

1. Description

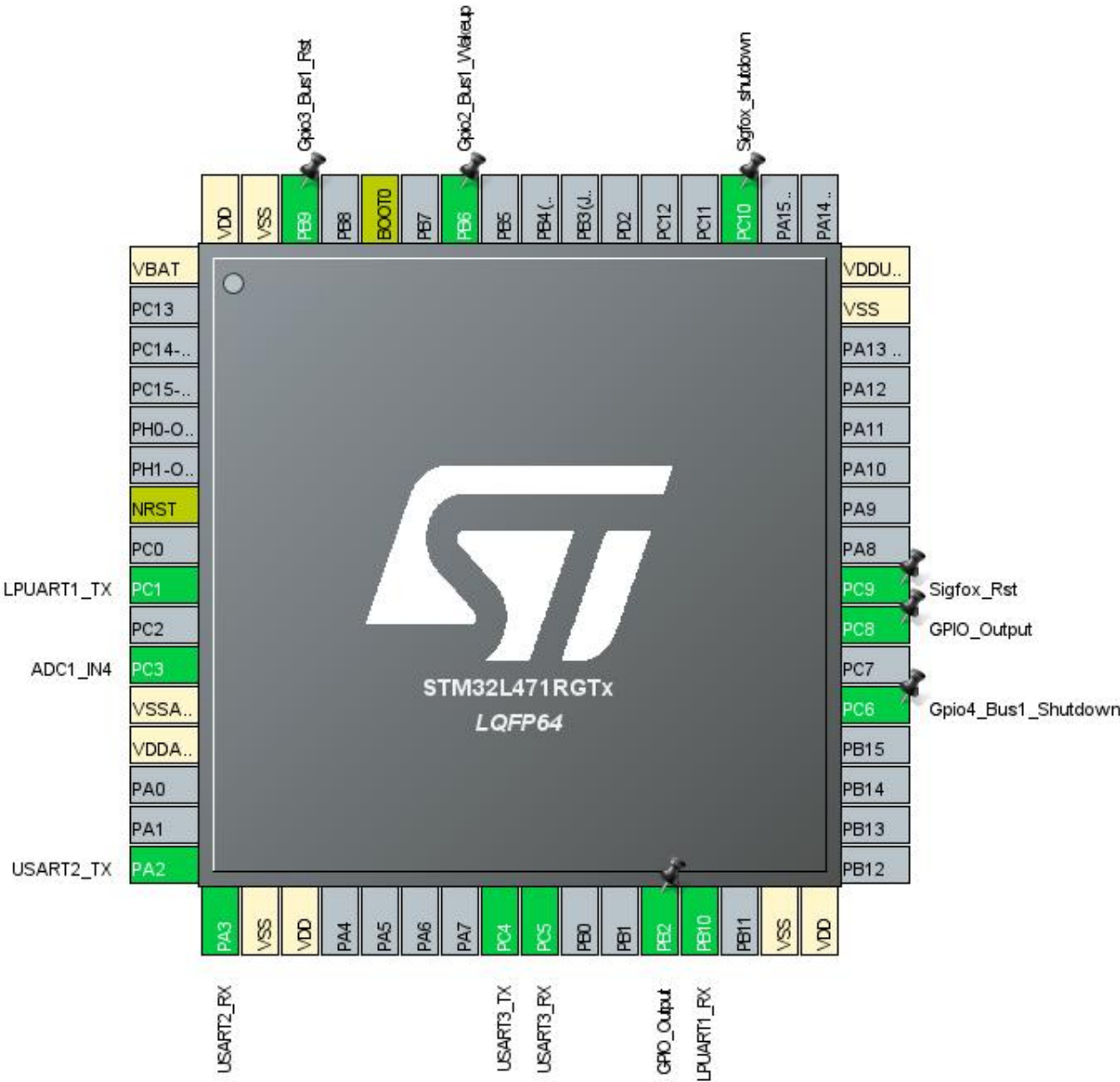
1.1. Project

Project Name	Gateway_prueba_prog
Board Name	custom
Generated with:	STM32CubeMX 5.2.1
Date	07/24/2019

1.2. MCU

MCU Series	STM32L4
MCU Line	STM32L4x1
MCU name	STM32L471RGTx
MCU Package	LQFP64
MCU Pin number	64

2. Pinout Configuration

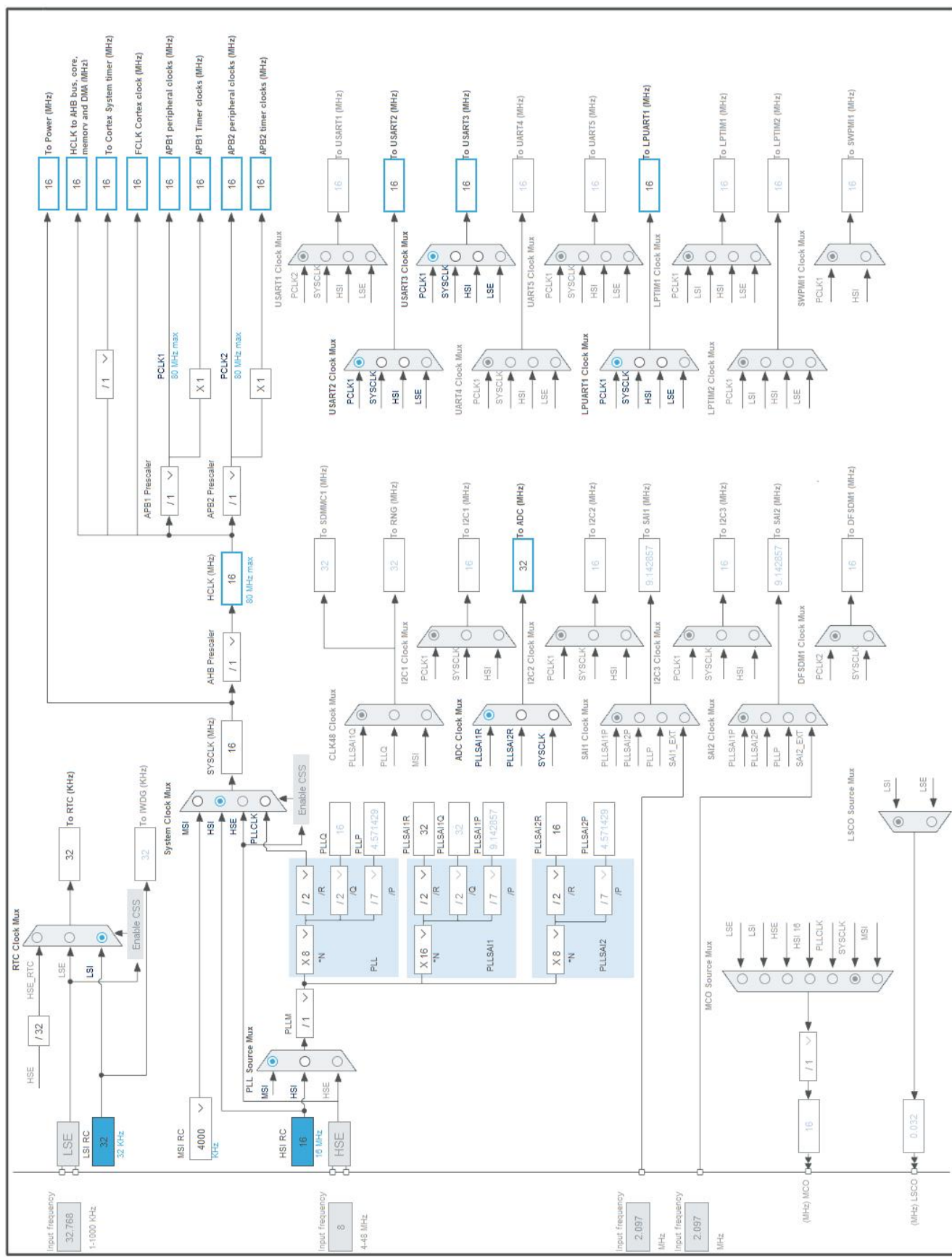


3. Pins Configuration

Pin Number LQFP64	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VBAT	Power		
7	NRST	Reset		
9	PC1	I/O	LPUART1_TX	
11	PC3	I/O	ADC1_IN4	
12	VSSA/VREF-	Power		
13	VDDA/VREF+	Power		
16	PA2	I/O	USART2_TX	
17	PA3	I/O	USART2_RX	
18	VSS	Power		
19	VDD	Power		
24	PC4	I/O	USART3_TX	
25	PC5	I/O	USART3_RX	
28	PB2 *	I/O	GPIO_Output	
29	PB10	I/O	LPUART1_RX	
31	VSS	Power		
32	VDD	Power		
37	PC6 *	I/O	GPIO_Output	Gpio4_Bus1_Shutdown
39	PC8 *	I/O	GPIO_Output	
40	PC9 *	I/O	GPIO_Output	Sigfox_Rst
47	VSS	Power		
48	VDDUSB	Power		
51	PC10 *	I/O	GPIO_Output	Sigfox_shutdown
58	PB6 *	I/O	GPIO_Output	Gpio2_Bus1_Wakeup
60	BOOT0	Boot		
62	PB9 *	I/O	GPIO_Output	Gpio3_Bus1_Rst
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	Gateway_prueba_prog
Project Folder	C:\Users\ingeniero04\Desktop\LORA\Gateway_prueba_prog
Toolchain / IDE	STM32CubeIDE
Firmware Package Name and Version	STM32Cube FW_L4 V1.14.0

5.2. Code Generation Settings

Name	Value
STM32Cube Firmware Library Package	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
Delete previously generated files when not re-generated	Yes
Set all free pins as analog (to optimize the power consumption)	No

6. Power Consumption Calculator report

6.1. Microcontroller Selection

Series	STM32L4
Line	STM32L4x1
MCU	STM32L471RGTx
Datasheet	027226_Rev1

6.2. Parameter Selection

Temperature	25
Vdd	3.0

7. IPs and Middleware Configuration

7.1. ADC1

IN4: IN4 Single-ended

7.1.1. Parameter Settings:

ADCs_Common_Settings:

Mode Independent mode

ADC_Settings:

Clock Prescaler Asynchronous clock mode divided by 1

Resolution ADC 12-bit resolution

Data Alignment Right alignment

Scan Conversion Mode Disabled

Continuous Conversion Mode Disabled

Discontinuous Conversion Mode Disabled

DMA Continuous Requests Disabled

End Of Conversion Selection End of single conversion

Overrun behaviour Overrun data preserved

Low Power Auto Wait Disabled

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 4

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

7.2. LPUART1

Mode: Asynchronous

7.2.1. 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
Single Sample	Disable

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

7.3. RCC

7.3.1. Parameter Settings:

System Parameters:

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

RCC Parameters:

HSI Calibration Value	16
MSI Calibration Value	0
MSI Auto Calibration	Disabled
HSE Startup Timeout Value (ms)	100
LSE Startup Timeout Value (ms)	5000

Power Parameters:

Power Regulator Voltage Scale	Power Regulator Voltage Scale 1
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7.4. RTC

mode: Activate Clock Source

WakeUp: Internal WakeUp

7.4.1. Parameter Settings:

General:

Hour Format	Hourformat 24
Asynchronous Predivider value	127
Synchronous Predivider value	255

Wake UP:

Wake Up Clock	1 Hz *
Wake Up Counter	0

7.5. SYS

Timebase Source: SysTick

7.6. USART2

Mode: Asynchronous

7.6.1. Parameter Settings:

Basic Parameters:

Baud Rate	9600 *
Word Length	8 Bits (including Parity)
Parity	None
Stop Bits	1

Advanced Parameters:

Data Direction	Receive and Transmit
Over Sampling	16 Samples
Single Sample	Disable

Advanced Features:

Auto Baudrate	Disable
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

7.7. USART3

Mode: Asynchronous

7.7.1. Parameter Settings:

Basic Parameters:

Baud Rate	9600 *
Word Length	8 Bits (including Parity)
Parity	None
Stop Bits	1

Advanced Parameters:

Data Direction	Receive and Transmit
Over Sampling	16 Samples
Single Sample	Disable

Advanced Features:

Auto Baudrate	Disable
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

*** 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	PC3	ADC1_IN4	Analog mode for ADC conversion	No pull-up and no pull-down	n/a	
LPUART1	PC1	LPUART1_TX	Alternate Function Push Pull	No pull-up and no pull-down	Very High *	
	PB10	LPUART1_RX	Alternate Function Push Pull	No pull-up and no pull-down	Very High *	
USART2	PA2	USART2_TX	Alternate Function Push Pull	No pull-up and no pull-down	Very High *	
	PA3	USART2_RX	Alternate Function Push Pull	No pull-up and no pull-down	Very High *	
USART3	PC4	USART3_TX	Alternate Function Push Pull	No pull-up and no pull-down	Very High *	
	PC5	USART3_RX	Alternate Function Push Pull	No pull-up and no pull-down	Very High *	
GPIO	PB2	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PC6	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	Gpio4_Bus1_Shutdown
	PC8	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PC9	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	Sigfox_Rst
	PC10	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	Sigfox_shutdown
	PB6	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	Gpio2_Bus1_Wakeup
	PB9	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	Gpio3_Bus1_Rst

8.2. DMA configuration

nothing configured in DMA service

8.3. NVIC configuration

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
USART2 global interrupt	true	0	0
USART3 global interrupt	true	0	0
LPUART1 global interrupt	true	0	0
PVD/PVM1/PVM2/PVM3/PVM4 interrupts through EXTI lines 16/35/36/37/38	unused		
RTC wake-up interrupt through EXTI line 20	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
ADC1 and ADC2 interrupts	unused		
FPU global interrupt	unused		

* User modified value

9. Software Pack Report