1. Description

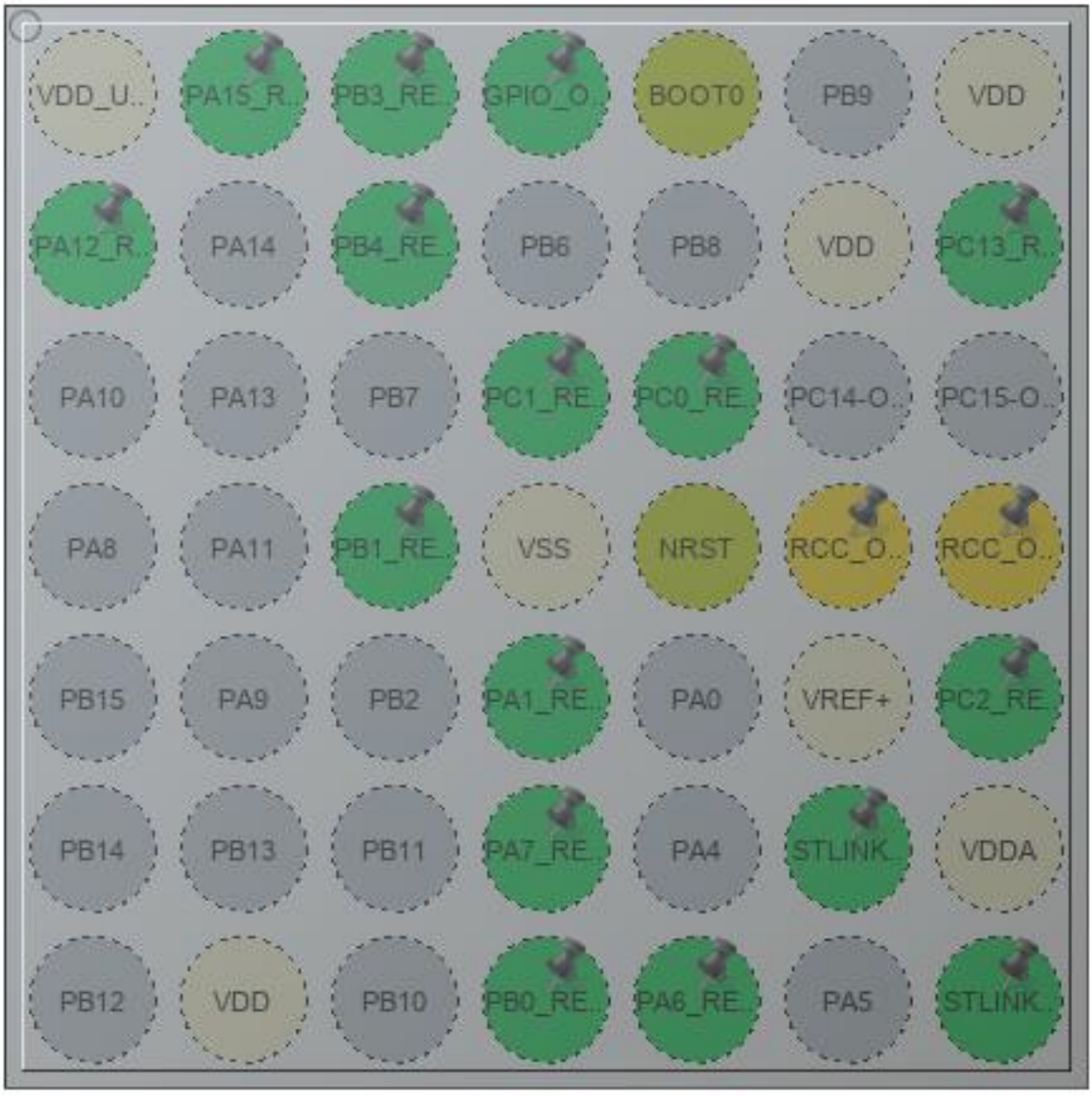
1.1. Project

Project Name	led_blink
Board Name	B-L072Z-LRWAN1
Generated with:	STM32CubeMX 5.5.0
Date	02/15/2020

1.2. MCU

MCU Series	STM32L0
MCU Line	STM32L0x2
MCU name	STM32L072CZYx
MCU Package	WLCSP49
MCU Pin number	49

2. Pinout Configuration



WLCSP49 (Top view)

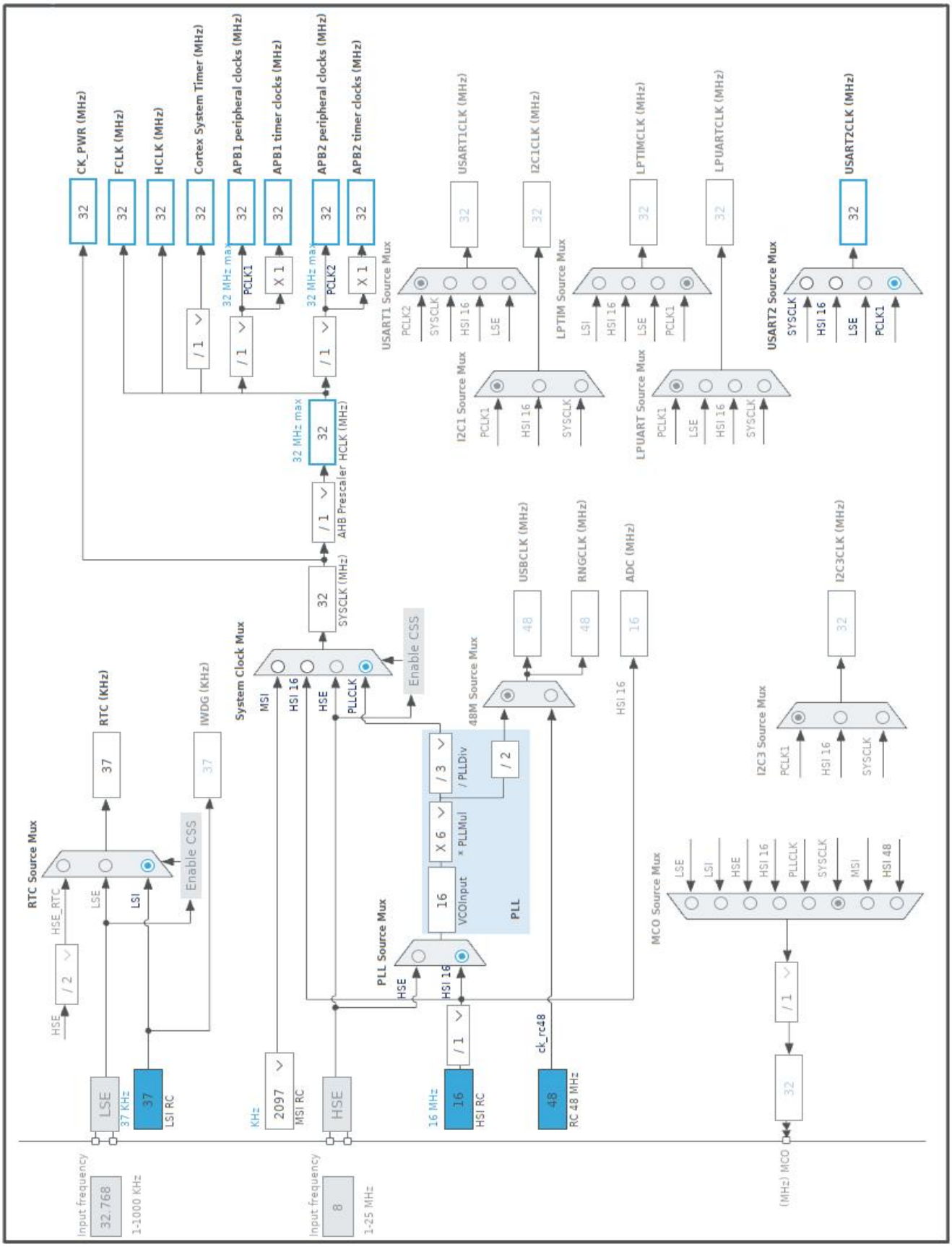
3. Pins Configuration

Pin Number WLCSP49	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
A1	VDD_USB	Power		
A2	PA15 *	I/O	GPIO_Output	PA15_RESERVED
A3	PB3	I/O	SPI1_SCK	PB3_RESERVED
A4	PB5 *	I/O	GPIO_Output	
A5	BOOT0	Boot		
A7	VDD	Power		
B1	PA12 *	I/O	GPIO_Output	PA12_RESERVED
B3	PB4	I/O	GPIO_EXTI4	PB4_RESERVED
B6	VDD	Power		
B7	PC13	I/O	GPIO_EXTI13	PC13_RESERVED
C4	PC1 *	I/O	GPIO_Output	PC1_RESERVED
C5	PC0 *	I/O	GPIO_Output	PC0_RESERVED
D3	PB1	I/O	GPIO_EXTI1	PB1_RESERVED
D4	VSS	Power		
D5	NRST	Reset		
D6	PH0-OSC_IN **	I/O	RCC_OSC_IN	
D7	PH1-OSC_OUT **	I/O	RCC_OSC_OUT	
E4	PA1 *	I/O	GPIO_Output	PA1_RESERVED
E6	VREF+	Power		
E7	PC2 *	I/O	GPIO_Output	PC2_RESERVED
F4	PA7	I/O	SPI1_MOSI	PA7_RESERVED
F6	PA2	I/O	USART2_TX	STLINK_RX
F7	VDDA	Power		
G2	VDD	Power		
G4	PB0	I/O	GPIO_EXTI0	PB0_RESERVED
G5	PA6	I/O	SPI1_MISO	PA6_RESERVED
G7	PA3	I/O	USART2_RX	STLINK_TX

* 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	led_blink
Project Folder	/home/rk42/STM32CubeIDE/workspace_1.2.0/led_blink
Toolchain / IDE	STM32CubeIDE
Firmware Package Name and Version	STM32Cube FW_L0 V1.11.2

5.2. 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
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	STM32L0
Line	STM32L0x2
MCU	STM32L072CZYx
Datasheet	027100_Rev3

6.2. Parameter Selection

Temperature	25
Vdd	3.0

7. IPs and Middleware Configuration

7.1. GPIO

7.2. RCC

7.2.1. Parameter Settings:

System Parameters:

VDD voltage (V)	3.3
Buffer Cache	Enabled
Prefetch	Disabled
Preread	Enabled
Flash Latency(WS)	1 WS (2 CPU cycle)

RCC Parameters:

HSI Calibration Value	16
MSI Calibration Value	0
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. RTC

mode: Activate Clock Source

mode: Activate Calendar

Alarm A: Internal Alarm A

7.3.1. Parameter Settings:

General:

Hour Format	Hourformat 24
Asynchronous Predivider value	**31 ***
Synchronous Predivider value	**1023 ***

Calendar Time:

Data Format	**Binary data format ***
Hours	0
Minutes	0
Seconds	0
Day Light Saving: value of hour adjustment	Daylightsaving None

Store Operation	Storeoperation Reset

Calendar Date:

Week Day	Monday
Month	January
Date	1
Year	0

Alarm A:

Hours	0
Minutes	0
Seconds	0
Sub Seconds	0
Alarm Mask Date Week day	Disable
Alarm Mask Hours	Disable
Alarm Mask Minutes	Disable
Alarm Mask Seconds	Disable
Alarm Sub Second Mask	**SS[14:0] are compared and must match to activate alarm. ***
Alarm Date Week Day Sel	Date
Alarm Date	1

7.4. SPI1

Mode: Full-Duplex Master

7.4.1. Parameter Settings:

Basic Parameters:

Frame Format	Motorola
Data Size	8 Bits
First Bit	MSB First

Clock Parameters:

Prescaler (for Baud Rate)	**32 ***
Baud Rate	**1000.0 KBits/s ***
Clock Polarity (CPOL)	Low
Clock Phase (CPHA)	1 Edge

Advanced Parameters:

CRC Calculation	Disabled
NSS Signal Type	Software

7.5. SYS

Timebase Source: SysTick

7.6. USART2

Mode: Asynchronous

7.6.1. 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
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
SPI1	PB3	SPI1_SCK	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	PB3_RESERVED
	PA7	SPI1_MOSI	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	PA7_RESERVED
	PA6	SPI1_MISO	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	PA6_RESERVED
USART2	PA2	USART2_TX	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	STLINK_RX
	PA3	USART2_RX	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	STLINK_TX
Single Mapped Signals	PH0-OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	
	PH1-OSC_OUT	RCC_OSC_OUT	n/a	n/a	n/a	
GPIO	PA15	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**High ***	PA15_RESERVED
	PB5	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PA12	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**High ***	PA12_RESERVED
	PB4	GPIO_EXTI4	External Interrupt Mode with Rising edge trigger detection	No pull-up and no pull-down	**n/a**	PB4_RESERVED
	PC13	GPIO_EXTI13	External Interrupt Mode with Rising edge trigger detection	No pull-up and no pull-down	**n/a**	PC13_RESERVED
	PC1	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**High ***	PC1_RESERVED
	PC0	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**High ***	PC0_RESERVED
	PB1	GPIO_EXTI1	External Interrupt Mode with Rising edge trigger detection	No pull-up and no pull-down	**n/a**	PB1_RESERVED
	PA1	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**High ***	PA1_RESERVED
	PC2	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**High ***	PC2_RESERVED
	PB0	GPIO_EXTI0	External Interrupt Mode with Rising edge trigger detection	No pull-up and no pull-down	**n/a**	PB0_RESERVED

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
System service call via SWI instruction	true	0	0
Pendable request for system service	true	0	0
System tick timer	true	0	0
RTC global interrupt through EXTI lines 17, 19 and 20 and LSE CSS interrupt through EXTI line 19	true	0	0
EXTI line 0 and line 1 interrupts	true	0	0
EXTI line 4 to 15 interrupts	true	0	0
USART2 global interrupt / USART2 wake-up interrupt through EXTI line 26	true	0	0
PVD interrupt through EXTI line 16	unused		
Flash and EEPROM global interrupt	unused		
RCC and CRS global interrupt	unused		
SPI1 global interrupt	unused		

*** User modified value**

9. Software Pack Report