1. Description

1.1. Project

Project Name	ProjektAS_HAL
Board Name	ProjektAS_HAL
Generated with:	STM32CubeMX 4.25.0
Date	05/27/2018

1.2. MCU

|	
MCU Series	STM32L4
MCU Line	STM32L4x6
MCU name	STM32L476VCTx
MCU Package	LQFP100
MCU Pin number	100

2. Pinout Configuration
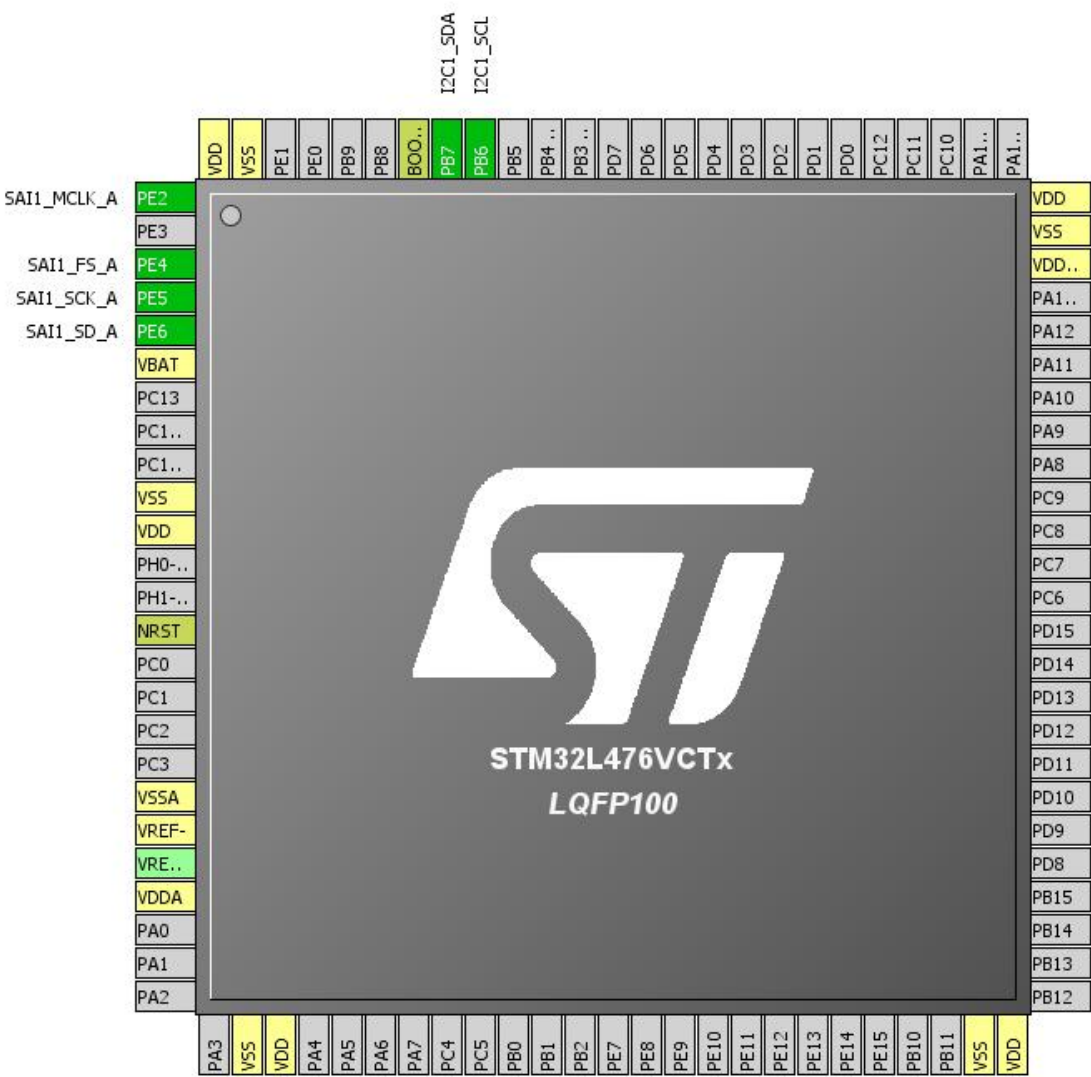
3. Pins Configuration

Pin Number LQFP100	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	PE2	I/O	SAI1_MCLK_A	
3	PE4	I/O	SAI1_FS_A	
4	PE5	I/O	SAI1_SCK_A	
5	PE6	I/O	SAI1_SD_A	
6	VBAT	Power		
10	VSS	Power		
11	VDD	Power		
14	NRST	Reset		
19	VSSA	Power		
20	VREF-	Power		
22	VDDA	Power		
27	VSS	Power		
28	VDD	Power		
49	VSS	Power		
50	VDD	Power		
73	VDDUSB	Power		
74	VSS	Power		
75	VDD	Power		
92	PB6	I/O	I2C1_SCL	
93	PB7	I/O	I2C1_SDA	
94	BOOT0	Boot		
99	VSS	Power		
100	VDD	Power		

4. Clock Tree Configuration
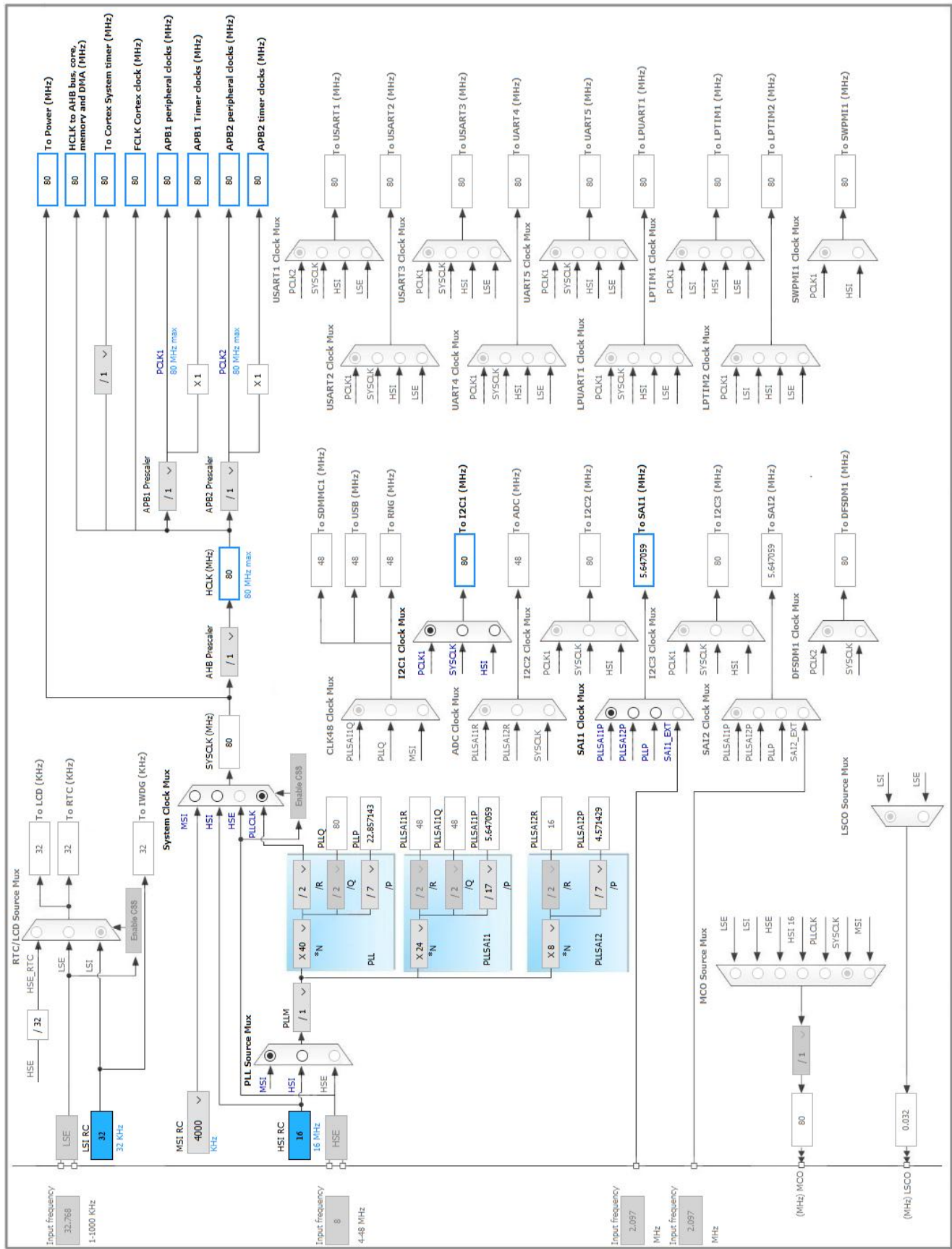
5. IPs and Middleware Configuration

5.1. I2C1

I2C: I2C

5.1.1. Parameter Settings:

Timing configuration:

I2C Speed Mode	Standard Mode
I2C Speed Frequency (KHz)	100
Rise Time (ns)	0
Fall Time (ns)	0
Coefficient of Digital Filter	0
Analog Filter	Enabled
Timing	0x10909CEC

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

5.2. SAI1

Mode: Master with Master Clock Out

5.2.1. Parameter Settings:

SAI A:

Basic Parameters

Protocol	Free
Audio Mode	Master Transmit
Frame Length	**32 bits ***
Data Size	**16 Bits ***
Slot Size	DataSize
Output Mode	Stereo
Companding Mode	No companding mode
SAI SD Line Output Mode	Driven

Frame Parameters

First Bit	MSB First
Frame Synchro Active Level Length	**16 ***
Frame Synchro Definition	Start Frame
Frame Synchro Polarity	Active Low
Frame Synchro Offset	First Bit

Slot Parameters

First Bit Offset	0
Number of Slots	**2 ***
Slot Active Final Value	**0x00000003 ***
Slot Active	**User Setting ***
Slot 0 Active	**true ***
Slot 1 Active	**true ***

Clock Parameters

Master Clock Divider	Enabled
Audio Frequency	**22.05 KHz ***
Real Audio Frequency	**8.928 KHz ***
Error between Selected	**11.6 % ***
Clock Strobing	Falling Edge

Advanced Parameters

Fifo Threshold	**One Quarter Full ***
Output Drive	**Enabled ***
Synchronization External	Disabled

5.3. SYS

Timebase Source: SysTick

* User modified value

6. System Configuration

6.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
I2C1	PB6	I2C1_SCL	Alternate Function Open Drain	Pull-up	**Very High** *	
	PB7	I2C1_SDA	Alternate Function Open Drain	Pull-up	**Very High** *	
SAI1	PE2	SAI1_MCLK_A	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PE4	SAI1_FS_A	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PE5	SAI1_SCK_A	Alternate Function Push Pull	No pull-up and no pull-down	Low	
	PE6	SAI1_SD_A	Alternate Function Push Pull	No pull-up and no pull-down	Low	

6.2. DMA configuration

DMA request	Stream	Direction	Priority
SAI1_A	DMA2_Channel1	Memory To Peripheral	**High ***

SAI1_A: DMA2_Channel1 DMA request Settings:

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

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
DMA2 channel1 global interrupt	true	0	0
SAI1 global interrupt	true	0	0
PVD/PVM1/PVM2/PVM3/PVM4 interrupts through EXTI lines 16/35/36/37/38	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
I2C1 event interrupt	unused		
I2C1 error interrupt	unused		
FPU global interrupt	unused		

* User modified value

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32L4
Line	STM32L4x6
MCU	STM32L476VCTx
Datasheet	025976_Rev4

7.2. Parameter Selection

Temperature	25
Vdd	null

8. Software Project

8.1. Project Settings

Name	Value
Project Name	ProjektAS_HAL
Project Folder	C:\Users\szuha\Desktop\stm32-workspace\ProjektAS_HAL
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	Yes
Set all free pins as analog (to optimize the power consumption)	No

9. Software Pack Report