1. Description

1.1. Project

Project Name	firmware
Board Name	firmware
Generated with:	STM32CubeMX 4.11.0
Date	06/23/2016

1.2. MCU

MCU Series	STM32F0
MCU Line	STM32F0x0 Value Line
MCU name	STM32F030F4Px
MCU Package	TSSOP20
MCU Pin number	20

2. Pinout Configuration
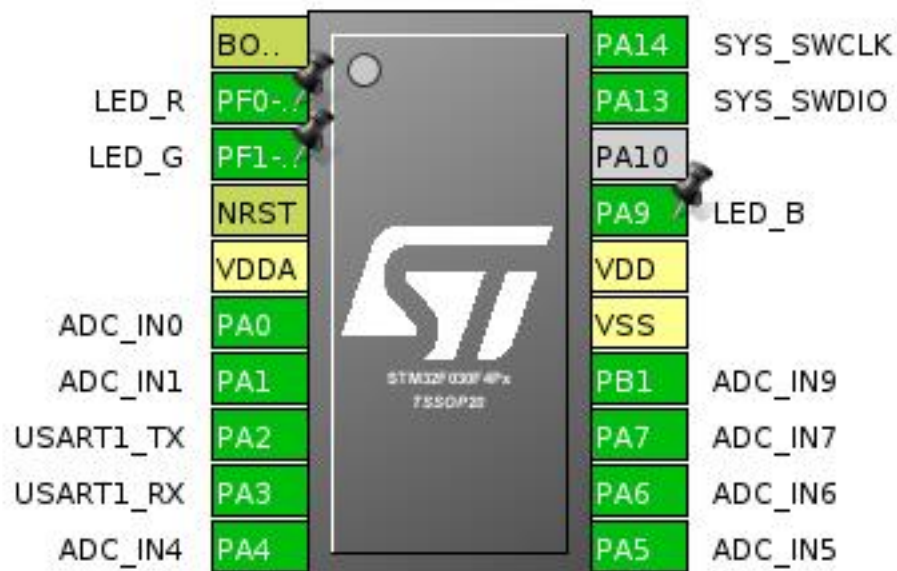
3. Pins Configuration

Pin Number TSSOP20	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	BOOT0	Boot		
2	PF0-OSC_IN *	I/O	GPIO_Output	LED_R
3	PF1-OSC_OUT *	I/O	GPIO_Output	LED_G
4	NRST	Reset		
5	VDDA	Power		
6	PA0	I/O	ADC_IN0	
7	PA1	I/O	ADC_IN1	
8	PA2	I/O	USART1_TX	
9	PA3	I/O	USART1_RX	
10	PA4	I/O	ADC_IN4	
11	PA5	I/O	ADC_IN5	
12	PA6	I/O	ADC_IN6	
13	PA7	I/O	ADC_IN7	
14	PB1	I/O	ADC_IN9	
15	VSS	Power		
16	VDD	Power		
17	PA9 *	I/O	GPIO_Output	LED_B
19	PA13	I/O	SYS_SWDIO	
20	PA14	I/O	SYS_SWCLK	

* The pin is affected with an I/O function

4. Clock Tree Configuration

5. IPs and Middleware Configuration

5.1. ADC

mode: IN0

mode: IN1

mode: IN4

mode: IN5

mode: IN6

mode: IN7

mode: IN9

mode: Temperature Sensor Channel

5.1.1. Parameter Settings:

ADC_Settings:

Clock Prescaler	Asynchronous clock mode
Resolution	ADC 12-bit resolution
Data Alignment	Right alignment
Scan Conversion Mode	Forward
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
Low Power Auto Power Off	Disabled

ADC_Regular_ConversionMode:

Sampling Time	1.5 Cycles
External Trigger Conversion Edge	None

WatchDog:

Enable Analog WatchDog Mode	false

5.2. SYS

mode: Serial-WireDebug

5.3. USART1

Mode: Asynchronous

5.3.1. 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
ADC	PA0	ADC_IN0	Analog mode	n/a	n/a	
	PA1	ADC_IN1	Analog mode	n/a	n/a	
	PA4	ADC_IN4	Analog mode	n/a	n/a	
	PA5	ADC_IN5	Analog mode	n/a	n/a	
	PA6	ADC_IN6	Analog mode	n/a	n/a	
	PA7	ADC_IN7	Analog mode	n/a	n/a	
	PB1	ADC_IN9	Analog mode	n/a	n/a	
SYS	PA13	SYS_SWDIO	n/a	n/a	n/a	
	PA14	SYS_SWCLK	n/a	n/a	n/a	
USART1	PA2	USART1_TX	Alternate Function Push Pull	n/a	**High ***	
	PA3	USART1_RX	Alternate Function Push Pull	n/a	**High ***	
GPIO	PF0-OSC_IN	GPIO_Output	Output Push Pull	n/a	Low	LED_R
	PF1-OSC_OUT	GPIO_Output	Output Push Pull	n/a	Low	LED_G
	PA9	GPIO_Output	Output Push Pull	n/a	Low	LED_B

6.2. DMA configuration

DMA request	Stream	Direction	Priority
ADC	DMA1_Channel1	Peripheral To Memory	Low

ADC: DMA1_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
System tick timer	true	0	0
DMA1 channel 1 interrupt	true	0	0
Non maskable interrupt	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
ADC interrupt	unused		
USART1 global interrupt	unused		

* User modified value

7. Power Plugin report

7.1. Microcontroller Selection

Series	STM32F0
Line	STM32F0x0 Value Line
MCU	STM32F030F4Px
Datasheet	024849_Rev2

7.2. Parameter Selection

Temperature	25
Vdd	3.6

8. Software Project

8.1. Project Settings

Name	Value
Project Name	firmware
Project Folder	/home/xaionaro/dc-thermal-logger/sensor/firmware
Toolchain / IDE	SW4STM32
Firmware Package Name and Version	STM32Cube FW_F0 V1.4.0

8.2. 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