
STM32
CubeMX

1. Description

1.1. Project

Project Name	Wi-Fi_STMeteo
Board Name	custom
Generated with:	STM32CubeMX 6.14.0
Date	04/04/2025

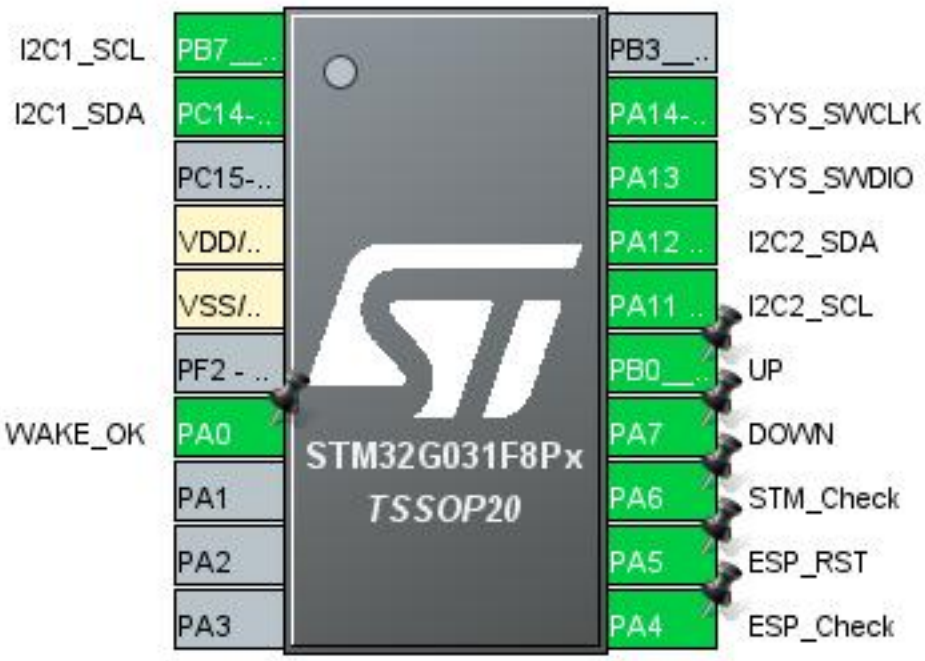
1.2. MCU

MCU Series	STM32G0
MCU Line	STM32G0x1
MCU name	STM32G031F8Px
MCU Package	TSSOP20
MCU Pin number	29

1.3. Core(s) information

Core(s)	ARM Cortex-M0+

2. Pinout Configuration

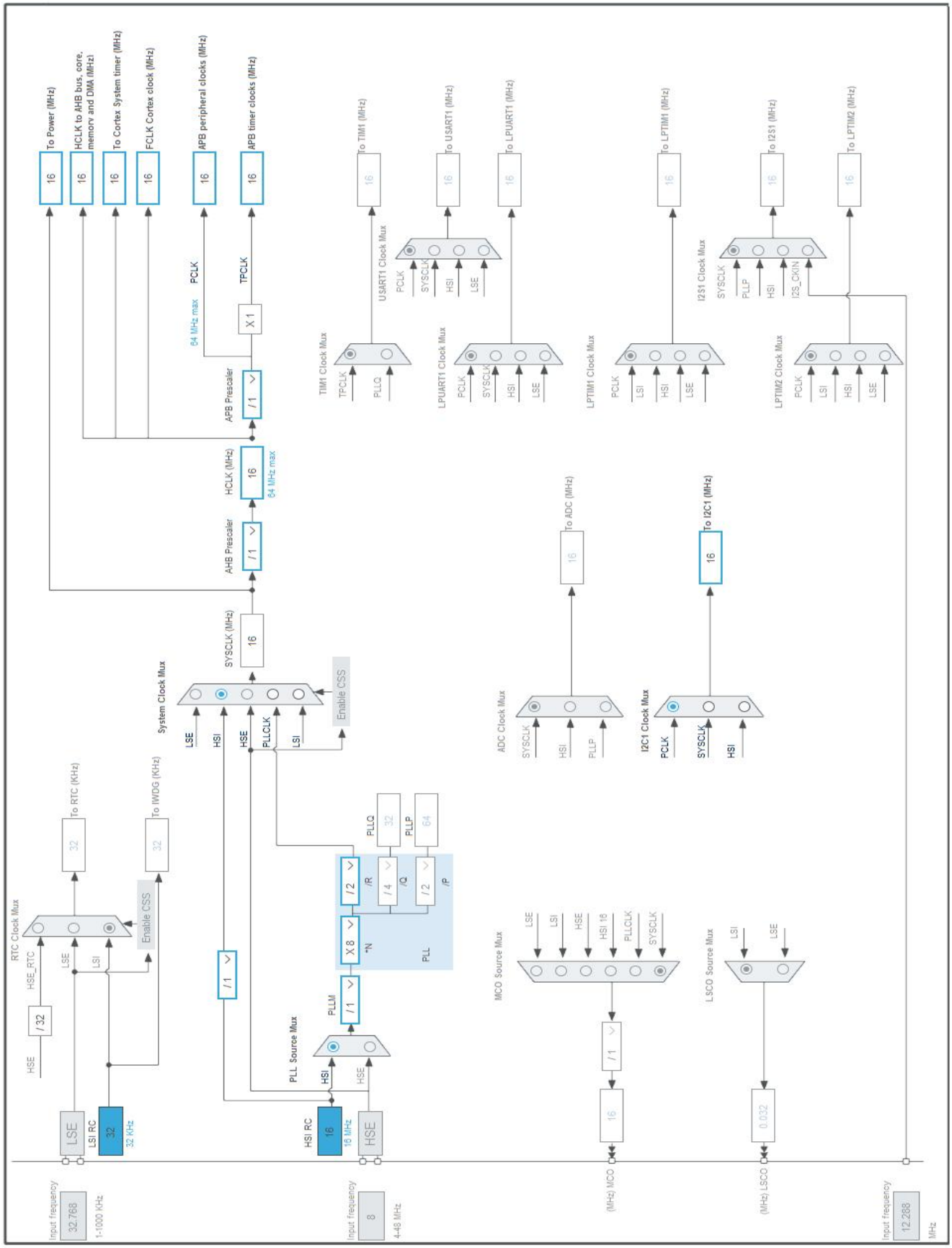


3. Pins Configuration

Pin Number TSSOP20	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	PB8	I/O	I2C1_SCL	
2	PB9	I/O	I2C1_SDA	
4	VDD/VDDA	Power		
5	VSS/VSSA	Power		
7	PA0 *	I/O	GPIO_Input	WAKE_OK
11	PA4 *	I/O	GPIO_Input	ESP_Check
12	PA5 *	I/O	GPIO_Output	ESP_RST
13	PA6 *	I/O	GPIO_Output	STM_Check
14	PA7 *	I/O	GPIO_Input	DOWN
15	PB0 *	I/O	GPIO_Input	UP
16	PA11 [PA9]	I/O	I2C2_SCL	
17	PA12 [PA10]	I/O	I2C2_SDA	
18	PA13	I/O	SYS_SWDIO	
19	PA14-BOOT0	I/O	SYS_SWCLK	

* The pin is affected with an I/O function

4. Clock Tree Configuration



1. Power Consumption Calculator report

1.1. Microcontroller Selection

Series	STM32G0
Line	STM32G0x1
MCU	STM32G031F8Px
Datasheet	DS12992_Rev0

1.2. Parameter Selection

Temperature	25
Vdd	3.0

1.3. Battery Selection

Battery	Li-SOCL2(AAA700)
Capacity	700.0 mAh
Self Discharge	0.08 %/month
Nominal Voltage	3.6 V
Max Cont Current	10.0 mA
Max Pulse Current	30.0 mA
Cells in series	1
Cells in parallel	1

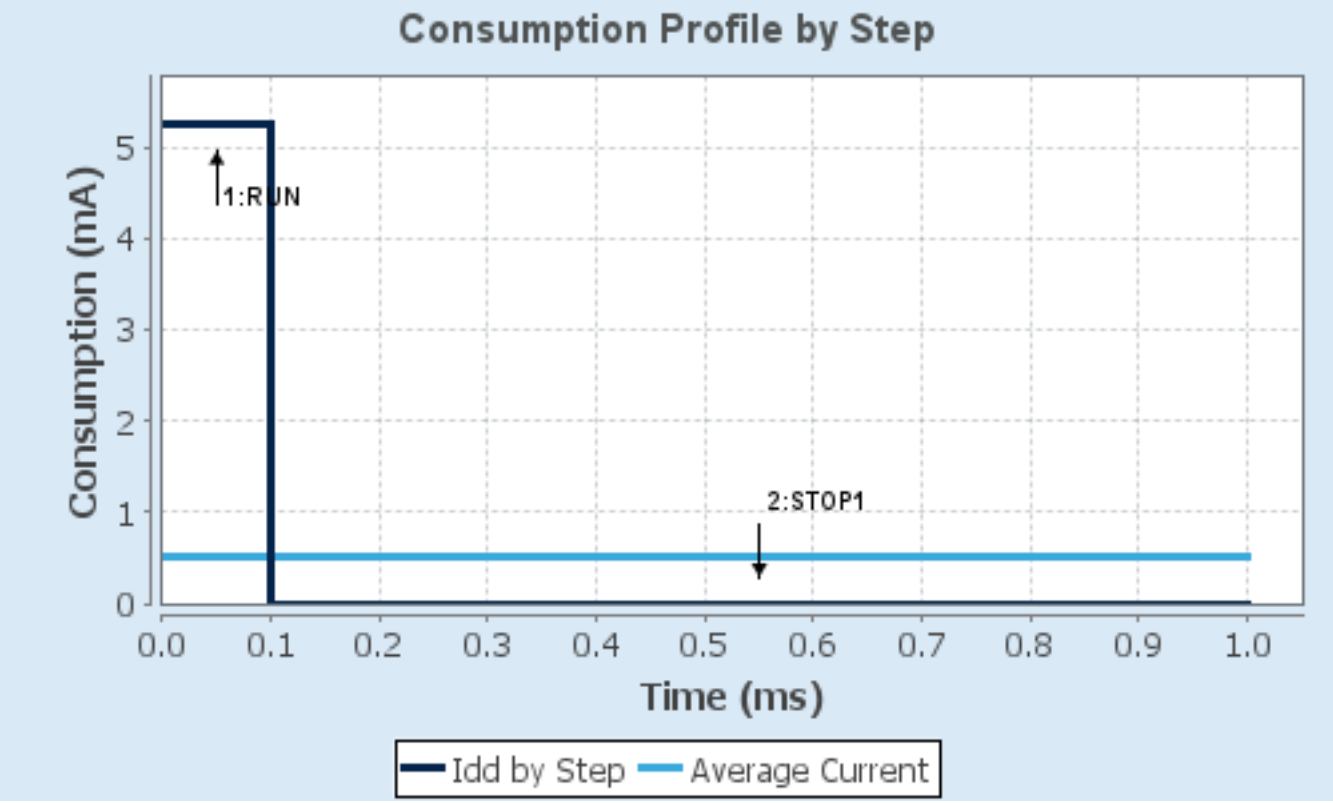
1.4. Sequence

Step	Step1	Step2
Mode	RUN	STOP1
Vdd	3.0	3.0
Voltage Source	Battery	Battery
Range	Range1-High	Range1-High
Fetch Type	FLASH	Flash-PowerDown
CPU Frequency	64 MHz	16 MHz
Clock Configuration	HSI PLL	HSI
Clock Source Frequency	16 MHz	16 MHz
Peripherals		
Additional Cons.	0 mA	0 mA
Average Current	5.25 mA	3.36 µA
Duration	0.1 ms	0.9 ms
DMIPS	80.0	0.0
Ta Max	128.8	130
Category	In DS Table	In DS Table

1.5. Results

Sequence Time	1 ms	Average Current	528.02 µA
Battery Life	1 month, 24 days, 17 hours	Average DMIPS	80.0 DMIPS

1.6. Chart


Consumption Profile by Step
Consumption (mA)
0
1
2
3
4
5
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	Wi-Fi_STMeteo
Project Folder	D:\STM32Proj\Wi-Fi_STMeteo
Toolchain / IDE	STM32CubeIDE
Firmware Package Name and Version	STM32Cube FW_G0 V1.6.2
Application Structure	Advanced
Generate Under Root	Yes
Do not generate the main()	No
Minimum Heap Size	0x200
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	SystemClock_Config	RCC
2	MX_GPIO_Init	GPIO
3	MX_I2C1_Init	I2C1
4	MX_I2C2_Init	I2C2

3. Peripherals and Middlewares Configuration

3.1. I2C1

I2C: I2C

3.1.1. 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	**0x00503D58 ***

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

3.2. I2C2

mode: I2C

3.2.1. 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	**0x00503D58 ***

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

3.3. RCC

3.3.1. 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	64
HSE Startup Timout Value (ms)	100
LSE Startup Timout Value (ms)	5000

Power Parameters:

Power Regulator Voltage Scale	Power Regulator Voltage Scale 1

Peripherals Clock Configuration:

Generate the peripherals clock configuration	TRUE

3.4. SYS

mode: Debug

Timebase Source: SysTick

*** User modified value**

4. System Configuration

4.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
I2C1	PB8	I2C1_SCL	Alternate Function Open Drain	No pull-up and no pull-down	**High ***	
	PB9	I2C1_SDA	Alternate Function Open Drain	No pull-up and no pull-down	**High ***	
I2C2	PA11 [PA9]	I2C2_SCL	Alternate Function Open Drain	No pull-up and no pull-down	**High ***	
	PA12 [PA10]	I2C2_SDA	Alternate Function Open Drain	No pull-up and no pull-down	**High ***	
SYS	PA13	SYS_SWDIO	n/a	n/a	n/a	
	PA14-BOOT0	SYS_SWCLK	n/a	n/a	n/a	
GPIO	PA0	GPIO_Input	Input mode	**Pull-up ***	n/a	WAKE_OK
	PA4	GPIO_Input	Input mode	**Pull-down ***	n/a	ESP_Check
	PA5	GPIO_Output	Output Push Pull	**Pull-down ***	**Very High ***	ESP_RST
	PA6	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**Very High ***	STM_Check
	PA7	GPIO_Input	Input mode	**Pull-up ***	**n/a**	DOWN
	PB0	GPIO_Input	Input mode	**Pull-up ***	**n/a**	UP

4.2. DMA configuration

nothing configured in DMA service

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
System service call via SWI instruction	true	0	0
Pendable request for system service	true	0	0
System tick timer	true	0	0
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
I2C1 event global interrupt / I2C1 wake-up interrupt through EXTI line 23	unused		
I2C2 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
System service call via SWI instruction	false	true	false
Pendable request for system service	false	true	false
System tick timer	false	true	true

*** User modified value**

5. System Views

5.1. Category view

5.1.1. Current

6. Docs & Resources

Type	Link