

1. Description

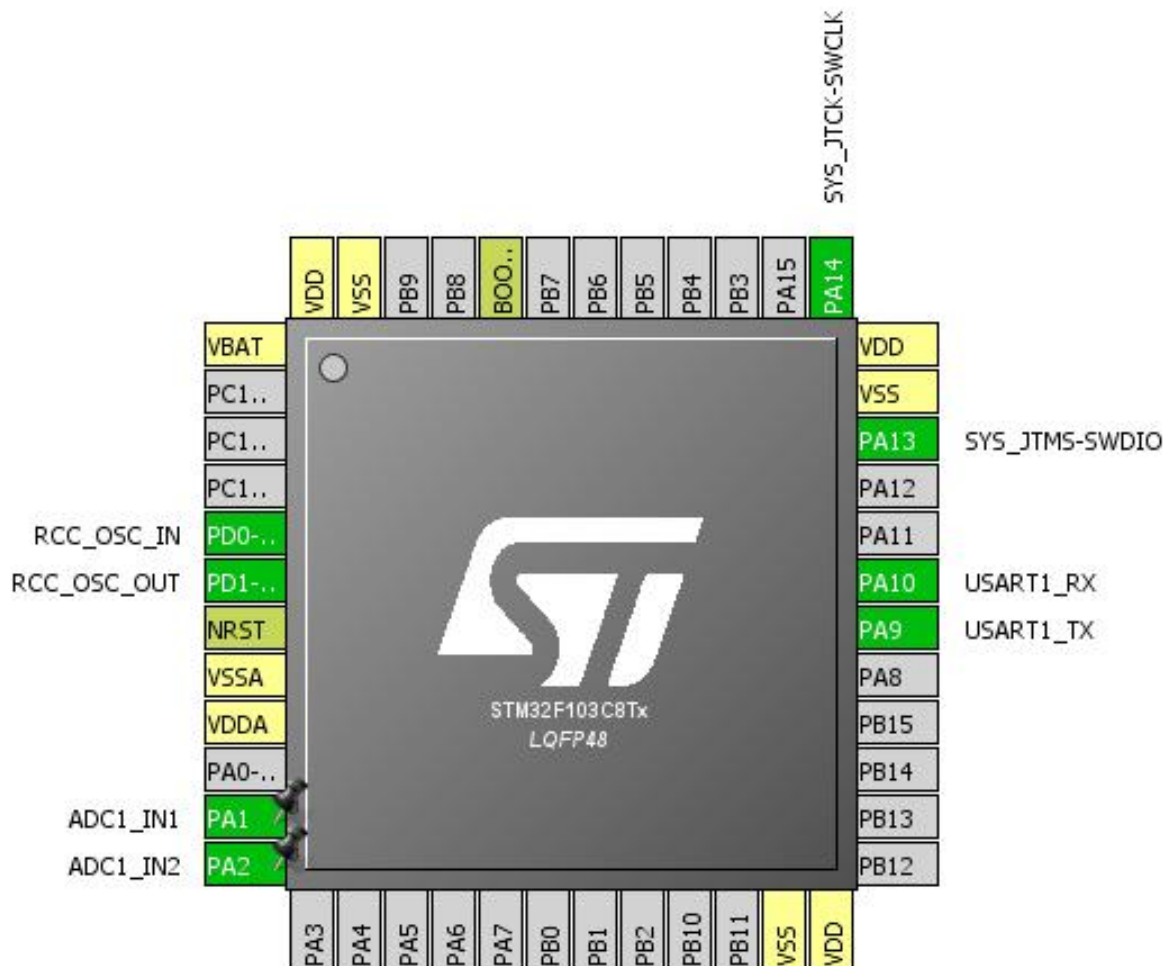
1.1. Project

Project Name	ShootScan
Board Name	custom
Generated with:	STM32CubeMX 4.26.1
Date	07/24/2019

1.2. MCU

MCU Series	STM32F1
MCU Line	STM32F103
MCU name	STM32F103C8Tx
MCU Package	LQFP48
MCU Pin number	48

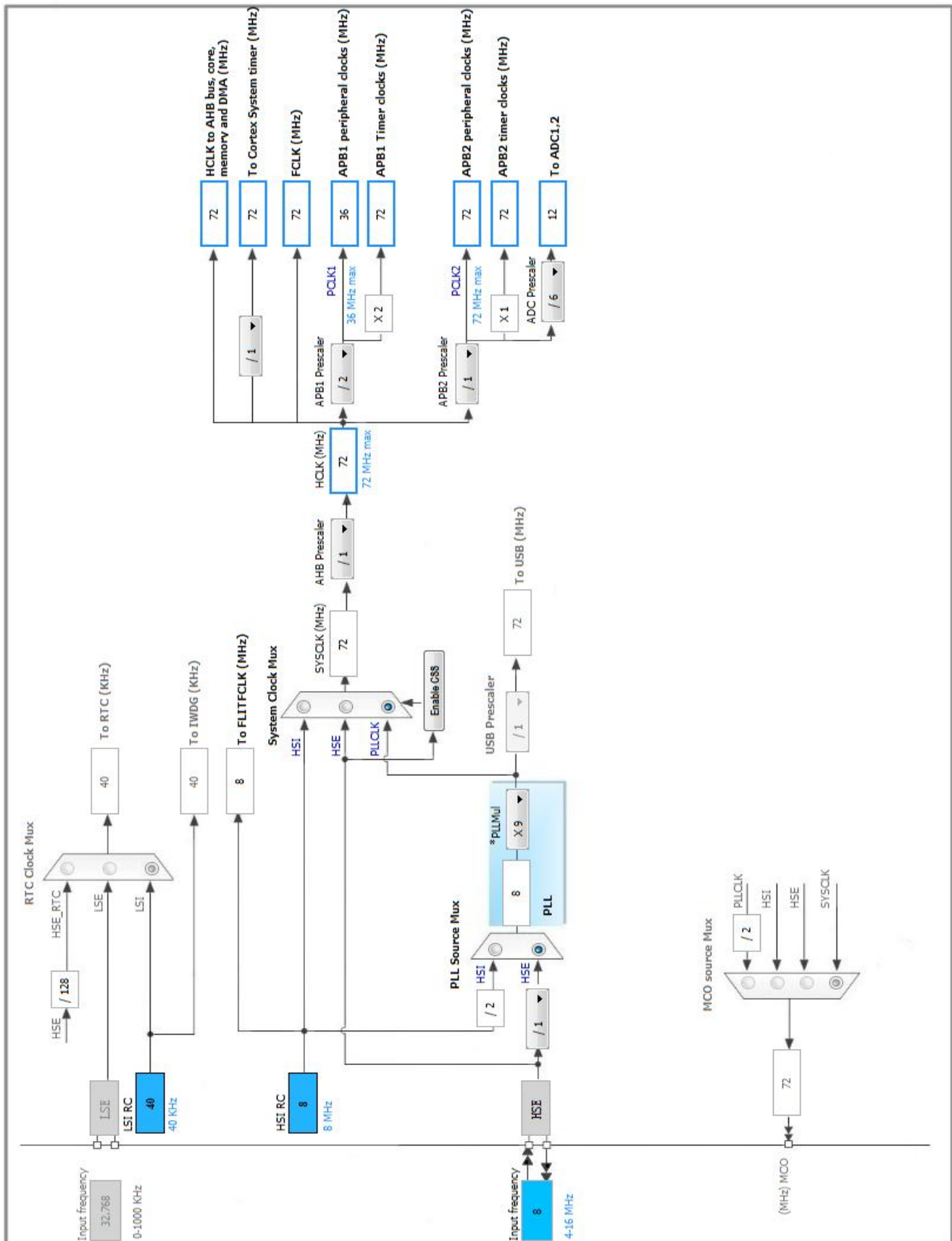
2. Pinout Configuration



3. Pins Configuration

Pin Number LQFP48	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VBAT	Power		
5	PD0-OSC_IN	I/O	RCC_OSC_IN	
6	PD1-OSC_OUT	I/O	RCC_OSC_OUT	
7	NRST	Reset		
8	VSSA	Power		
9	VDDA	Power		
11	PA1	I/O	ADC1_IN1	
12	PA2	I/O	ADC1_IN2	
23	VSS	Power		
24	VDD	Power		
30	PA9	I/O	USART1_TX	
31	PA10	I/O	USART1_RX	
34	PA13	I/O	SYS_JTMS-SWDIO	
35	VSS	Power		
36	VDD	Power		
37	PA14	I/O	SYS_JTCK-SWCLK	
44	BOOT0	Boot		
47	VSS	Power		
48	VDD	Power		

4. Clock Tree Configuration



5. IPs and Middleware Configuration

5.1. ADC1

mode: IN1

mode: IN2

5.1.1. Parameter Settings:

ADCs_Common_Settings:

Mode Independent mode

ADC_Settings:

Data Alignment Right alignment

Scan Conversion Mode Enabled

Continuous Conversion Mode **Enabled ***

Discontinuous Conversion Mode Disabled

ADC_Regular_ConversionMode:

Enable Regular Conversions Enable

Number Of Conversion **2 ***

External Trigger Conversion Source Regular Conversion launched by software

Rank 1

Channel Channel 1

Sampling Time **239.5 Cycles ***

Rank **2 ***

Channel **Channel 2 ***

Sampling Time **239.5 Cycles ***

ADC_Injected_ConversionMode:

Number Of Conversions 0

WatchDog:

Enable Analog WatchDog Mode **true ***

Watchdog Mode **All regular channels ***

High Threshold **4095 ***

Low Threshold 0

Interrupt Mode **Enabled ***

5.2. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

5.2.1. Parameter Settings:

System Parameters:

VDD voltage (V)	3.3
Prefetch Buffer	Enabled
Flash Latency(WS)	2 WS (3 CPU cycle)

RCC Parameters:

HSI Calibration Value	16
HSE Startup Timeout Value (ms)	100
LSE Startup Timeout Value (ms)	5000

5.3. SYS

Debug: Serial Wire

Timebase Source: SysTick

5.4. TIM1

Clock Source : Internal Clock

5.4.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	71 *
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	19999 *
Internal Clock Division (CKD)	No Division
Repetition Counter (RCR - 8 bits value)	0
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)

5.5. USART1

Mode: Asynchronous

5.5.1. Parameter Settings:

Basic Parameters:

Baud Rate	115200
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Word Length	8 Bits (including Parity)
Parity	None
Stop Bits	1

Advanced Parameters:

Data Direction	Receive and Transmit
Over Sampling	16 Samples

* User modified value

6. System Configuration

6.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
ADC1	PA1	ADC1_IN1	Analog mode	n/a	n/a	
	PA2	ADC1_IN2	Analog mode	n/a	n/a	
RCC	PD0-OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	
	PD1-OSC_OUT	RCC_OSC_OUT	n/a	n/a	n/a	
SYS	PA13	SYS_JTMS-SWDIO	n/a	n/a	n/a	
	PA14	SYS_JTCK-SWCLK	n/a	n/a	n/a	
USART1	PA9	USART1_TX	Alternate Function Push Pull	n/a	High *	
	PA10	USART1_RX	Input mode	No pull-up and no pull-down	n/a	

6.2. DMA configuration

DMA request	Stream	Direction	Priority
ADC1	DMA1_Channel1	Peripheral To Memory	Very High *
USART1_RX	DMA1_Channel5	Peripheral To Memory	Low
USART1_TX	DMA1_Channel4	Memory To Peripheral	Low

ADC1: DMA1_Channel1 DMA request Settings:

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

USART1_RX: DMA1_Channel5 DMA request Settings:

Mode: Normal
 Peripheral Increment: Disable
 Memory Increment: **Enable ***
 Peripheral Data Width: Byte
 Memory Data Width: Byte

USART1_TX: DMA1_Channel4 DMA request Settings:

Mode: Normal
 Peripheral Increment: Disable
 Memory Increment: **Enable ***
 Peripheral Data Width: Byte
 Memory Data Width: Byte

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
DMA1 channel1 global interrupt	true	0	0
DMA1 channel4 global interrupt	true	2	0
DMA1 channel5 global interrupt	true	0	1
ADC1 and ADC2 global interrupts	true	0	0
TIM1 update interrupt	true	1	0
USART1 global interrupt	true	5	0
PVD interrupt through EXTI line 16		unused	
Flash global interrupt		unused	
RCC global interrupt		unused	
TIM1 break interrupt		unused	
TIM1 trigger and commutation interrupts		unused	
TIM1 capture compare interrupt		unused	

* User modified value

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32F1
Line	STM32F103
MCU	STM32F103C8Tx
Datasheet	13587_Rev17

7.2. Parameter Selection

Temperature	25
Vdd	3.3

8. Software Project

8.1. Project Settings

Name	Value
Project Name	ShootScan
Project Folder	C:\Users\Yangyifan\Desktop\ADC_ShootScan\ShootScan
Toolchain / IDE	MDK-ARM V5
Firmware Package Name and Version	STM32Cube FW_F1 V1.6.1

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)	Yes

9. Software Pack Report