1. Description

1.1. Project

Project Name	ClassDemo
Board Name	custom
Generated with:	STM32CubeMX 4.26.1
Date	04/07/2019

1.2. MCU

MCU Series	STM32F4
MCU Line	STM32F429/439
MCU name	STM32F429IGTx
MCU Package	LQFP176
MCU Pin number	176

2. Pinout Configuration
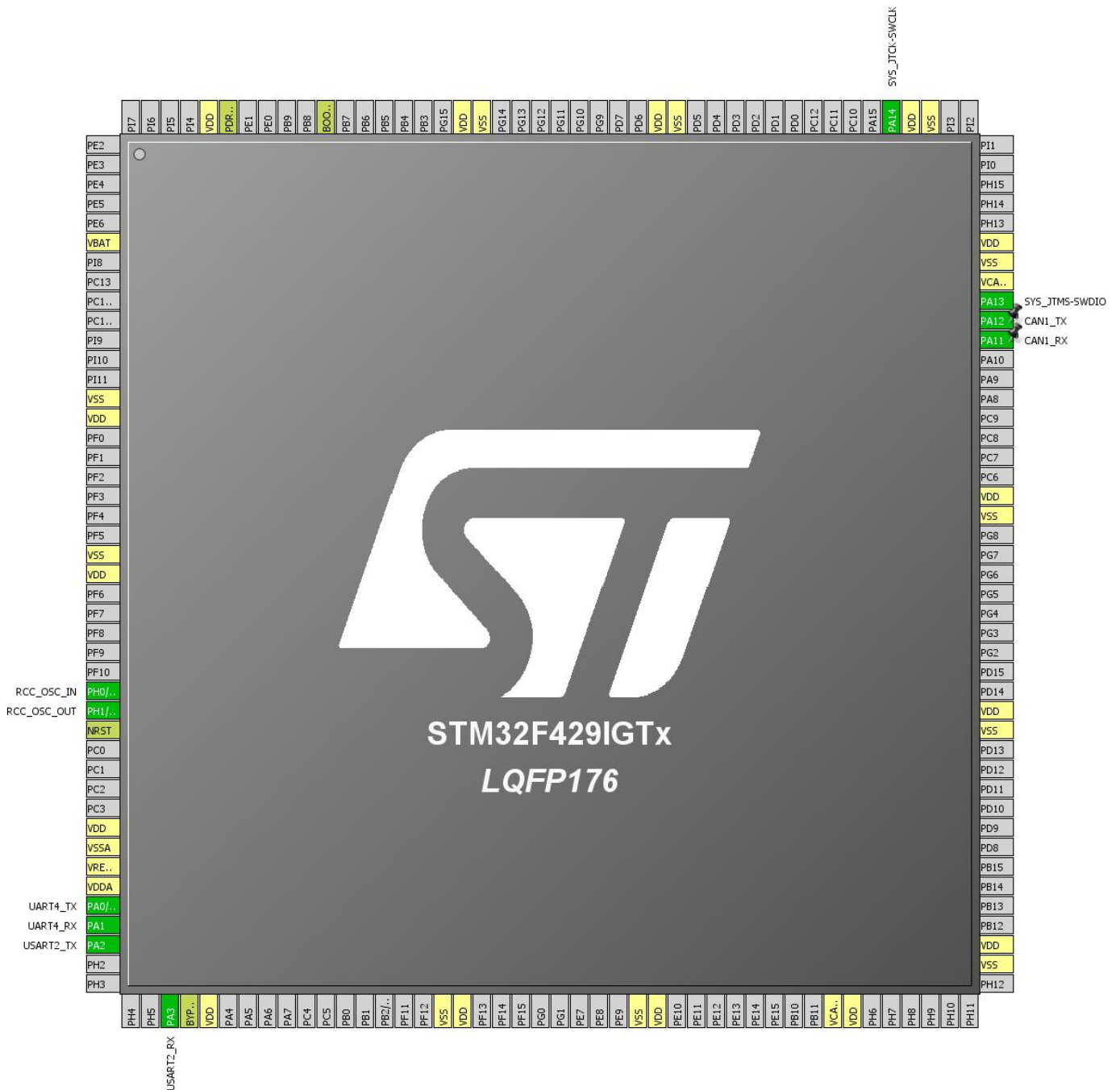
3. Pins Configuration

Pin Number LQFP176	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
6	VBAT	Power		
14	VSS	Power		
15	VDD	Power		
22	VSS	Power		
23	VDD	Power		
29	PH0/OSC_IN	I/O	RCC_OSC_IN	
30	PH1/OSC_OUT	I/O	RCC_OSC_OUT	
31	NRST	Reset		
36	VDD	Power		
37	VSSA	Power		
38	VREF+	Power		
39	VDDA	Power		
40	PA0/WKUP	I/O	UART4_TX	
41	PA1	I/O	UART4_RX	
42	PA2	I/O	USART2_TX	
47	PA3	I/O	USART2_RX	
48	BYPASS_REG	Reset		
49	VDD	Power		
61	VSS	Power		
62	VDD	Power		
71	VSS	Power		
72	VDD	Power		
81	VCAP_1	Power		
82	VDD	Power		
90	VSS	Power		
91	VDD	Power		
102	VSS	Power		
103	VDD	Power		
113	VSS	Power		
114	VDD	Power		
122	PA11	I/O	CAN1_RX	
123	PA12	I/O	CAN1_TX	
124	PA13	I/O	SYS_JTMS-SWDIO	
125	VCAP_2	Power		
126	VSS	Power		
127	VDD	Power		

Pin Number LQFP176	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
135	VSS	Power		
136	VDD	Power		
137	PA14	I/O	SYS_JTCK-SWCLK	
148	VSS	Power		
149	VDD	Power		
158	VSS	Power		
159	VDD	Power		
166	BOOT0	Boot		
171	PDR_ON	Reset		
172	VDD	Power		

4. Clock Tree Configuration
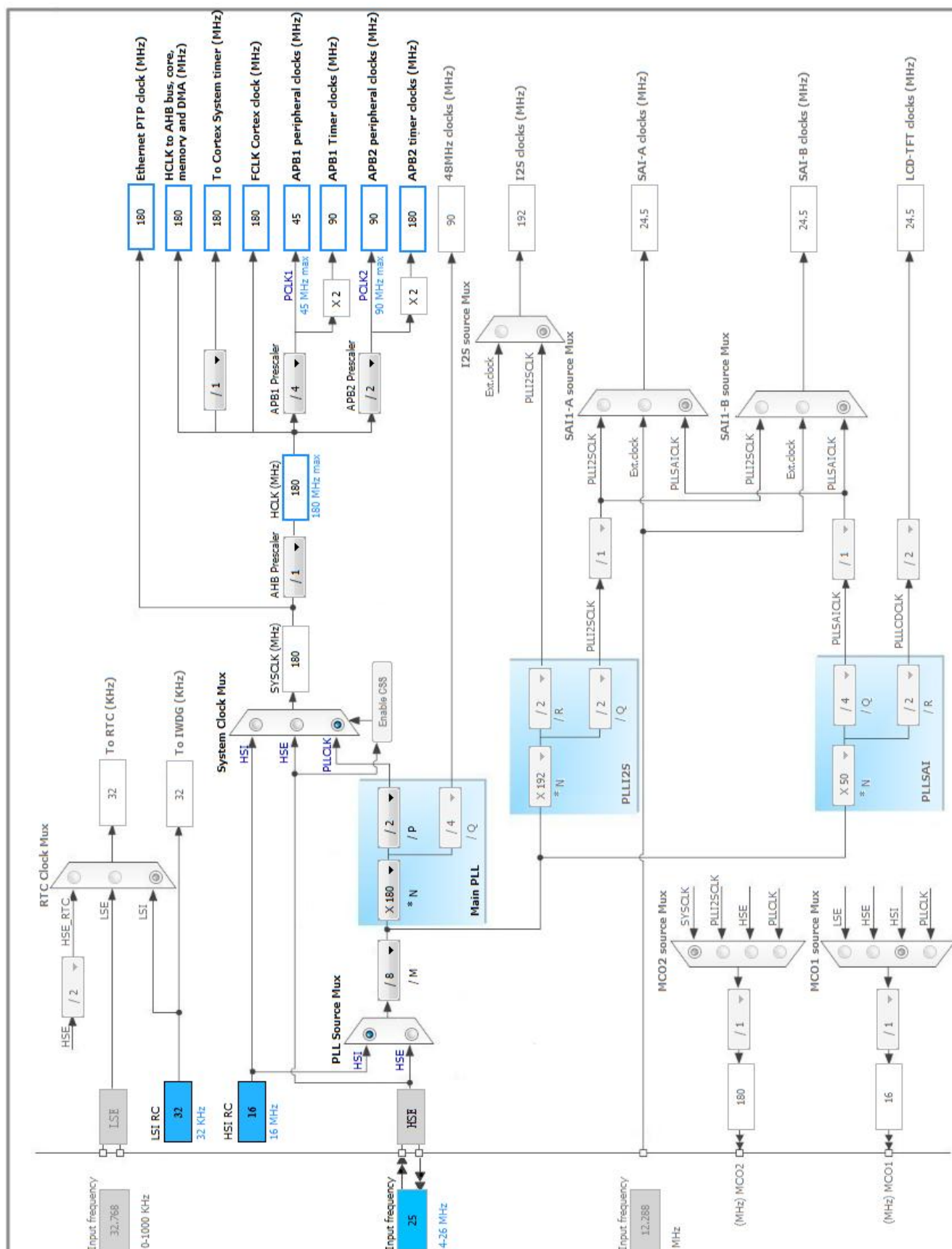
5. IPs and Middleware Configuration

5.1. CAN1

mode: Mode

5.1.1. Parameter Settings:

Bit Timings Parameters:

Prescaler (for Time Quantum)	**5 ***
Time Quantum	**111.1111111111111 ***
Time Quanta in Bit Segment 1	**5 Times ***
Time Quanta in Bit Segment 2	**3 Times ***
ReSynchronization Jump Width	**2 Times ***

Basic Parameters:

Time Triggered Communication Mode	Disable
Automatic Bus-Off Management	**Enable ***
Automatic Wake-Up Mode	**Enable ***
No-Automatic Retransmission	Disable
Receive Fifo Locked Mode	Disable
Transmit Fifo Priority	Disable

Advanced Parameters:

Operating Mode	Normal

5.2. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

5.2.1. Parameter Settings:

System Parameters:

VDD voltage (V)	3.3
Instruction Cache	Enabled
Prefetch Buffer	Enabled
Data Cache	Enabled
Flash Latency(WS)	5 WS (6 CPU cycle)

RCC Parameters:

HSI Calibration Value	16
TIM Prescaler Selection	Disabled
HSE Startup Timout Value (ms)	100
LSE Startup Timout Value (ms)	5000

Power Parameters:

Power Regulatror Voltage Scale	Power Regulator Voltage Scale 1
Power Over Drive	Enabled

5.3. SYS

Debug: Serial Wire

Timebase Source: SysTick

5.4. TIM6

mode: Activated

5.4.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**89 ***
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**4999 ***

Trigger Output (TRGO) Parameters:

Trigger Event Selection	Reset (UG bit from TIMx_EGR)

5.5. TIM7

mode: Activated

5.5.1. Parameter Settings:

Counter Settings:

Prescaler (PSC - 16 bits value)	**89 ***
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value)	**999 ***

Trigger Output (TRGO) Parameters:

Trigger Event Selection	Reset (UG bit from TIMx_EGR)

5.6. UART4

Mode: Asynchronous

5.6.1. 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

5.7. USART2

Mode: Asynchronous

5.7.1. 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

* User modified value

6. System Configuration

6.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
CAN1	PA11	CAN1_RX	Alternate Function Push Pull	No pull-up and no pull-down	**Very High** *	
	PA12	CAN1_TX	Alternate Function Push Pull	No pull-up and no pull-down	**Very High** *	
RCC	PH0/OSC_IN	RCC_OSC_IN	n/a	n/a	n/a	
	PH1/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	
UART4	PA0/WKUP	UART4_TX	Alternate Function Push Pull	Pull-up	**Very High** *	
	PA1	UART4_RX	Alternate Function Push Pull	Pull-up	**Very High** *	
USART2	PA2	USART2_TX	Alternate Function Push Pull	Pull-up	**Very High** *	
	PA3	USART2_RX	Alternate Function Push Pull	Pull-up	**Very High** *	

6.2. DMA configuration

DMA request	Stream	Direction	Priority
UART4_TX	DMA1_Stream4	Memory To Peripheral	Low
UART4_RX	DMA1_Stream2	Peripheral To Memory	Low

UART4_TX: DMA1_Stream4 DMA request Settings:

Mode: Normal

Use fifo: Disable

Peripheral Increment: Disable

Memory Increment: **Enable ***

Peripheral Data Width: Byte

Memory Data Width: Byte

UART4_RX: DMA1_Stream2 DMA request Settings:

Mode: Normal

Use fifo: Disable

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
Pre-fetch 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 stream2 global interrupt	true	0	0
DMA1 stream4 global interrupt	true	0	0
CAN1 TX interrupts	true	0	0
CAN1 RX0 interrupts	true	0	0
USART2 global interrupt	true	0	0
UART4 global interrupt	true	0	0
TIM6 global interrupt, DAC1 and DAC2 underrun error interrupts	true	2	0
TIM7 global interrupt	true	1	2
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
CAN1 RX1 interrupt	unused		
CAN1 SCE interrupt	unused		
FPU global interrupt	unused		

* User modified value

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32F4
Line	STM32F429/439
MCU	STM32F429IGTx
Datasheet	024030_Rev9

7.2. Parameter Selection

Temperature	25
Vdd	3.3

8. Software Project

8.1. Project Settings

Name	Value
Project Name	ClassDemo
Project Folder	C:\Users\Yangyifan\Desktop\Demo_F4 - CANA11_A12\ClassDemo
Toolchain / IDE	MDK-ARM V5
Firmware Package Name and Version	STM32Cube FW_F4 V1.21.0

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