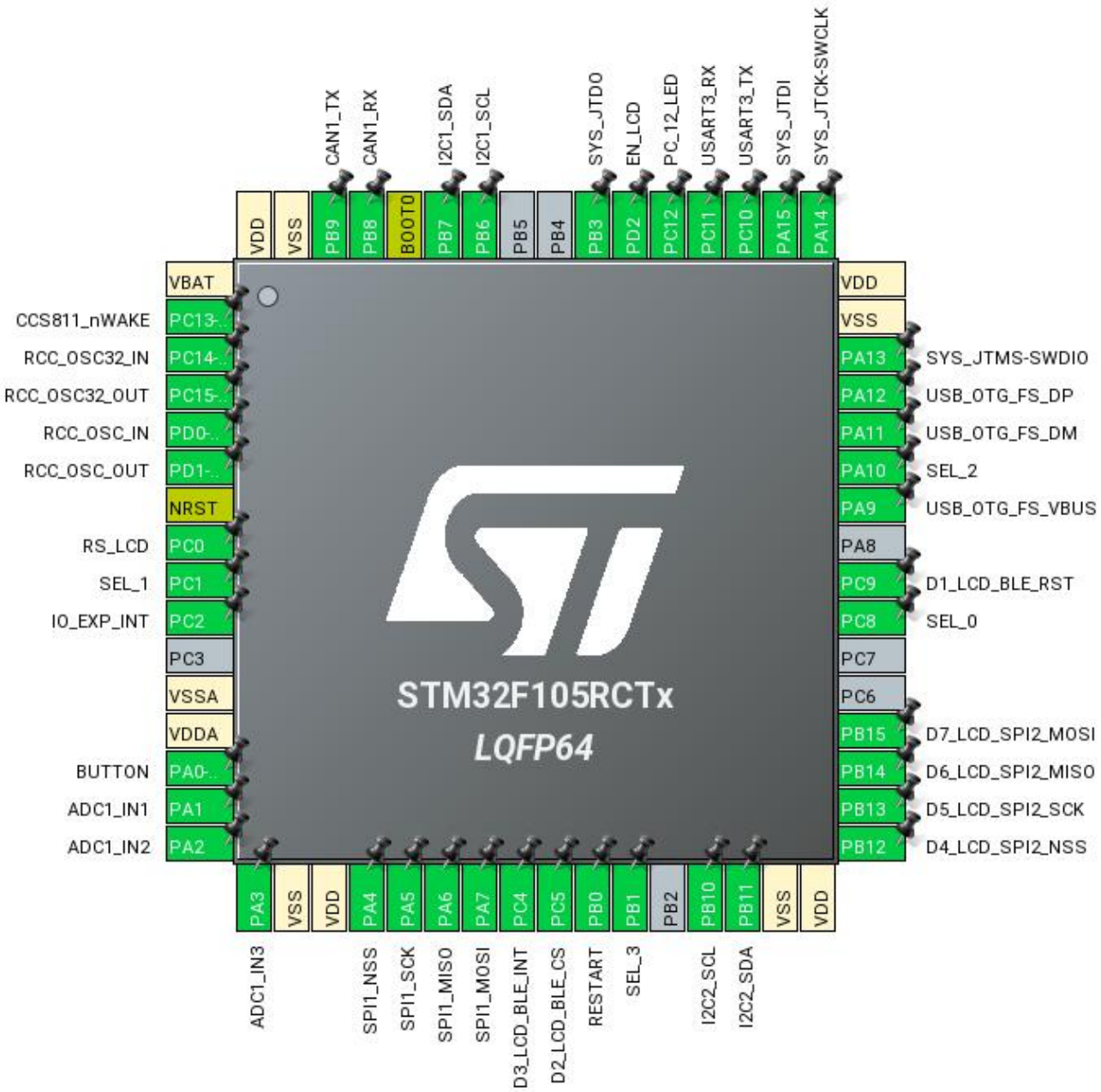
1.2. MCU

MCU Series	STM32F1
MCU Line	STM32F105/107
MCU name	STM32F105RCTx
MCU Package	LQFP64
MCU Pin number	64

1.3. Core(s) information

Core(s)	Arm Cortex-M3

2. Pinout Configuration



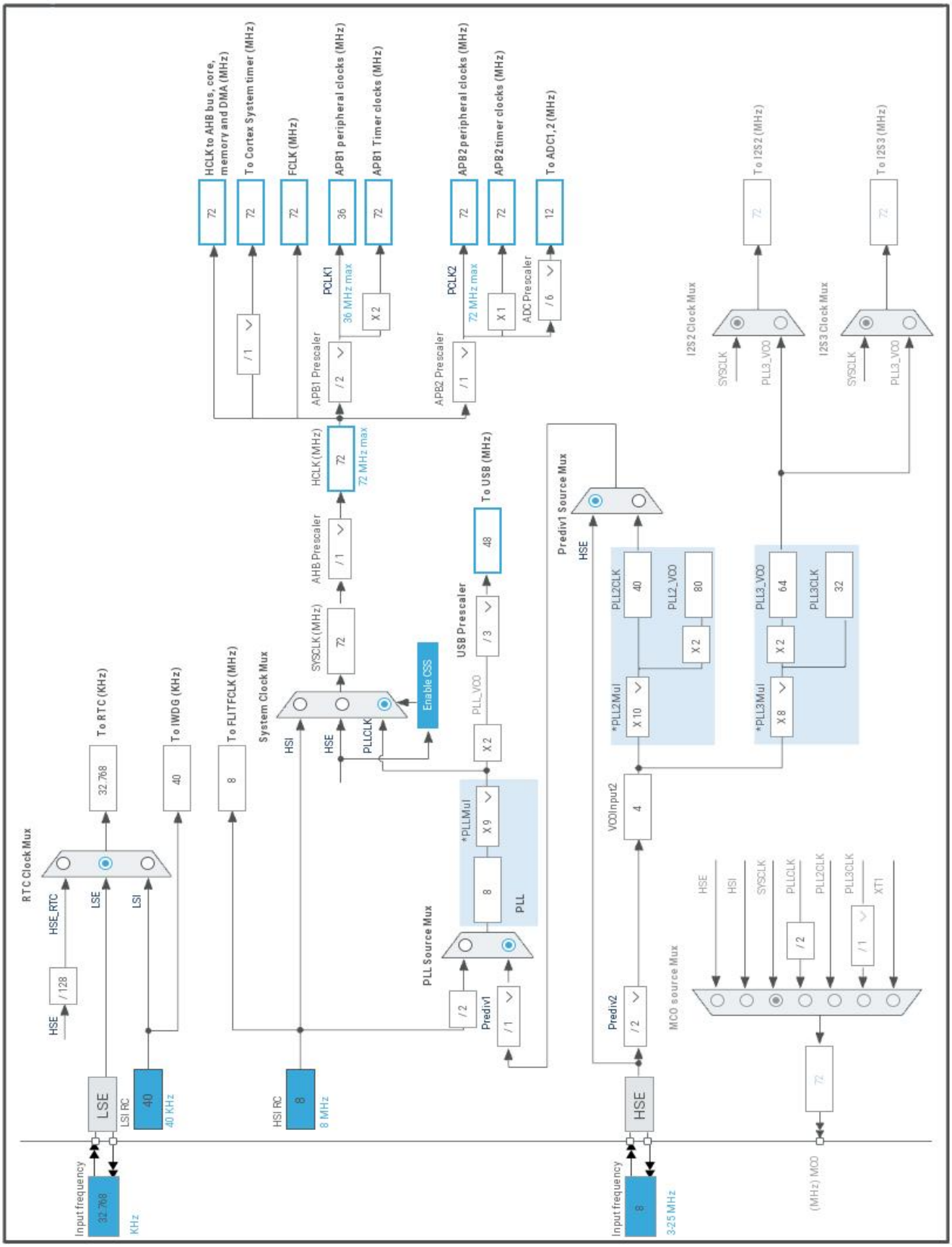
3. Pins Configuration

Pin Number LQFP64	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VBAT	Power		
2	PC13-TAMPER-RTC *	I/O	GPIO_Output	CCS811_nWAKE
3	PC14-OSC32_IN	I/O	RCC_OSC32_IN	
4	PC15-OSC32_OUT	I/O	RCC_OSC32_OUT	
5	PD0-OSC_IN	I/O	RCC_OSC_IN	
6	PD1-OSC_OUT	I/O	RCC_OSC_OUT	
7	NRST	Reset		
8	PC0 *	I/O	GPIO_Output	RS_LCD
9	PC1 *	I/O	GPIO_Output	SEL_1
10	PC2	I/O	GPIO_EXTI2	IO_EXP_INT
12	VSSA	Power		
13	VDDA	Power		
14	PA0-WKUP	I/O	GPIO_EXTI0	BUTTON
15	PA1	I/O	ADC1_IN1	ADC1_IN1
16	PA2	I/O	ADC1_IN2	ADC1_IN2
17	PA3	I/O	ADC1_IN3	ADC1_IN3
18	VSS	Power		
19	VDD	Power		
20	PA4 *	I/O	GPIO_Output	SPI1_NSS
21	PA5	I/O	SPI1_SCK	SPI1_SCK
22	PA6	I/O	SPI1_MISO	SPI1_MISO
23	PA7	I/O	SPI1_MOSI	SPI1_MOSI
24	PC4	I/O	GPIO_EXTI4	D3_LCD_BLE_INT
25	PC5 *	I/O	GPIO_Output	D2_LCD_BLE_CS
26	PB0 *	I/O	GPIO_Output	RESTART
27	PB1 *	I/O	GPIO_Output	SEL_3
29	PB10	I/O	I2C2_SCL	I2C2_SCL
30	PB11	I/O	I2C2_SDA	I2C2_SDA
31	VSS	Power		
32	VDD	Power		
33	PB12 *	I/O	GPIO_Output	D4_LCD_SPI2_NSS
34	PB13	I/O	SPI2_SCK	D5_LCD_SPI2_SCK
35	PB14 *	I/O	GPIO_Output	D6_LCD_SPI2_MISO
36	PB15	I/O	SPI2_MOSI	D7_LCD_SPI2_MOSI
39	PC8 *	I/O	GPIO_Output	SEL_0
40	PC9 *	I/O	GPIO_Output	D1_LCD_BLE_RST

Pin Number LQFP64	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
42	PA9	I/O	USB_OTG_FS_VBUS	
43	PA10 *	I/O	GPIO_Output	SEL_2
44	PA11	I/O	USB_OTG_FS_DM	
45	PA12	I/O	USB_OTG_FS_DP	
46	PA13	I/O	SYS_JTMS-SWDIO	
47	VSS	Power		
48	VDD	Power		
49	PA14	I/O	SYS_JTCK-SWCLK	
50	PA15	I/O	SYS_JTDI	
51	PC10	I/O	USART3_TX	USART3_TX
52	PC11	I/O	USART3_RX	USART3_RX
53	PC12 *	I/O	GPIO_Output	PC_12_LED
54	PD2 *	I/O	GPIO_Output	EN_LCD
55	PB3	I/O	SYS_JTDO	
58	PB6	I/O	I2C1_SCL	I2C1_SCL
59	PB7	I/O	I2C1_SDA	I2C1_SDA
60	BOOT0	Boot		
61	PB8	I/O	CAN1_RX	CAN1_RX
62	PB9	I/O	CAN1_TX	CAN1_TX
63	VSS	Power		
64	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	F3_BSP
Project Folder	/home/tommaso/Documenti/STM32/workspace/F3_BSP
Toolchain / IDE	STM32CubeIDE
Firmware Package Name and Version	STM32Cube FW_F1 V1.8.5
Application Structure	Basic
Generate Under Root	No
Do not generate the main()	No
Minimum Heap Size	0x200
Minimum Stack Size	0xD00

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	Yes
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)	Yes
Enable Full Assert	No

5.3. Advanced Settings - Generated Function Calls

Rank	Function Name	Peripheral Instance Name
1	MX_GPIO_Init	GPIO
2	MX_DMA_Init	DMA
3	SystemClock_Config	RCC
4	MX_RTC_Init	RTC
5	MX_USB_DEVICE_Init	USB_DEVICE
6	MX_CAN1_Init	CAN1
7	MX_I2C1_Init	I2C1
8	MX_TIM3_Init	TIM3
9	MX_TIM1_Init	TIM1
10	MX_CRC_Init	CRC
11	MX_TIM6_Init	TIM6

Rank	Function Name	Peripheral Instance Name
12	MX_I2C2_Init	I2C2
13	MX_SPI2_Init	SPI2
14	MX_ADC1_Init	ADC1
15	MX_TIM7_Init	TIM7
16	MX_USART3_UART_Init	USART3
17	MX_IWDG_Init	IWDG

1. Power Consumption Calculator report

1.1. Microcontroller Selection

Series	STM32F1
Line	STM32F105/107
MCU	STM32F105RCTx
Datasheet	DS6014_Rev10

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

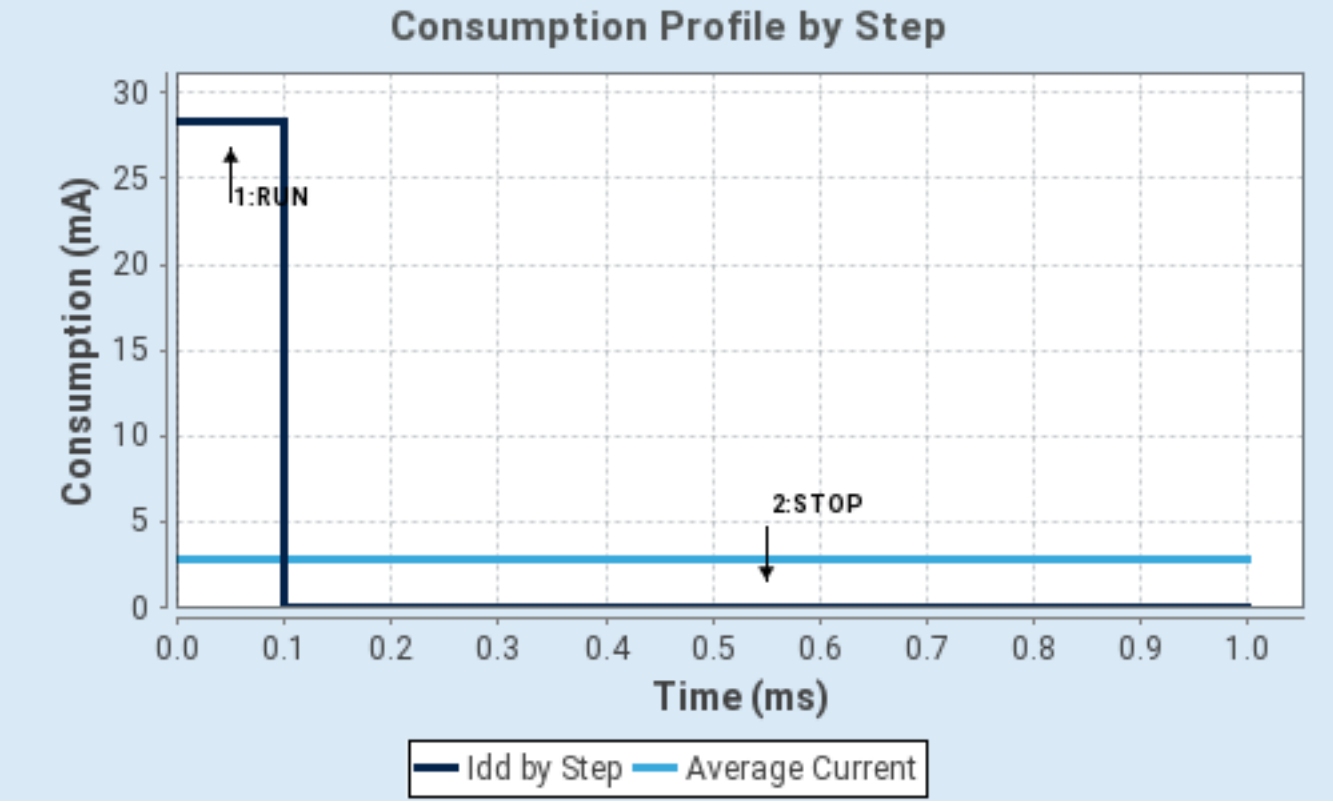
1.4. Sequence

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	28.3 mA	26 µA
Duration	0.1 ms	0.9 ms
DMIPS	90.0	0.0
Ta Max	100.8	105
Category	In DS Table	In DS Table

1.5. Results

Sequence Time	1 ms	Average Current	2.85 mA
Battery Life	1 month, 19 days, 4 hours	Average DMIPS	61.0 DMIPS

1.6. Chart


Consumption Profile by Step
Consumption (mA)
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

2. Peripherals and Middlewares Configuration

2.1. ADC1

mode: IN1

mode: IN2

mode: IN3

mode: Temperature Sensor Channel

2.1.1. Parameter Settings:

ADCs_Common_Settings:	
Mode	Independent mode
ADC_Settings:	
Data Alignment	Right alignment
Scan Conversion Mode	Enabled
Continuous Conversion Mode	Disabled
Discontinuous Conversion Mode	Disabled
ADC_Regular_ConversionMode:	
Enable Regular Conversions	Enable
Number Of Conversion	**3 ***
External Trigger Conversion Source	Regular Conversion launched by software
Rank	1
Channel	Channel 1
Sampling Time	**239.5 Cycles ***
Rank	**2 ***
Channel	**Channel 2 ***
Sampling Time	**239.5 Cycles ***
Rank	**3 ***
Channel	**Channel Temperature Sensor ***
Sampling Time	**239.5 Cycles ***
ADC_Injected_ConversionMode:	
Enable Injected Conversions	Disable
WatchDog:	
Enable Analog WatchDog Mode	false

2.2. CAN1

mode: Activated

2.2.1. Parameter Settings:

Bit Timings Parameters:

Prescaler (for Time Quantum)	**9 ***
Time Quantum	**250.0 ***
Time Quanta in Bit Segment 1	**13 Times ***
Time Quanta in Bit Segment 2	**2 Times ***
Time for one Bit	**4000 ***
Baud Rate	**250000 ***
ReSynchronization Jump Width	1 Time

Basic Parameters:

Time Triggered Communication Mode	Disable
Automatic Bus-Off Management	**Enable ***
Automatic Wake-Up Mode	**Enable ***
Automatic Retransmission	**Enable ***
Receive Fifo Locked Mode	Disable
Transmit Fifo Priority	**Enable ***

Advanced Parameters:

Test Mode	Normal

2.3. CRC
mode: Activated

2.4. I2C1
I2C: I2C

2.4.1. Parameter Settings:

Master Features:

I2C Speed Mode	**Fast Mode ***
I2C Clock Speed (Hz)	400000
Fast Mode Duty Cycle	Duty cycle Tlow/Thigh = 2

Slave Features:

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

2.5. I2C2

I2C: I2C

2.5.1. Parameter Settings:

Master Features:

I2C Speed Mode	Standard Mode
I2C Clock Speed (Hz)	100000

Slave Features:

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

2.6. IWDG

mode: Activated

2.6.1. Parameter Settings:

Clocking:

IWDG counter clock prescaler	**256 ***
IWDG down-counter reload value	4095

2.7. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

Low Speed Clock (LSE) : Crystal/Ceramic Resonator

2.7.1. Parameter Settings:

System Parameters:

VDD voltage (V)	3.3
Instruction Cache	Enabled
Prefetch Buffer	Enabled
Data Cache	Enabled
Flash Latency(WS)	2 WS (3 CPU cycle)

RCC Parameters:

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

2.8. RTC

mode: Activate Clock Source

mode: Activate Calendar

2.8.1. Parameter Settings:

Calendar Time:

Data Format	BCD data format
Hours	0
Minutes	0
Seconds	0

General:

Auto Predivider Calculation	Enabled
Asynchronous Predivider value	Automatic Predivider Calculation Enabled
Output	Alarm pulse signal on the TAMPER pin

Calendar Date:

Week Day	Monday
Month	January
Date	1
Year	**21 ***

2.9. SPI1

Mode: Full-Duplex Master

2.9.1. Parameter Settings:

Basic Parameters:

Frame Format	Motorola
Data Size	8 Bits
First Bit	MSB First

Clock Parameters:

Prescaler (for Baud Rate)	**128 ***
Baud Rate	**562.5 KBits/s ***
Clock Polarity (CPOL)	Low
Clock Phase (CPHA)	**2 Edge ***

Advanced Parameters:

CRC Calculation	Disabled
NSS Signal Type	Software

2.10. SPI2

Mode: Half-Duplex Master

2.10.1. Parameter Settings:

Basic Parameters:

Frame Format	Motorola
Data Size	8 Bits
First Bit	MSB First

Clock Parameters:

Prescaler (for Baud Rate)	**32 ***
Baud Rate	**1.125 MBits/s ***
Clock Polarity (CPOL)	Low
Clock Phase (CPHA)	1 Edge

Advanced Parameters:

CRC Calculation	Disabled
NSS Signal Type	Software

2.11. SYS

Debug: JTAG (4 pins)

Timebase Source: SysTick

2.12. TIM1

Clock Source : Internal Clock

Channel1: Output Compare No Output

Channel2: Output Compare No Output

Channel3: Output Compare No Output

Channel4: Output Compare No Output

2.12.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**16799 ***

Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	0xFFFF
Internal Clock Division (CKD)	No Division
Repetition Counter (RCR - 8 bits value)	0
auto-reload preload	**Enable ***

Trigger Output (TRGO) Parameters:

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

Break And Dead Time management - BRK Configuration:

BRK State	Disable
BRK Polarity	High

Break And Dead Time management - Output Configuration:

Automatic Output State	Disable
Off State Selection for Run Mode (OSSR)	Disable
Off State Selection for Idle Mode (OSSI)	Disable
Lock Configuration	Off

Output Compare No Output Channel 1:

Mode	Frozen (used for Timing base)
Pulse (16 bits value)	**100 ***
Output compare preload	Disable
CH Polarity	High
CH Idle State	Reset

Output Compare No Output Channel 2:

Mode	Frozen (used for Timing base)
Pulse (16 bits value)	**200 ***
Output compare preload	Disable
CH Polarity	High
CH Idle State	Reset

Output Compare No Output Channel 3:

Mode	Frozen (used for Timing base)
Pulse (16 bits value)	**625 ***
Output compare preload	Disable
CH Polarity	High
CH Idle State	Reset

Output Compare No Output Channel 4:

Mode	Frozen (used for Timing base)
Pulse (16 bits value)	**400 ***
Output compare preload	Disable
CH Polarity	High
CH Idle State	Reset

2.13. TIM3

Clock Source : Internal Clock

2.13.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**36000 ***
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**9999 ***
Internal Clock Division (CKD)	No Division
auto-reload preload	**Enable ***

Trigger Output (TRGO) Parameters:

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

2.14. TIM6

mode: Activated

2.14.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**36000 ***
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**9999 ***
auto-reload preload	**Enable ***

Trigger Output (TRGO) Parameters:

Trigger Event Selection	Reset (UG bit from TIMx_EGR)

2.15. TIM7

mode: Activated

2.15.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**36000 ***
Counter Mode	Up

Counter Period (AutoReload Register - 16 bits value)	**199 ***
auto-reload preload	**Enable ***

Trigger Output (TRGO) Parameters:

Trigger Event Selection	Reset (UG bit from TIMx_EGR)

2.16. USART3

Mode: Asynchronous

2.16.1. Parameter Settings:

Basic Parameters:

Baud Rate	115200
Word Length	8 Bits (including Parity)
Parity	None
Stop Bits	1

Advanced Parameters:

Data Direction	Receive and Transmit
Over Sampling	16 Samples

2.17. USB_OTG_FS

Mode: Device_Only

mode: Activate_VBUS

2.17.1. Parameter Settings:

Speed	Device Full Speed 12MBit/s
Low power	Disabled
VBUS sensing	Enabled
Signal start of frame	Disabled

2.18. STMicroelectronics.X-CUBE-BLE2.3.3.0

mode: WirelessJjBlueNRGAa2

2.18.1. Parameter Settings:

Log & Debug:

BLE2_DEBUG	0: No debug message
PRINT_CSV_FORMAT	0: .csv format message print disabled

BLUENRG2_DEBUG	0: No debug message

Basic Parameters:

HCI_READ_PACKET_SIZE	128
HCI_MAX_PAYLOAD_SIZE	128
HCI_READ_PACKET_NUM_MAX	**32 ***

Connection Parameters (for expert users):

Scan Interval (SCAN_P)	16384
Scan Window (SCAN_L)	16384
Supervision Timeout (SUPERV_TIMEOUT)	60
Min Connection Period (CONN_P1)	40
Max Connection Period (CONN_P2)	40
Min Connection Length (CONN_L1)	2000
Max Connection Length (CONN_L2)	2000
Advertising Type (ADV_DATA_TYPE)	Connectable Undirected Advertising (ADV_IND)
Min Advertising Interval (ADV_INTERV_MIN)	**1600 ***
Max Advertising Interval (ADV_INTERV_MAX)	**1600 ***
Min Connection Event Interval (L2CAP_INTERV_MIN)	9
Max Connection Event Interval (L2CAP_INTERV_MAX)	20
Timeout Multiplier (L2CAP_TIMEOUT_MULTIPLIER)	600

2.18.2. Platform Settings:

Exti Line	PC4
BUS IO driver	SPI1
Reset Line	PC9
CS Line	PA4

2.19. USB_DEVICE

Class For FS IP: Communication Device Class (Virtual Port Com)

2.19.1. Parameter Settings:

Basic Parameters:

USBD_MAX_NUM_INTERFACES (Maximum number of supported interfaces)	1
USBD_MAX_NUM_CONFIGURATION (Maximum number of supported configuration)	1
USBD_MAX_STR_DESC_SIZ (Maximum size for the string descriptors)	512
USBD_SELF_POWERED (Enabled self power)	Enabled
USBD_DEBUG_LEVEL (USBD Debug Level)	0: No debug message

Class Parameters:

USB CDC Rx Buffer Size	1024
USB CDC Tx Buffer Size	1024

2.19.2. Device Descriptor:

Device Descriptor:

VID (Vendor IDentifier)	1155
LANGID_STRING (Language Identifier)	English(United States)
MANUFACTURER_STRING (Manufacturer Identifier)	STMicroelectronics

Device Descriptor FS:

PID (Product IDentifier)	22336
PRODUCT_STRING (Product Identifier)	STM32 Virtual ComPort
CONFIGURATION_STRING (Configuration Identifier)	CDC Config
INTERFACE_STRING (Interface Identifier)	CDC Interface

*** 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	PA1	ADC1_IN1	Analog mode	n/a	n/a	ADC1_IN1
	PA2	ADC1_IN2	Analog mode	n/a	n/a	ADC1_IN2
	PA3	ADC1_IN3	Analog mode	n/a	n/a	ADC1_IN3
CAN1	PB8	CAN1_RX	Input mode	**Pull-up ***	n/a	CAN1_RX
	PB9	CAN1_TX	Alternate Function Push Pull	**n/a**	**High ***	CAN1_TX
I2C1	PB6	I2C1_SCL	Alternate Function Open Drain	n/a	**High ***	I2C1_SCL
	PB7	I2C1_SDA	Alternate Function Open Drain	n/a	**High ***	I2C1_SDA
I2C2	PB10	I2C2_SCL	Alternate Function Open Drain	n/a	**High ***	I2C2_SCL
	PB11	I2C2_SDA	Alternate Function Open Drain	n/a	**High ***	I2C2_SDA
RCC	PC14-OSC32_IN	RCC_OSC32_IN	n/a	n/a	n/a	
	PC15-OSC32_OUT	RCC_OSC32_OUT	n/a	n/a	n/a	
	PD0-OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	
	PD1-OSC_OUT	RCC_OSC_OUT	n/a	n/a	n/a	
SPI1	PA5	SPI1_SCK	Alternate Function Push Pull	n/a	**High ***	SPI1_SCK
	PA6	SPI1_MISO	Input mode	No pull-up and no pull-down	**n/a**	SPI1_MISO
	PA7	SPI1_MOSI	Alternate Function Push Pull	n/a	**High ***	SPI1_MOSI
SPI2	PB13	SPI2_SCK	Alternate Function Push Pull	n/a	**High ***	D5_LCD_SPI2_SCK
	PB15	SPI2_MOSI	Alternate Function Push Pull	n/a	**High ***	D7_LCD_SPI2_MOSI
SYS	PA13	SYS_JTMS-SWDIO	n/a	n/a	n/a	
	PA14	SYS_JTCK-SWCLK	n/a	n/a	n/a	
	PA15	SYS_JTDI	n/a	n/a	n/a	
	PB3	SYS_JTDO	n/a	n/a	n/a	
USART3	PC10	USART3_TX	Alternate Function Push Pull	n/a	**High ***	USART3_TX
	PC11	USART3_RX	Input mode	**Pull-up ***	**n/a**	USART3_RX
USB_OTG_FS	PA9	USB_OTG_FS_VBUS	Input mode	No pull-up and no pull-down	n/a	

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
	PA11	USB_OTG_FS_DM	n/a	n/a	n/a	
	PA12	USB_OTG_FS_DP	n/a	n/a	n/a	
GPIO	PC13-TAMPER-RTC	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**High ***	CCS811_nWAKE
	PC0	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**High ***	RS_LCD
	PC1	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**High ***	SEL_1
	PC2	GPIO_EXTI2	**External Interrupt Mode with Falling edge trigger detection**	**Pull-up ***	**n/a**	IO_EXP_INT
	PA0-WKUP	GPIO_EXTI0	**External Interrupt Mode with Rising/Falling edge**	No pull-up and no pull-down	**n/a**	BUTTON
	PA4	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**High ***	SPI1_NSS
	PC4	GPIO_EXTI4	External Interrupt Mode with Rising edge trigger detection	**Pull-down ***	**n/a**	D3_LCD_BLE_INT
	PC5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**High ***	D2_LCD_BLE_CS
	PB0	GPIO_Output	Output Push Pull	**Pull-down ***	Low	RESTART
	PB1	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**High ***	SEL_3
	PB12	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**High ***	D4_LCD_SPI2_NSS
	PB14	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**High ***	D6_LCD_SPI2_MISO
	PC8	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**High ***	SEL_0
	PC9	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**High ***	D1_LCD_BLE_RST
	PA10	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**High ***	SEL_2
	PC12	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**High ***	PC_12_LED
	PD2	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**High ***	EN_LCD

3.2. DMA configuration

DMA request	Stream	Direction	Priority
I2C1_TX	DMA1_Channel6	Memory To Peripheral	Low
I2C1_RX	DMA1_Channel7	Peripheral To Memory	Low
ADC1	DMA1_Channel1	Peripheral To Memory	Low
USART3_RX	DMA1_Channel3	Peripheral To Memory	Low
USART3_TX	DMA1_Channel2	Memory To Peripheral	Low

I2C1_TX: DMA1_Channel6 DMA request Settings:

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

I2C1_RX: DMA1_Channel7 DMA request Settings:

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

ADC1: DMA1_Channel1 DMA request Settings:

Mode:	**Circular ***
Peripheral Increment:	Disable
Memory Increment:	**Enable ***
Peripheral Data Width:	Half Word
Memory Data Width:	Half Word

USART3_RX: DMA1_Channel3 DMA request Settings:

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

Memory Data Width:	Byte

USART3_TX: DMA1_Channel2 DMA request Settings:

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

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	0	0
RTC global interrupt	true	7	0
RCC global interrupt	true	1	0
EXTI line0 interrupt	true	15	0
EXTI line2 interrupt	true	3	0
EXTI line4 interrupt	true	3	0
DMA1 channel1 global interrupt	true	4	0
DMA1 channel2 global interrupt	true	4	0
DMA1 channel3 global interrupt	true	4	0
DMA1 channel6 global interrupt	true	2	0
DMA1 channel7 global interrupt	true	2	0
CAN1 TX interrupt	true	1	0
CAN1 RX0 interrupt	true	3	0
TIM1 capture compare interrupt	true	2	0
TIM3 global interrupt	true	5	0
I2C1 event interrupt	true	2	0
USART3 global interrupt	true	4	0
TIM6 global interrupt	true	5	0
TIM7 global interrupt	true	5	0
USB OTG FS global interrupt	true	1	0
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
ADC1 and ADC2 global interrupts	unused		
CAN1 RX1 interrupt	unused		
CAN1 SCE interrupt	unused		
TIM1 break interrupt	unused		
TIM1 update interrupt	unused		
TIM1 trigger and commutation interrupts	unused		
I2C1 error interrupt	unused		
I2C2 event interrupt	unused		

Interrupt Table	Enable	Preenmption Priority	SubPriority
I2C2 error interrupt	unused		
SPI1 global interrupt	unused		
SPI2 global interrupt	unused		
RTC alarm interrupt through EXTI line 17	unused		

3.3.2. NVIC Code generation

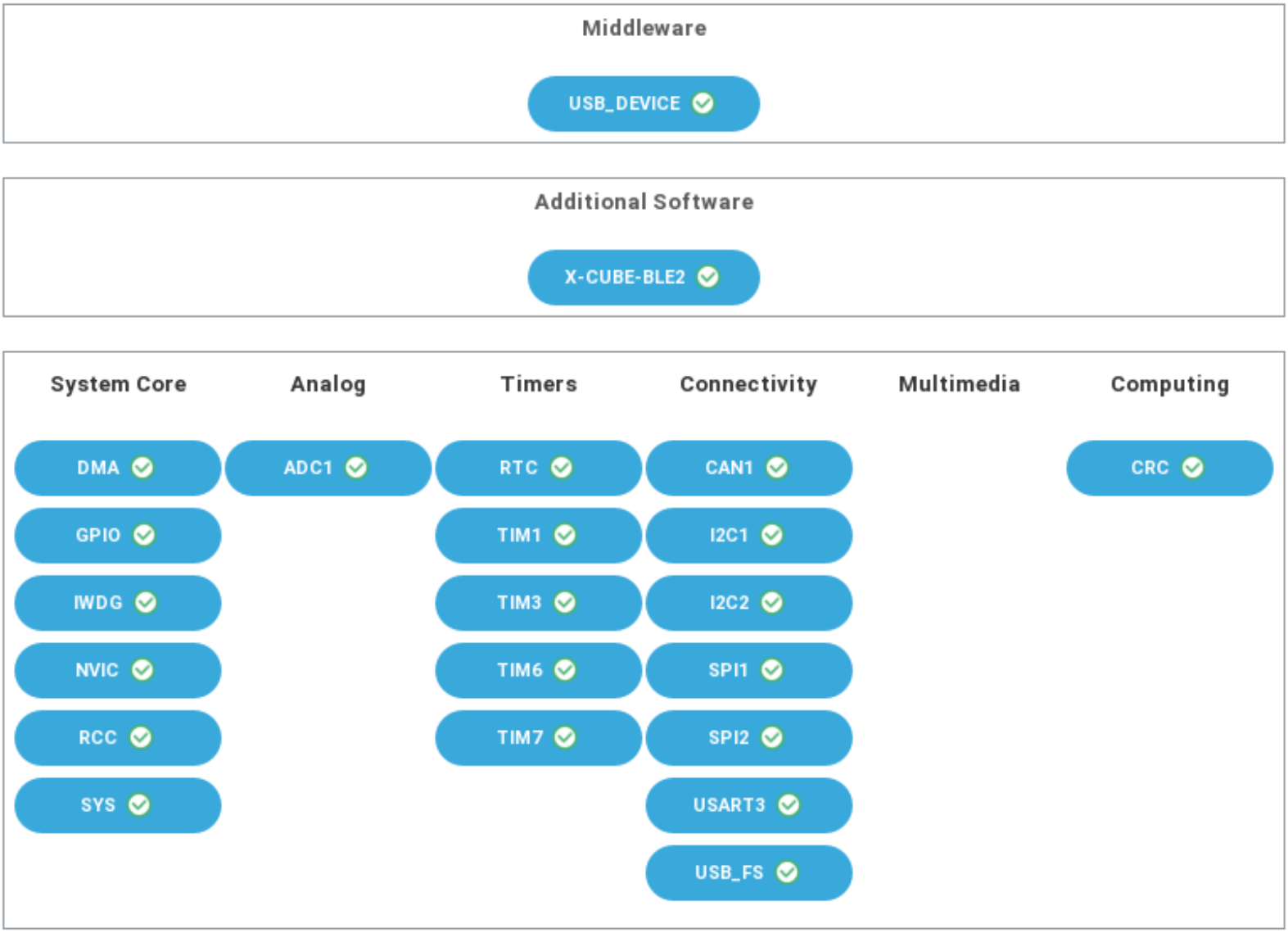
Enabled interrupt Table	Select for init sequence ordering	Generate IRQ handler	Call HAL handler
Non maskable interrupt	false	true	false
Hard fault interrupt	false	true	false
Memory management fault	false	true	false
Prefetch fault, memory access fault	false	true	false
Undefined instruction or illegal 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
RTC global interrupt	false	true	true
RCC global interrupt	false	true	false
EXTI line0 interrupt	false	true	true
EXTI line2 interrupt	false	true	true
EXTI line4 interrupt	false	true	true
DMA1 channel1 global interrupt	false	true	true
DMA1 channel2 global interrupt	false	true	true
DMA1 channel3 global interrupt	false	true	true
DMA1 channel6 global interrupt	false	true	true
DMA1 channel7 global interrupt	false	true	true
CAN1 TX interrupt	false	true	true
CAN1 RX0 interrupt	false	true	true
TIM1 capture compare interrupt	false	true	true
TIM3 global interrupt	false	true	true
I2C1 event interrupt	false	true	true
USART3 global interrupt	false	true	true
TIM6 global interrupt	false	true	true
TIM7 global interrupt	false	true	true
USB OTG FS global interrupt	false	true	true

*** User modified value**

4. System Views

4.1. Category view

4.1.1. Current



5. Software Pack Report

5.1. Software Pack selected

Vendor	Name	Version	Component
STMicroelectronics	X-CUBE-BLE2	3.3.0	Class : Wireless Group : BlueNRG-2 SubGroup : Controller Version : 3.3.0 Class : Wireless Group : BlueNRG-2 SubGroup : HCI_TL Variant : Basic Version : 3.3.0 Class : Wireless Group : BlueNRG-2 SubGroup : HCI_TL_INTERFACE Variant : UserBoard Version : 3.3.0 Class : Wireless Group : BlueNRG-2 SubGroup : Utils Version : 3.3.0

6. Docs & Resources

Type	Link
BSDL files	https://www.st.com/resource/en/bsdl_model/stm32f1_bsdl.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
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
Brochures	https://www.st.com/resource/en/brochure/breveco0518.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/flstm32nucleo.pdf
Flyers	https://www.st.com/resource/en/flyer/flstmcsuite.pdf
Flyers	https://www.st.com/resource/en/flyer/fldpstpfc11120.pdf
Product Certifications	https://www.st.com/resource/en/certification_document/1239988349.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/an2586-getting-started-with-stm32f10xxx-hardware-development-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/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/an3108-stlm75-firmware-library-for-the-stm32f10x-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/an3128-stm32-embedded-graphic-objectstouchscreen-library-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/an3422-migration-of-microcontroller-applications-from-stm32f1-to-stm32l1-series-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an3427-migrating-a-microcontroller-application-from-stm32f1-to-stm32f2-series-

	stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an3429-stm32-proprietary-code-protection-overview-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/an4088-migrating-between-stm32f1-and-stm32f0-series-microcontrollers-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an4228-migrating-from-stm32f1-series-to-stm32f3-series-microcontrollers-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an4229-how-to-implement-a-vocoder-solution-using-stm32-microcontrollers-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
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/an4649-migrating-from-stm32f1-series-to-stm32l4-series--stm32l4-series-microntrollers-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/an4724-stm32cube-firmware-examples-for-stm32f1-series-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/an4904-migration-of-microcontroller-applications-from-stm32f1-series-to-stm32f4-access-lines-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an4908-stm32-usart-automatic-baud-rate-detection-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/an5036-thermal-management-guidelines-for-stm32-applications-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an5225-usb-typec-power-delivery-using-stm32-mcus-and-mpus-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an5543-enhanced-methods-to-handle-spi-communication-on-stm32-devices-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/an5156-introduction-to-stm32-microcontrollers-security-stmicroelectronics.pdf
Application Notes	https://www.st.com/resource/en/application_note/an2548-using-the-stm32f0f1f3cxgxlx-series-dma-controller-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/an4879-introduction-to-usb-hardware-and-pcb-guidelines-using-stm32-mcus-stmicroelectronics.pdf
Application Notes for related Tools	https://www.st.com/resource/en/application_note/an1202_freertos_guide-freertos-guide-stmicroelectronics.pdf

& Software	
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
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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 for related Tools & Software	https://www.st.com/resource/en/application_note/an2557-stm32f10x-inapplication-programming-using-the-usart-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an2592-achieving-32bit-timer-resolution-with-software-expansion-for-stm32cube-and-standard-peripheral-library-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an2656-stm32f10xxx-lcd-glass-driver-firmware-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an2668-improving-stm32f1-series-stm32f3-series-and-stm32lx-series-adc-resolution-by-oversampling-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an2790-tft-lcd-interfacing-with-the-highdensity-stm32f10xxx-fsmc-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an2821-clockcalendar-implementation-on-the-stm32f10xxx-microcontroller-rtc-stmicroelectronics.pdf

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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	https://www.st.com/resource/en/application_note/an3354-stm32f105107-

for related Tools & Software	inapplication-programming-using-a-usb-host-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/an4435-guidelines-for-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/an4453-implementing-the-adpcm-algorithm-in-stm32l1xx-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/an4657-stm32-inapplication-programming-iap-using-the-usart-stmicroelectronics.pdf
Application Notes for related Tools & Software	https://www.st.com/resource/en/application_note/an4724-stm32cube-firmware-examples-for-stm32f1-series-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/an5054-secure-programming-using-stm32cubeprogrammer-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	https://www.st.com/resource/en/application_note/an5394-getting-started-with-projects-based-on-the-stm32l5-series-in-stm32cubeide-

& Software	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
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/an4502-stm32-smbuspmbus-expansion-package-for-stm32cube-stmicroelectronics.pdf
Errata Sheets	https://www.st.com/resource/en/errata_sheet/es022-stm32f105xx-stm32f107xx-device-errata-stmicroelectronics.pdf
Datasheet	https://www.st.com/resource/en/datasheet/cd00220364.pdf
Programming Manuals	https://www.st.com/resource/en/programming_manual/pm0056-stm32f10xxx20xxx21xxxl1xxxx-cortexm3-programming-manual-stmicroelectronics.pdf
Programming Manuals	https://www.st.com/resource/en/programming_manual/pm0075-stm32f10xxx-flash-memory-microcontrollers-stmicroelectronics.pdf
Reference Manuals	https://www.st.com/resource/en/reference_manual/rm0008-stm32f101xx-stm32f102xx-stm32f103xx-stm32f105xx-and-stm32f107xx-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
User Manuals	https://www.st.com/resource/en/user_manual/um1561-stevalisv003v1-firmware-user-manual-stmicroelectronics.pdf