1. Description

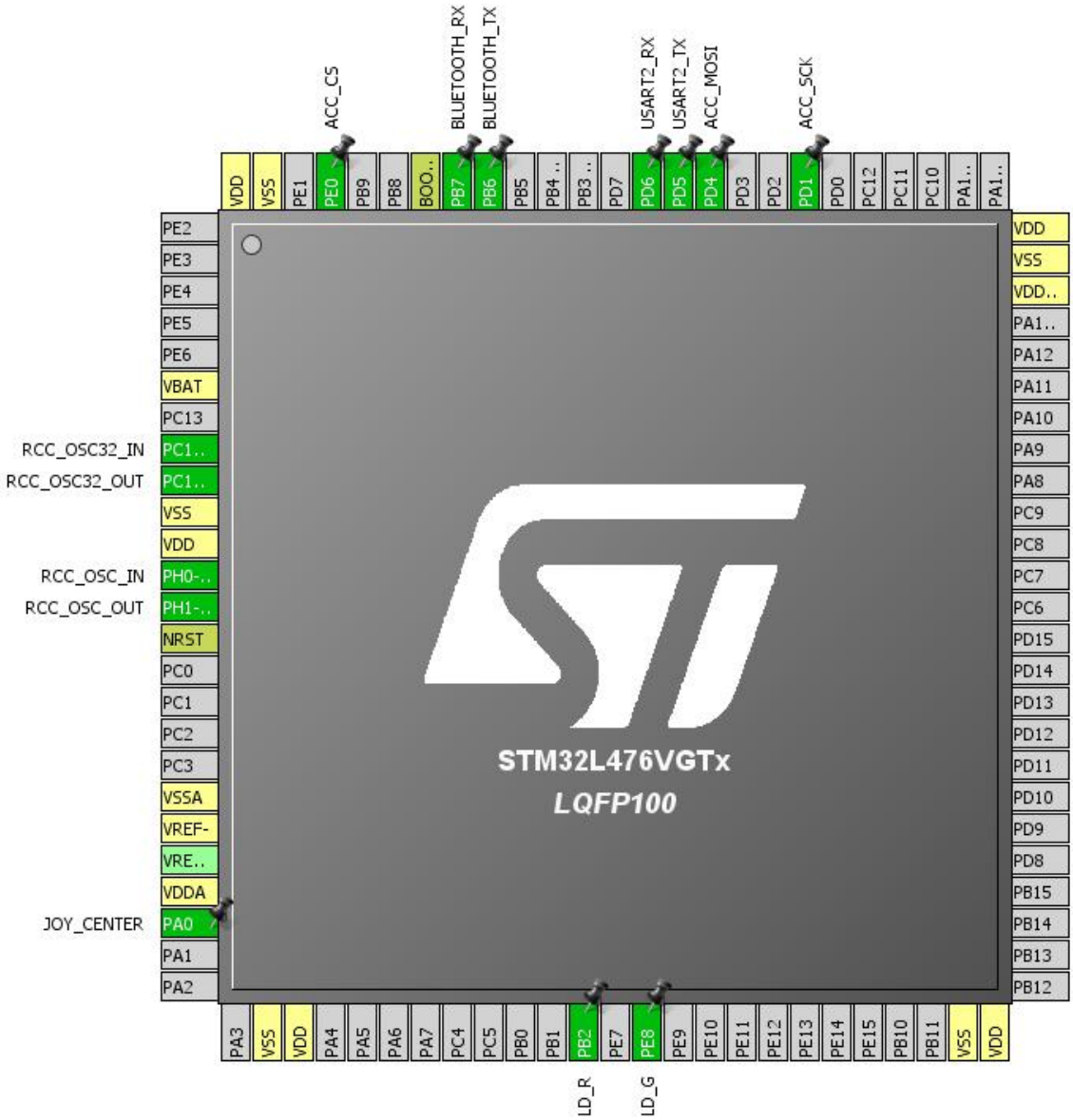
1.1. Project

Project Name	Projekt
Board Name	32L476GDISCOVERY
Generated with:	STM32CubeMX 4.25.1
Date	05/15/2018

1.2. MCU

MCU Series	STM32L4
MCU Line	STM32L4x6
MCU name	STM32L476VGTx
MCU Package	LQFP100
MCU Pin number	100

2. Pinout Configuration

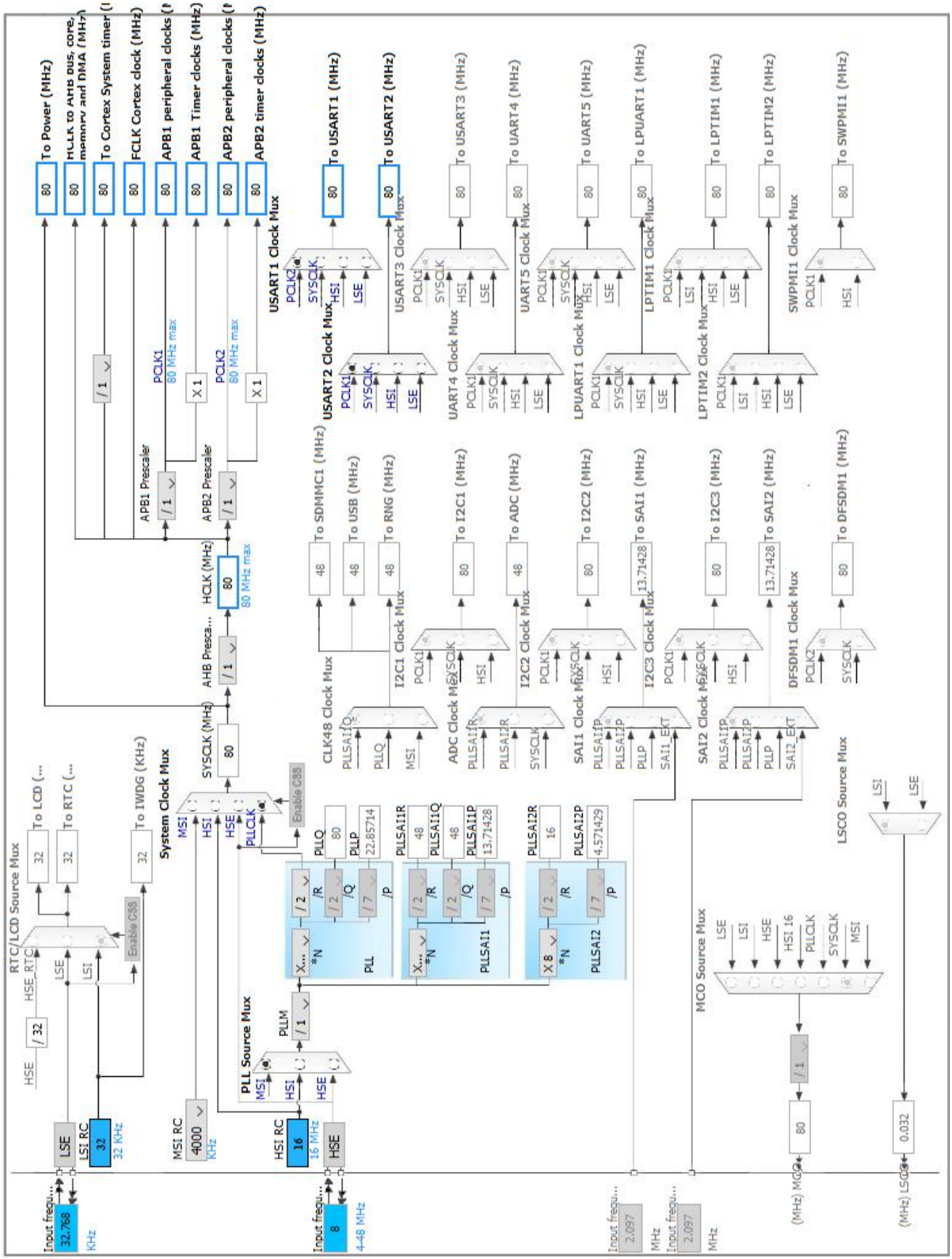


3. Pins Configuration

Pin Number LQFP100	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
6	VBAT	Power		
8	PC14-OSC32_IN (PC14)	I/O	RCC_OSC32_IN	
9	PC15-OSC32_OUT (PC15)	I/O	RCC_OSC32_OUT	
10	VSS	Power		
11	VDD	Power		
12	PH0-OSC_IN (PH0)	I/O	RCC_OSC_IN	
13	PH1-OSC_OUT (PH1)	I/O	RCC_OSC_OUT	
14	NRST	Reset		
19	VSSA	Power		
20	VREF-	Power		
22	VDDA	Power		
23	PA0	I/O	GPIO_EXTI0	JOY_CENTER
27	VSS	Power		
28	VDD	Power		
37	PB2 *	I/O	GPIO_Output	LD_R
39	PE8 *	I/O	GPIO_Output	LD_G
49	VSS	Power		
50	VDD	Power		
73	VDDUSB	Power		
74	VSS	Power		
75	VDD	Power		
82	PD1	I/O	SPI2_SCK	ACC_SCK
85	PD4	I/O	SPI2_MOSI	ACC_MOSI
86	PD5	I/O	USART2_TX	
87	PD6	I/O	USART2_RX	
92	PB6	I/O	USART1_TX	BLUETOOTH_TX
93	PB7	I/O	USART1_RX	BLUETOOTH_RX
94	BOOT0	Boot		
97	PE0 *	I/O	GPIO_Output	ACC_CS
99	VSS	Power		
100	VDD	Power		

* The pin is affected with an I/O function

4. Clock Tree Configuration



5. IPs and Middleware Configuration

5.1. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator
Low Speed Clock (LSE) : Crystal/Ceramic Resonator

5.1.1. Parameter Settings:

System Parameters:

VDD voltage (V)	3.3
Instruction Cache	Enabled
Prefetch Buffer	**Enabled ***
Data Cache	Enabled
Flash Latency(WS)	4 WS (5 CPU cycle)

RCC Parameters:

HSI Calibration Value	16
MSI Calibration Value	0
MSI Auto Calibration	Enabled
HSE Startup Timout Value (ms)	100
LSE Startup Timout Value (ms)	5000
LSE Drive Capability	LSE oscillator low drive capability

Power Parameters:

Power Regulator Voltage Scale	Power Regulator Voltage Scale 1

5.2. SPI2

Mode: Half-Duplex Master

5.2.1. Parameter Settings:

Basic Parameters:

Frame Format	Motorola
Data Size	**8 Bits ***
First Bit	MSB First

Clock Parameters:

Prescaler (for Baud Rate)	**8 ***
Baud Rate	**10.0 MBits/s ***

Clock Polarity (CPOL)	Low
Clock Phase (CPHA)	1 Edge

Advanced Parameters:

CRC Calculation	Disabled
NSSP Mode	**Disabled ***
NSS Signal Type	Software

5.3. SYS

Timebase Source: SysTick

5.4. USART1

Mode: Asynchronous

5.4.1. 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

5.5. USART2

Mode: Asynchronous

5.5.1. 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**

6. System Configuration

6.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
RCC	PC14-OSC32_IN (PC14)	RCC_OSC32_IN	n/a	n/a	n/a	
	PC15-OSC32_OUT (PC15)	RCC_OSC32_OUT	n/a	n/a	n/a	
	PH0-OSC_IN (PH0)	RCC_OSC_IN	n/a	n/a	n/a	
	PH1-OSC_OUT (PH1)	RCC_OSC_OUT	n/a	n/a	n/a	
SPI2	PD1	SPI2_SCK	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	ACC_SCK
	PD4	SPI2_MOSI	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	ACC_MOSI
USART1	PB6	USART1_TX	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	BLUETOOTH_TX
	PB7	USART1_RX	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	BLUETOOTH_RX
USART2	PD5	USART2_TX	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	
	PD6	USART2_RX	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	
GPIO	PA0	GPIO_EXTI0	External Interrupt Mode with Rising edge trigger detection	No pull-up and no pull-down	n/a	JOY_CENTER
	PB2	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LD_R
	PE8	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	LD_G
	PE0	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	ACC_CS

6.2. DMA configuration

DMA request	Stream	Direction	Priority
USART2_RX	DMA1_Channel6	Peripheral To Memory	Low
USART2_TX	DMA1_Channel7	Memory To Peripheral	Low
USART1_RX	DMA2_Channel7	Peripheral To Memory	Low
USART1_TX	DMA2_Channel6	Memory To Peripheral	Low
SPI2_RX	DMA1_Channel4	Peripheral To Memory	Low
SPI2_TX	DMA1_Channel5	Memory To Peripheral	Low

USART2_RX: DMA1_Channel6 DMA request Settings:

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

USART2_TX: DMA1_Channel7 DMA request Settings:

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

USART1_RX: DMA2_Channel7 DMA request Settings:

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

USART1_TX: DMA2_Channel6 DMA request Settings:

Mode: **Circular ***
Peripheral Increment: Disable

Memory Increment:	**Enable ***
Peripheral Data Width:	Byte
Memory Data Width:	Byte

SPI2_RX: DMA1_Channel4 DMA request Settings:

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

SPI2_TX: DMA1_Channel5 DMA request Settings:

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

6.3. 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
RCC global interrupt	true	0	0
EXTI line0 interrupt	true	0	0
DMA1 channel4 global interrupt	true	0	0
DMA1 channel5 global interrupt	true	0	0
DMA1 channel6 global interrupt	true	0	0
DMA1 channel7 global interrupt	true	0	0
USART1 global interrupt	true	0	0
USART2 global interrupt	true	0	0
DMA2 channel6 global interrupt	true	0	0
DMA2 channel7 global interrupt	true	0	0
PVD/PVM1/PVM2/PVM3/PVM4 interrupts through EXTI lines 16/35/36/37/38	unused		
Flash global interrupt	unused		
SPI2 global interrupt	unused		
FPU global interrupt	unused		

*** User modified value**

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32L4
Line	STM32L4x6
MCU	STM32L476VGTx
Datasheet	025976_Rev4

7.2. Parameter Selection

Temperature	25
Vdd	3.0

8. Software Project

8.1. Project Settings

Name	Value
Project Name	Projekt
Project Folder	C:\Users\Maciek\Documents\Sterop\Projekt
Toolchain / IDE	TrueSTUDIO
Firmware Package Name and Version	STM32Cube FW_L4 V1.11.0

8.2. 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	Yes
Backup previously generated files when re-generating	No
Delete previously generated files when not re-generated	No
Set all free pins as analog (to optimize the power consumption)	No

9. Software Pack Report