1. Description

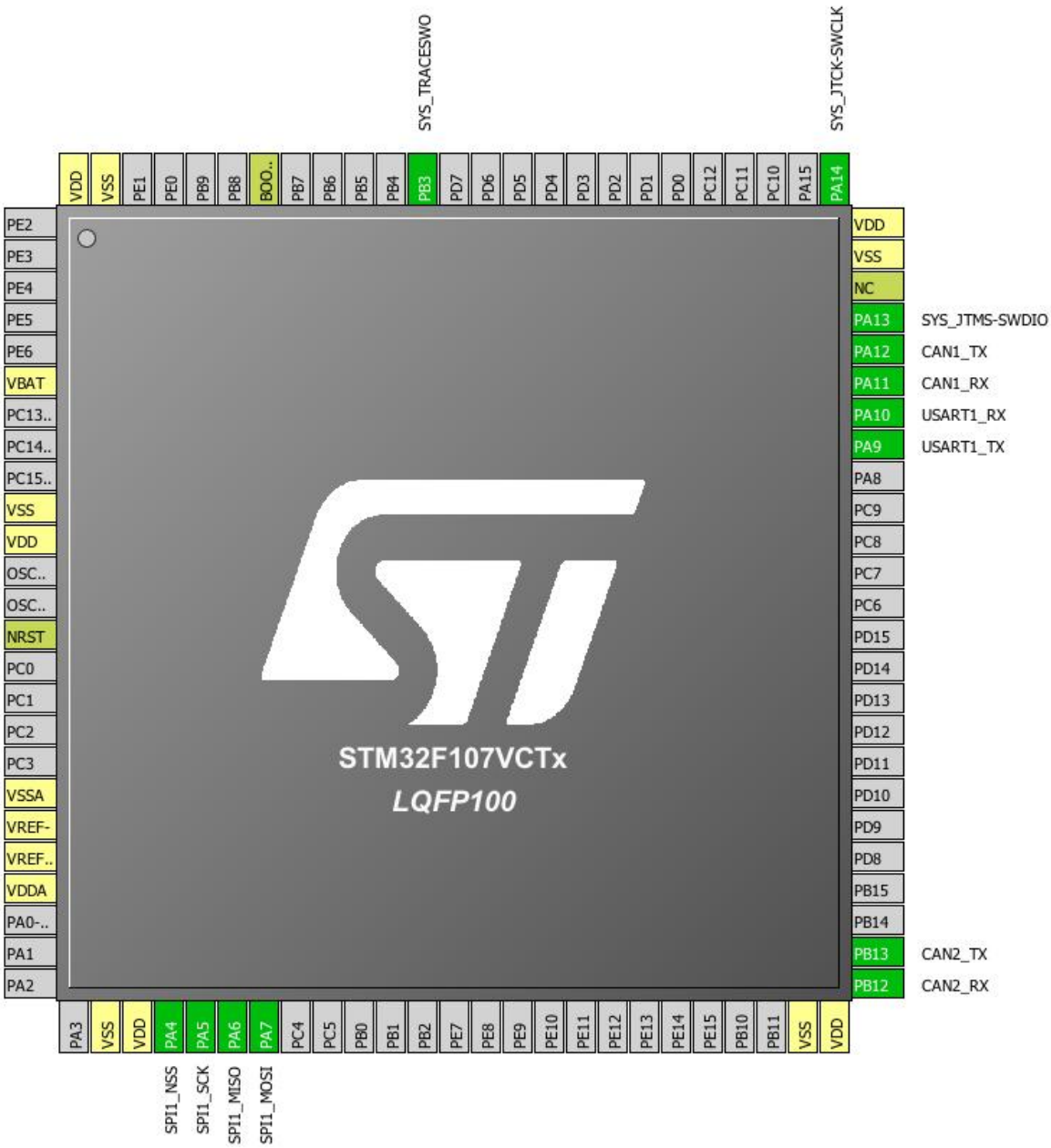
1.1. Project

Project Name	Carlogs
Board Name	Carlogs
Generated with:	STM32CubeMX 4.22.0
Date	09/12/2017

1.2. MCU

MCU Series	STM32F1
MCU Line	STM32F105/107
MCU name	STM32F107VCTx
MCU Package	LQFP100
MCU Pin number	100

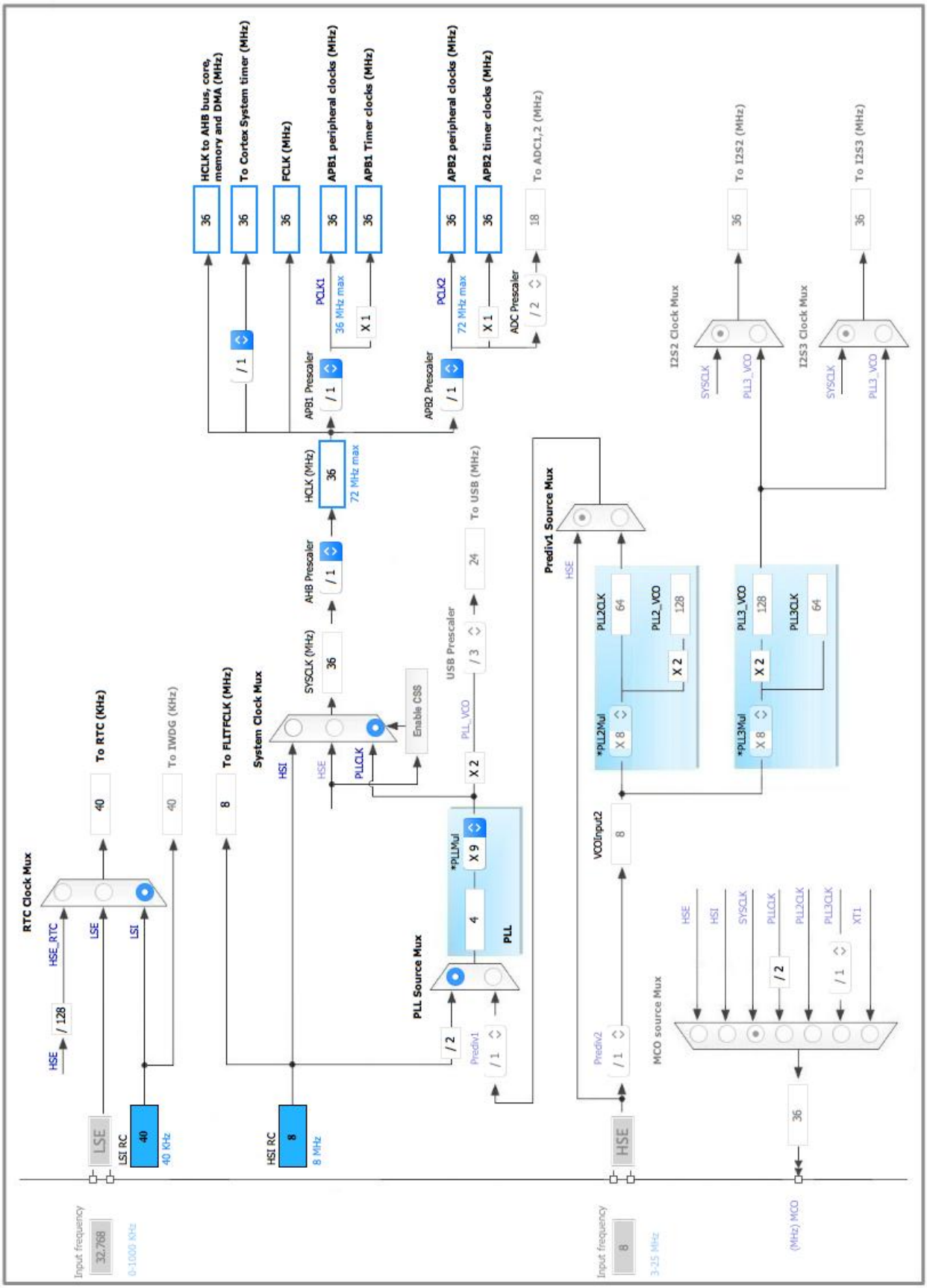
2. Pinout Configuration



3. Pins Configuration

Pin Number LQFP100	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
6	VBAT	Power		
10	VSS	Power		
11	VDD	Power		
14	NRST	Reset		
19	VSSA	Power		
20	VREF-	Power		
21	VREF+	Power		
22	VDDA	Power		
27	VSS	Power		
28	VDD	Power		
29	PA4	I/O	SPI1_NSS	
30	PA5	I/O	SPI1_SCK	
31	PA6	I/O	SPI1_MISO	
32	PA7	I/O	SPI1_MOSI	
49	VSS	Power		
50	VDD	Power		
51	PB12	I/O	CAN2_RX	
52	PB13	I/O	CAN2_TX	
68	PA9	I/O	USART1_TX	
69	PA10	I/O	USART1_RX	
70	PA11	I/O	CAN1_RX	
71	PA12	I/O	CAN1_TX	
72	PA13	I/O	SYS_JTMS-SWDIO	
73	NC	NC		
74	VSS	Power		
75	VDD	Power		
76	PA14	I/O	SYS_JTCK-SWCLK	
89	PB3	I/O	SYS_TRACESWO	
94	BOOT0	Boot		
99	VSS	Power		
100	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)	16
Time Quantum	**444.44444444444446 ***
Time Quanta in Bit Segment 1	**9 Times ***
Time Quanta in Bit Segment 2	**8 Times ***
Time for one Bit	**8000 ***
ReSynchronization Jump Width	1 Time

Basic Parameters:

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

Advanced Parameters:

Operating Mode	Normal

5.2. CAN2

mode: Mode

5.2.1. Parameter Settings:

Bit Timings Parameters:

Prescaler (for Time Quantum)	16
Time Quantum	**444.44444444444446 ***
Time Quanta in Bit Segment 1	**9 Times ***
Time Quanta in Bit Segment 2	**8 Times ***
Time for one Bit	**8000 ***

ReSynchronization Jump Width	1 Time

Basic Parameters:

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

Advanced Parameters:

Operating Mode	Normal

5.3. RTC

mode: Activate Clock Source

mode: Activate Calendar

5.3.1. Parameter Settings:

Calendar Time:

Data Format	BCD data format
Hours	1
Minutes	0
Seconds	0

General:

Auto Predivider Calculation	Enabled
Asynchronous Predivider value	Automatic Predivider Calculation Enabled
Output	Alarm pulse signal on the TAMPER pin

Calendar Date:

Week Day	Monday
Month	January
Date	1
Year	0

5.4. SPI1

Mode: Full-Duplex Slave

Hardware NSS Signal: Hardware NSS Input Signal

5.4.1. Parameter Settings:

Basic Parameters:

Frame Format	Motorola
Data Size	8 Bits
First Bit	MSB First

Clock Parameters:

Prescaler (for Baud Rate)	2
Baud Rate	**18.0 MBits/s ***
Clock Polarity (CPOL)	Low
Clock Phase (CPHA)	1 Edge

Advanced Parameters:

CRC Calculation	Disabled
NSS Signal Type	Input Hardware

5.5. SYS

Debug: Trace Asynchronous Sw

Timebase Source: SysTick

5.6. USART1

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

*** 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	Input mode	No pull-up and no pull-down	n/a	
	PA12	CAN1_TX	Alternate Function Push Pull	n/a	**High ***	
CAN2	PB12	CAN2_RX	Input mode	No pull-up and no pull-down	n/a	
	PB13	CAN2_TX	Alternate Function Push Pull	n/a	**High ***	
SPI1	PA4	SPI1_NSS	Input mode	No pull-up and no pull-down	n/a	
	PA5	SPI1_SCK	Input mode	No pull-up and no pull-down	n/a	
	PA6	SPI1_MISO	Alternate Function Push Pull	n/a	**High ***	
	PA7	SPI1_MOSI	Input mode	No pull-up and no pull-down	**n/a**	
SYS	PA13	SYS_JTMS-SWDIO	n/a	n/a	n/a	
	PA14	SYS_JTCK-SWCLK	n/a	n/a	n/a	
	PB3	SYS_TRACESWO	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

nothing configured in DMA service

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
PVD interrupt through EXTI line 16	unused		
RTC global interrupt	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
CAN1 TX interrupt	unused		
CAN1 RX0 interrupt	unused		
CAN1 RX1 interrupt	unused		
CAN1 SCE interrupt	unused		
SPI1 global interrupt	unused		
USART1 global interrupt	unused		
CAN2 TX interrupt	unused		
CAN2 RX0 interrupt	unused		
CAN2 RX1 interrupt	unused		
CAN2 SCE interrupt	unused		

*** User modified value**

7. Power Consumption Calculator report

7.1. Microcontroller Selection

Series	STM32F1
Line	STM32F105/107
MCU	STM32F107VCTx
Datasheet	15274 Rev9

7.2. Parameter Selection

Temperature	25
Vdd	3.3

8. Software Project

8.1. Project Settings

Name	Value
Project Name	Carlogs
Project Folder	/Users/Emmet/Projects/CarLogs/Firmware/Carlogs
Toolchain / IDE	SW4STM32
Firmware Package Name and Version	STM32Cube FW_F1 V1.6.0

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	Yes
Delete previously generated files when not re-generated	Yes
Set all free pins as analog (to optimize the power consumption)	No