1. Description

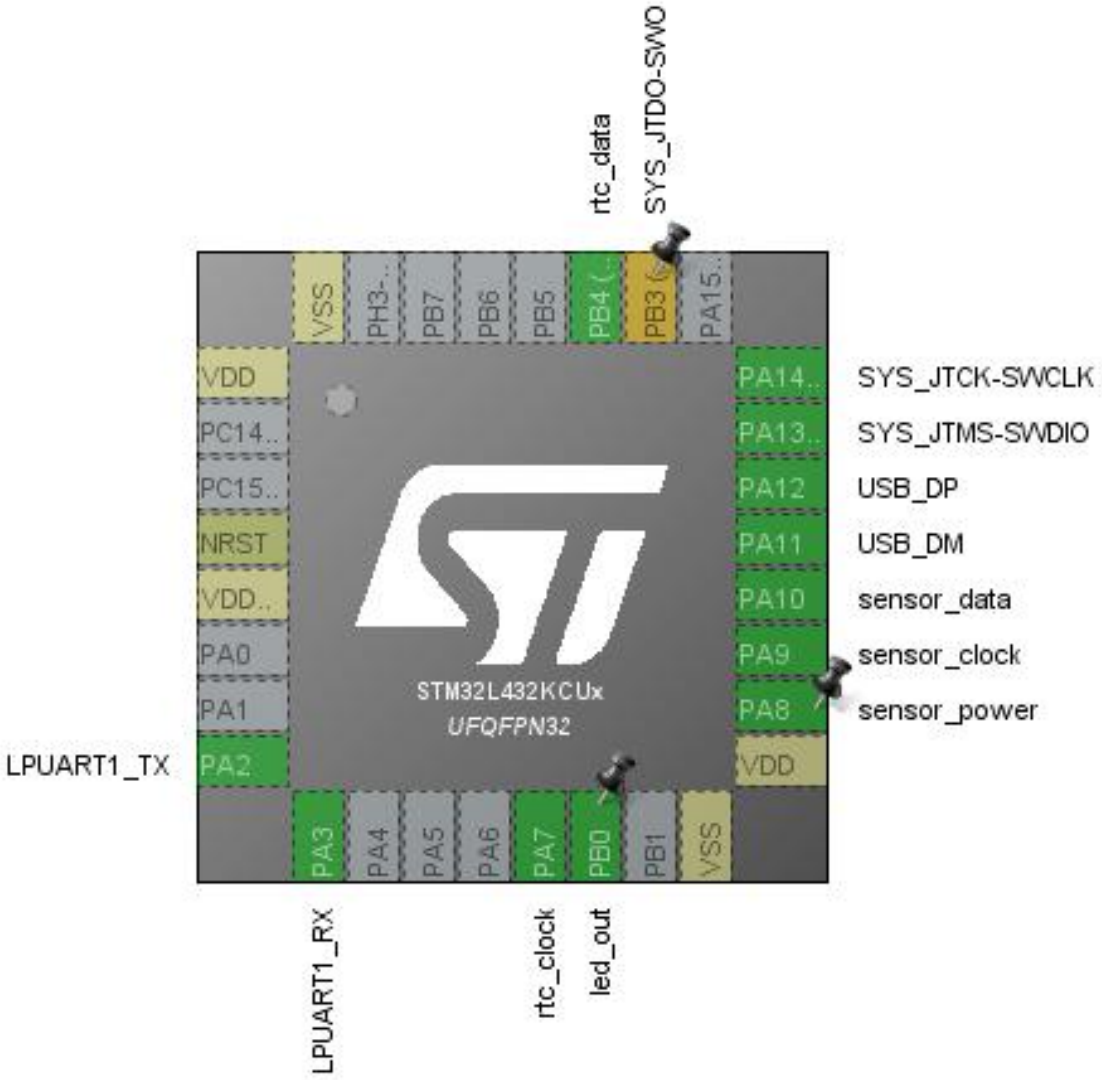
1.1. Project

Project Name	lm_application
Board Name	custom
Generated with:	STM32CubeMX 5.0.0
Date	02/04/2019

1.2. MCU

MCU Series	STM32L4
MCU Line	STM32L4x2
MCU name	STM32L432KCUx
MCU Package	UFQFPN32
MCU Pin number	32

2. Pinout Configuration



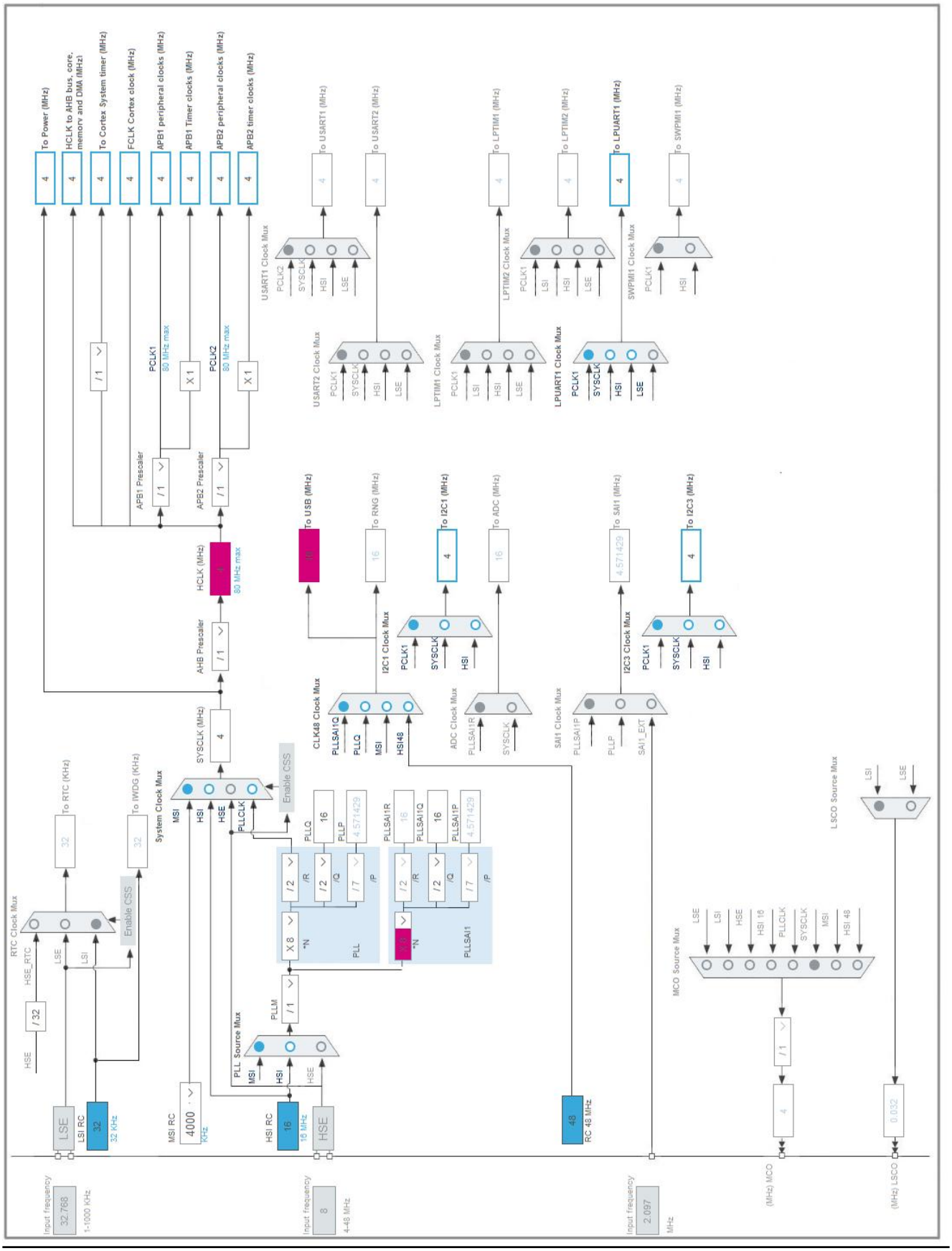
3. Pins Configuration

Pin Number UFQFPN32	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VDD	Power		
4	NRST	Reset		
5	VDDA/VREF+	Power		
8	PA2	I/O	LPUART1_TX	
9	PA3	I/O	LPUART1_RX	
13	PA7	I/O	I2C3_SCL	rtc_clock
14	PB0 *	I/O	GPIO_Output	led_out
16	VSS	Power		
17	VDD	Power		
18	PA8 *	I/O	GPIO_Output	sensor_power
19	PA9	I/O	I2C1_SCL	sensor_clock
20	PA10	I/O	I2C1_SDA	sensor_data
21	PA11	I/O	USB_DM	
22	PA12	I/O	USB_DP	
23	PA13 (JTMS-SWDIO)	I/O	SYS_JTMS-SWDIO	
24	PA14 (JTCK-SWCLK)	I/O	SYS_JTCK-SWCLK	
26	PB3 (JTDO-TRACESWO) **	I/O	SYS_JTDO-SWO	
27	PB4 (NJTRST)	I/O	I2C3_SDA	rtc_data
32	VSS	Power		

* 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	lm_application
Project Folder	C:\Users\bhimebau\forge_local\outdoor_monitor\lm_application
Toolchain / IDE	Makefile
Firmware Package Name and Version	STM32Cube FW_L4 V1.13.0

5.2. Code Generation Settings

Name	Value
STM32Cube Firmware Library Package	Copy all used libraries into the project folder
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	STM32L4x2
MCU	STM32L432KCUx
Datasheet	028798_Rev2

6.2. Parameter Selection

Temperature	25
Vdd	null

7. IPs and Middleware Configuration

7.1. I2C1

I2C: SMBus-two-wire-Interface

7.1.1. 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	0x00000E14

SMBus Features:

Packet Error Check Mode	PEC Disabled
Peripheral Mode	Peripheral Mode Smbus Slave

SMBus 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	1

Timeout configuration:

Extended Clock Timeout	Disabled
Idle Clock Timeout Detection	Disabled
Timeout Time (ns)	25000000
Timeout	0x00008030

7.2. I2C3

I2C: I2C

7.2.1. 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	0x00000E14

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

7.3. LPUART1

Mode: Asynchronous

7.3.1. Parameter Settings:

Basic Parameters:

Baud Rate	209700
Word Length	7 Bits (including Parity)
Parity	None
Stop Bits	1

Advanced Parameters:

Data Direction	Receive and Transmit
Single Sample	Disable

Advanced Features:

Auto Baudrate Mode	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

7.4. SYS

Debug: Serial Wire

Timebase Source: SysTick

7.5. USB

mode: Device (FS)

7.5.1. Parameter Settings:

Basic Parameters:

Speed	Full Speed 12MBit/s
Endpoint 0 Max Packet size	64 Bytes
Physical interface	Internal Phy
Sof Enable	Disabled

Power Parameters:

Low Power	Disabled
Link Power Management	Disabled
Battery Charging	Disabled

*** User modified value**

8. System Configuration

8.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
I2C1	PA9	I2C1_SCL	Alternate Function Open Drain	Pull-up	**Very High ***	sensor_clock
	PA10	I2C1_SDA	Alternate Function Open Drain	Pull-up	**Very High ***	sensor_data
I2C3	PA7	I2C3_SCL	Alternate Function Open Drain	Pull-up	**Very High ***	rtc_clock
	PB4 (NJTRST)	I2C3_SDA	Alternate Function Open Drain	Pull-up	**Very High ***	rtc_data
LPUART1	PA2	LPUART1_TX	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	
	PA3	LPUART1_RX	Alternate Function Push Pull	No pull-up and no pull-down	**Very High ***	
SYS	PA13 (JTMS-SWDIO)	SYS_JTMS-SWDIO	n/a	n/a	n/a	
	PA14 (JTCK-SWCLK)	SYS_JTCK-SWCLK	n/a	n/a	n/a	
USB	PA11	USB_DM	n/a	n/a	n/a	
	PA12	USB_DP	n/a	n/a	n/a	
Single Mapped Signals	PB3 (JTDO-TRACESWO)	SYS_JTDO-SWO	n/a	n/a	n/a	
GPIO	PB0	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	led_out
	PA8	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	sensor_power

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
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		
USB event interrupt through EXTI line 17	unused		
LPUART1 global interrupt	unused		
I2C3 event interrupt	unused		
I2C3 error interrupt	unused		
FPU global interrupt	unused		

*** User modified value**

9. Software Pack Report