1. Description

1.1. Project

Project Name	IR_CAP_030
Board Name	custom
Generated with:	STM32CubeMX 5.1.0
Date	03/06/2019

1.2. MCU

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

2. Pinout Configuration

BOO..	PA14 — SYS_SWCLK
RCC_OSC_IN — PF0-..	PA13 — SYS_SWDIO
RCC_OSC_OUT — PF1-..	PA10
NRST	PA9
VDDA	VDD
STcp — PA0	VSS
SHcp — PA1	PB1
DS — PA2	PA7
PA3	PA6 — IR_IN
PA4	PA5

STM32F030F4Px
TSSOP20
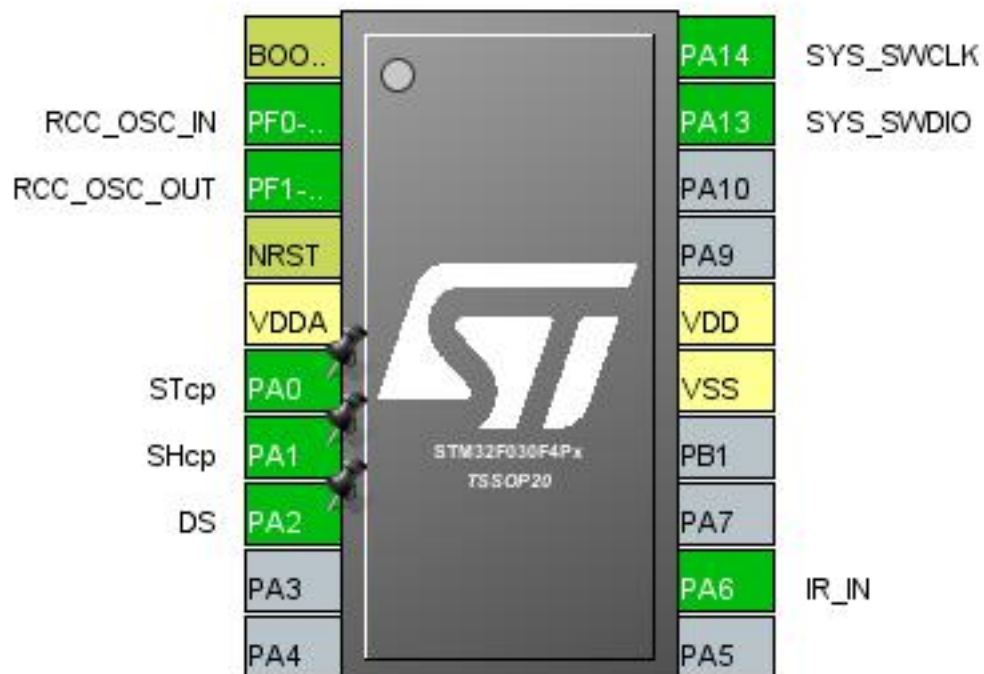
3. Pins Configuration

Pin Number TSSOP20	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	BOOT0	Boot		
2	PF0-OSC_IN	I/O	RCC_OSC_IN	
3	PF1-OSC_OUT	I/O	RCC_OSC_OUT	
4	NRST	Reset		
5	VDDA	Power		
6	PA0 *	I/O	GPIO_Output	STcp
7	PA1 *	I/O	GPIO_Output	SHcp
8	PA2 *	I/O	GPIO_Output	DS
12	PA6	I/O	TIM3_CH1	IR_IN
15	VSS	Power		
16	VDD	Power		
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
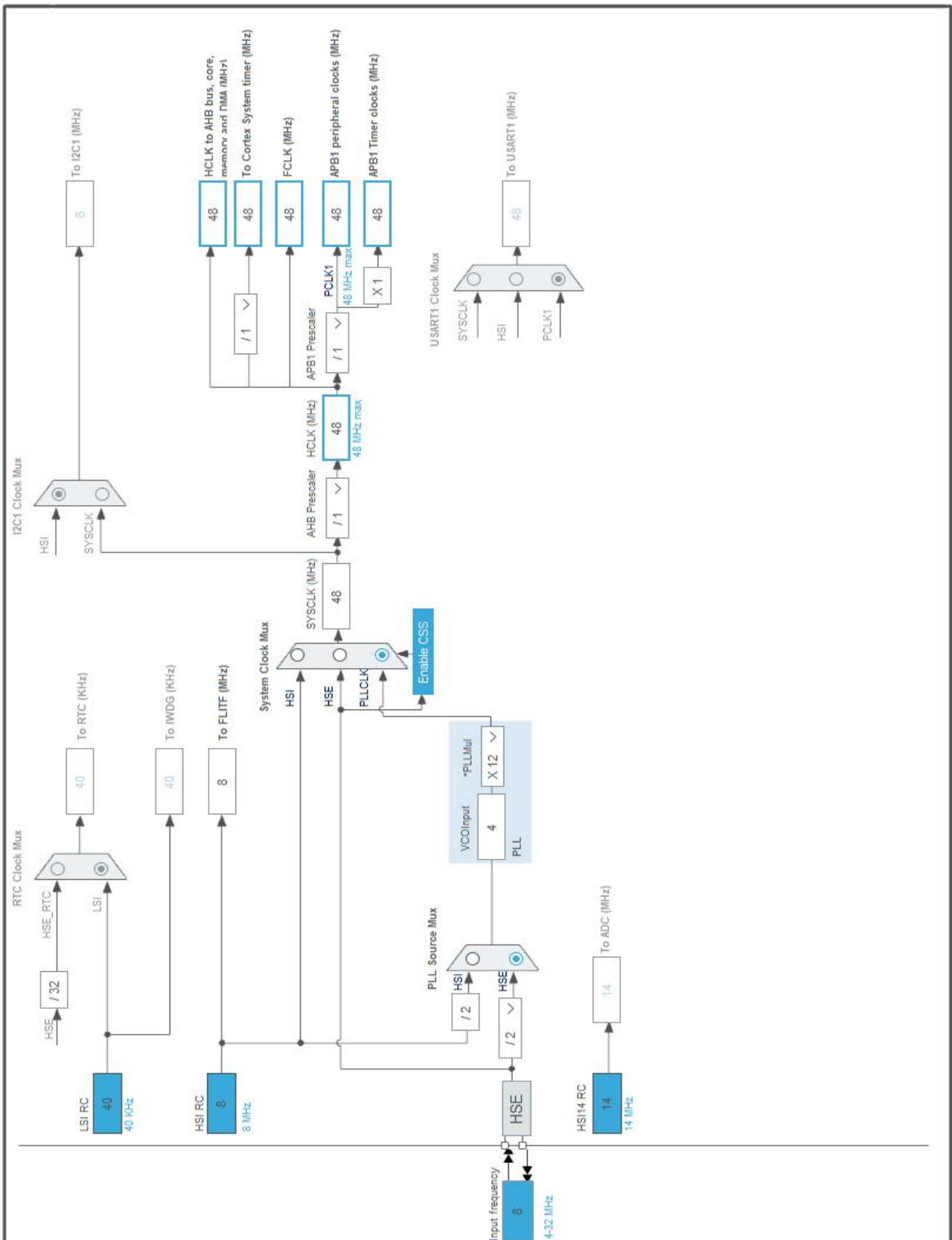
5. Software Project

5.1. Project Settings

Name	Value
Project Name	IR_CAP_030
Project Folder	E:\DiskD\testMachine\IR_Control\IR_CAP_030
Toolchain / IDE	EWARM V8
Firmware Package Name and Version	STM32Cube FW_F0 V1.9.0

5.2. 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

6. Power Consumption Calculator report

6.1. Microcontroller Selection

Series	STM32F0
Line	STM32F0x0 Value Line
MCU	STM32F030F4Px
Datasheet	024849_Rev2

6.2. Parameter Selection

Temperature	25
Vdd	3.6

7. IPs and Middleware Configuration

7.1. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

7.1.1. Parameter Settings:

System Parameters:

VDD voltage (V)	3.3
Prefetch Buffer	Enabled
Flash Latency(WS)	1 WS (2 CPU cycle)

RCC Parameters:

HSE Startup Timout Value (ms)	100
LSE Startup Timout Value (ms)	5000

7.2. SYS

mode: Debug Serial Wire
Timebase Source: SysTick

7.3. TIM3

mode: Clock Source
Channel1: Input Capture direct mode
Channel2: Input Capture indirect mode
7.3.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**47 ***
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**6000 ***
Internal Clock Division (CKD)	No Division
auto-reload preload	**Enable ***

Trigger Output (TRGO) Parameters:

Master/Slave Mode (MSM bit)	Disable (Trigger input effect not delayed)
Trigger Event Selection	Reset (UG bit from TIMx_EGR)

Input Capture Channel 1:

Polarity Selection	**Falling Edge ***
IC Selection	Direct
Prescaler Division Ratio	No division

Input Filter (4 bits value)	0

Input Capture Channel 2:

Polarity Selection	Rising Edge
IC Selection	Indirect
Prescaler Division Ratio	No division

7.4. TIM14

mode: Activated

7.4.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**4799 ***
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**1000 ***
Internal Clock Division (CKD)	No Division
auto-reload preload	**Enable ***

* User modified value

8. System Configuration

8.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
RCC	PF0-OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	
	PF1-OSC_OUT	RCC_OSC_OUT	n/a	n/a	n/a	
SYS	PA13	SYS_SWDIO	n/a	n/a	n/a	
	PA14	SYS_SWCLK	n/a	n/a	n/a	
TIM3	PA6	TIM3_CH1	Alternate Function Push Pull	No pull-up and no pull-down	Low	IR_IN
GPIO	PA0	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**High ***	STcp
	PA1	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**High ***	SHcp
	PA2	GPIO_Output	Output Push Pull	No pull-up and no pull-down	**High ***	DS

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
System service call via SWI instruction	true	0	0
Pendable request for system service	true	0	0
System tick timer	true	0	0
Flash global interrupt	unused		
RCC global interrupt	unused		
TIM3 global interrupt	unused		
TIM14 global interrupt	unused		

* User modified value

9. Software Pack Report