1. Description

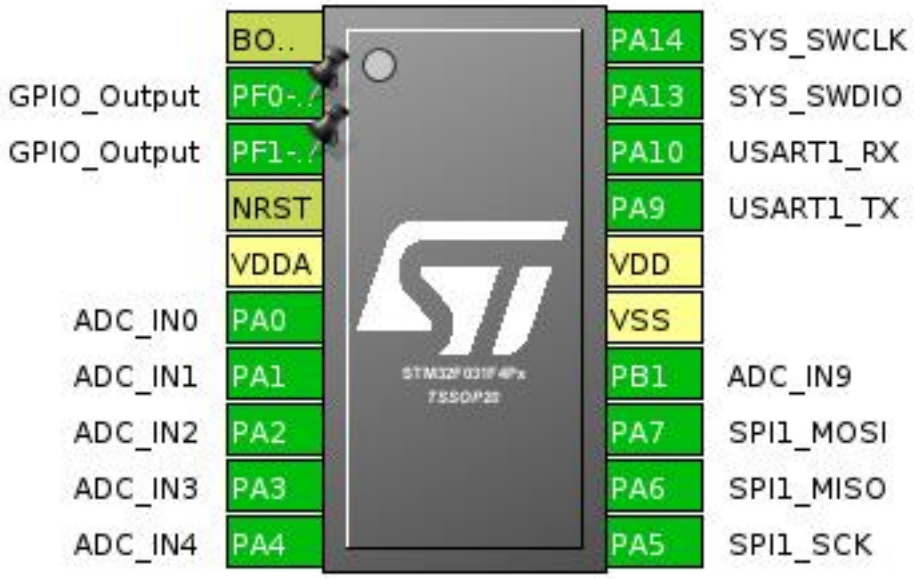
1.1. Project

Project Name	backlight-controller
Board Name	No information
Generated with:	STM32CubeMX 4.13.0
Date	07/10/2016

1.2. MCU

MCU Series	STM32F0
MCU Line	STM32F0x1
MCU name	STM32F031F4Px
MCU Package	TSSOP20
MCU Pin number	20

2. Pinout Configuration

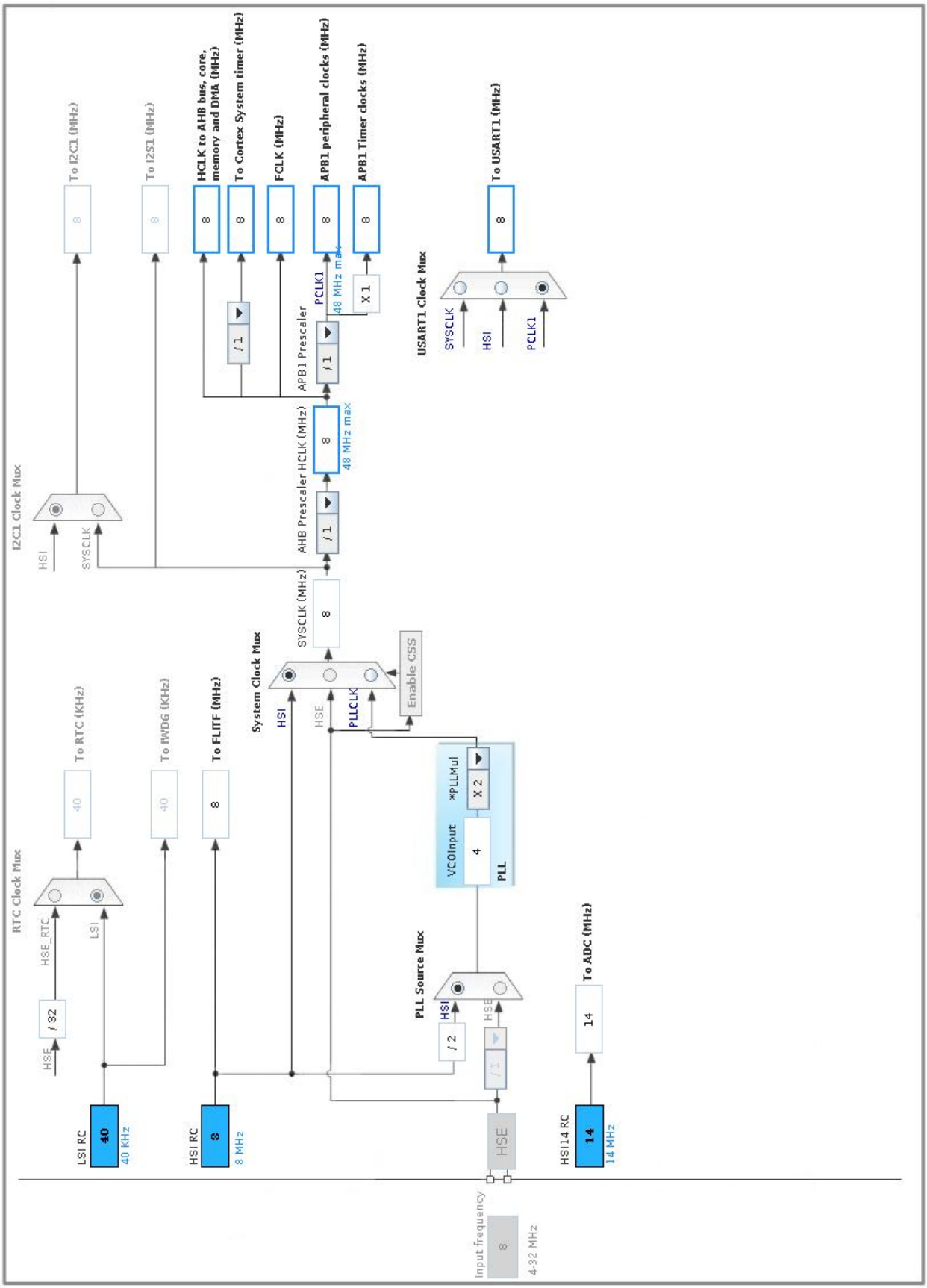


3. Pins Configuration

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	
3	PF1-OSC_OUT *	I/O	GPIO_Output	
4	NRST	Reset		
5	VDDA	Power		
6	PA0	I/O	ADC_IN0	
7	PA1	I/O	ADC_IN1	
8	PA2	I/O	ADC_IN2	
9	PA3	I/O	ADC_IN3	
10	PA4	I/O	ADC_IN4	
11	PA5	I/O	SPI1_SCK	
12	PA6	I/O	SPI1_MISO	
13	PA7	I/O	SPI1_MOSI	
14	PB1	I/O	ADC_IN9	
15	VSS	Power		
16	VDD	Power		
17	PA9	I/O	USART1_TX	
18	PA10	I/O	USART1_RX	
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: IN2
mode: IN3
mode: IN4
mode: IN9
mode: Temperature Sensor Channel
mode: Vrefint Channel
mode: Vbat 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. SPI1

Mode: Full-Duplex Master

5.2.1. Parameter Settings:

Basic Parameters:

Frame Format	Motorola
Data Size	4 Bits
First Bit	MSB First

Clock Parameters:

Prescaler (for Baud Rate)	2
Baud Rate	**4.0 MBits/s ***
Clock Polarity (CPOL)	Low
Clock Phase (CPHA)	1 Edge

Advanced Parameters:

CRC Calculation	Disabled
NSSP Mode	Enabled
NSS Signal Type	Software

5.3. SYS

mode: Serial-WireDebug

Timebase Source: SysTick

5.4. USART1

Mode: Asynchronous

5.4.1. Parameter Settings:

Basic Parameters:

Baud Rate	38400
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	No pull-up and no pull-down	n/a	
	PA1	ADC_IN1	Analog mode	No pull-up and no pull-down	n/a	
	PA2	ADC_IN2	Analog mode	No pull-up and no pull-down	n/a	
	PA3	ADC_IN3	Analog mode	No pull-up and no pull-down	n/a	
	PA4	ADC_IN4	Analog mode	No pull-up and no pull-down	n/a	
	PB1	ADC_IN9	Analog mode	No pull-up and no pull-down	n/a	
SPI1	PA5	SPI1_SCK	Alternate Function Push Pull	No pull-up and no pull-down	**High ***	
	PA6	SPI1_MISO	Alternate Function Push Pull	No pull-up and no pull-down	**High ***	
	PA7	SPI1_MOSI	Alternate Function Push Pull	No pull-up and no pull-down	**High ***	
SYS	PA13	SYS_SWDIO	n/a	n/a	n/a	
	PA14	SYS_SWCLK	n/a	n/a	n/a	
USART1	PA9	USART1_TX	Alternate Function Push Pull	Pull-up	**High ***	
	PA10	USART1_RX	Alternate Function Push Pull	Pull-up	**High ***	
GPIO	PF0-OSC_IN	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	
	PF1-OSC_OUT	GPIO_Output	Output Push Pull	No pull-up and no pull-down	Low	

6.2. DMA configuration

nothing configured in DMA service

6.3. NVIC configuration

Interrupt Table	Enable	Preenmption Priority	SubPriority
System tick timer	true	0	0
Non maskable interrupt	unused		
Hard fault interrupt	unused		
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
ADC interrupt	unused		
SPI1 global interrupt	unused		
USART1 global interrupt / USART1 wake-up interrupt through EXTI line 25	unused		

*** User modified value**

7. Power Plugin report

7.1. Microcontroller Selection

Series	STM32F0
Line	STM32F0x1
MCU	STM32F031F4Px
Datasheet	025743_Rev2

7.2. Parameter Selection

Temperature	25
Vdd	3.6