

## 1. Description

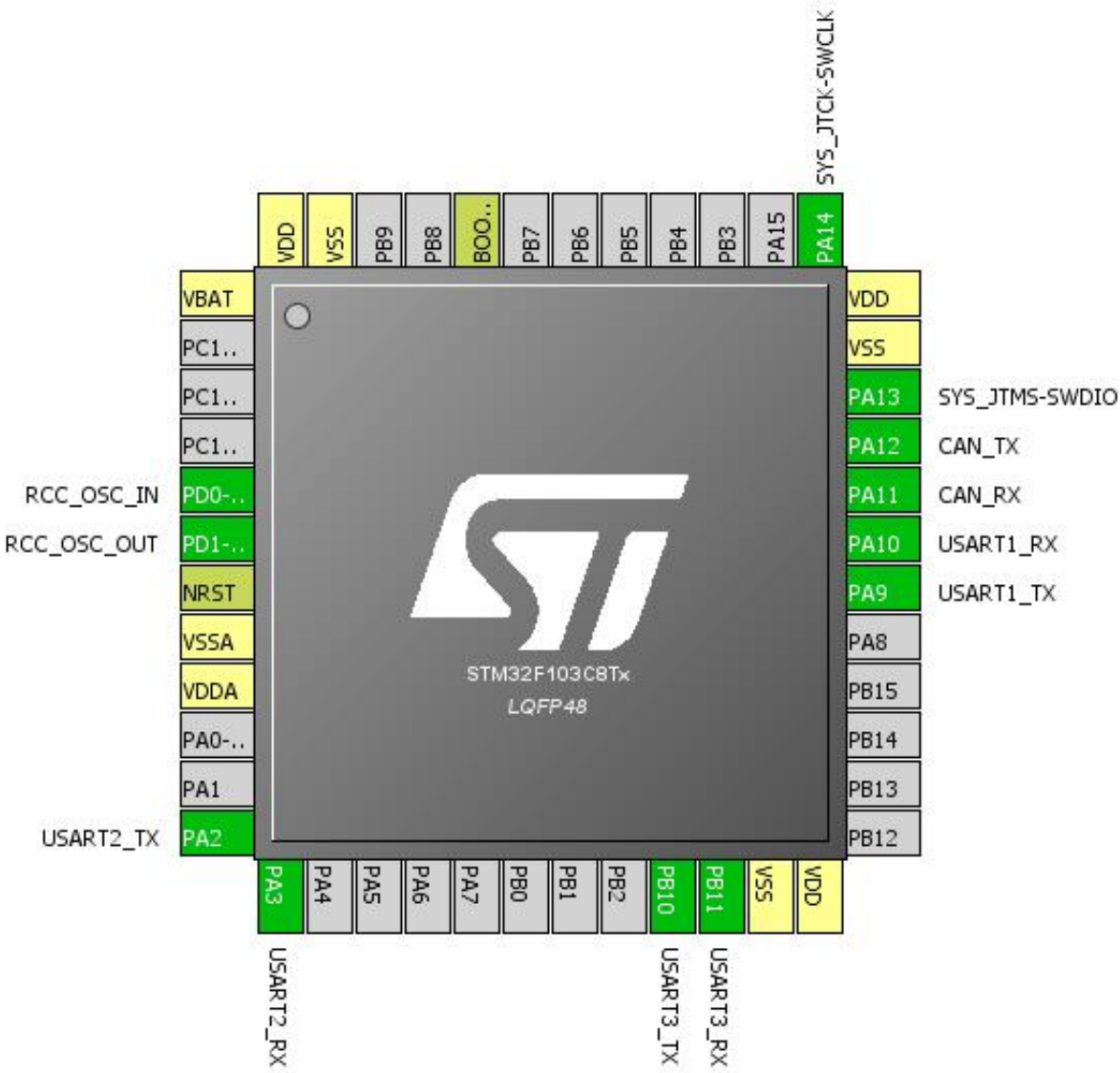
### 1.1. Project

Project Name	DTARpeater
Board Name	DTARpeater
Generated with:	STM32CubeMX 4.21.0
Date	09/09/2019

### 1.2. MCU

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

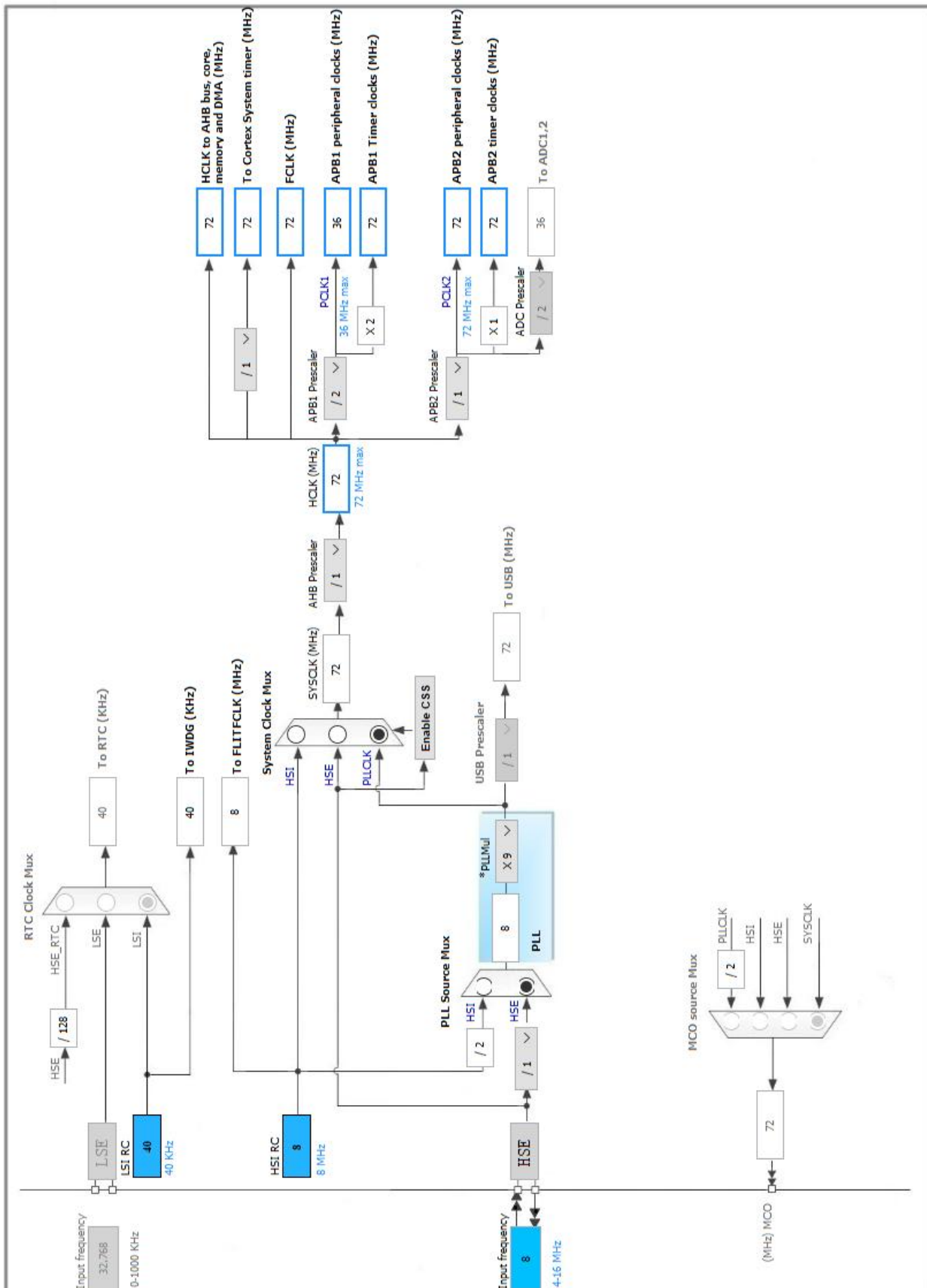
## 2. Pinout Configuration



### 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		
12	PA2	I/O	USART2_TX	
13	PA3	I/O	USART2_RX	
21	PB10	I/O	USART3_TX	
22	PB11	I/O	USART3_RX	
23	VSS	Power		
24	VDD	Power		
30	PA9	I/O	USART1_TX	
31	PA10	I/O	USART1_RX	
32	PA11	I/O	CAN_RX	
33	PA12	I/O	CAN_TX	
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. CAN

mode: Mode

#### 5.1.1. Parameter Settings:

##### Bit Timings Parameters:

Prescaler (for Time Quantum)	24 *
Time Quantum	666.6666666666667 *
Time Quanta in Bit Segment 1	6 Times *
Time Quanta in Bit Segment 2	8 Times *
Time for one Bit	10000 *
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	Enable *
Receive Fifo Locked Mode	Disable
Transmit Fifo Priority	Disable

##### Advanced Parameters:

Operating Mode	Normal
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### 5.2. IWDG

mode: Activated

#### 5.2.1. Parameter Settings:

##### Clocking:

IWDG counter clock prescaler	32 *
IWDG down-counter reload value	4095

## 5.3. RCC

### High Speed Clock (HSE): Crystal/Ceramic Resonator

#### 5.3.1. 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

## 5.4. SYS

### Debug: Serial Wire

### Timebase Source: SysTick

## 5.5. USART1

### Mode: Asynchronous

#### 5.5.1. 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

## 5.6. USART2

### Mode: Asynchronous

### 5.6.1. Parameter Settings:

#### Basic Parameters:

Baud Rate	<b>9600 *</b>
Word Length	8 Bits (including Parity)
Parity	None
Stop Bits	1

#### Advanced Parameters:

Data Direction	Receive and Transmit
Over Sampling	16 Samples

## 5.7. USART3

### Mode: Asynchronous

### 5.7.1. Parameter Settings:

#### Basic Parameters:

Baud Rate	<b>512000 *</b>
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
CAN	PA11	CAN_RX	Input mode	No pull-up and no pull-down	n/a	
	PA12	CAN_TX	Alternate Function Push Pull	n/a	<b>High *</b>	
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	<b>High *</b>	
	PA10	USART1_RX	Input mode	No pull-up and no pull-down	<b>n/a</b>	
USART2	PA2	USART2_TX	Alternate Function Push Pull	n/a	<b>High *</b>	
	PA3	USART2_RX	Input mode	No pull-up and no pull-down	<b>n/a</b>	
USART3	PB10	USART3_TX	Alternate Function Push Pull	n/a	<b>High *</b>	
	PB11	USART3_RX	Input mode	No pull-up and no pull-down	<b>n/a</b>	

### 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
USB low priority or CAN RX0 interrupts	true	0	0
PVD interrupt through EXTI line 16	unused		
Flash global interrupt	unused		
RCC global interrupt	unused		
USB high priority or CAN TX interrupts	unused		
CAN RX1 interrupt	unused		
CAN SCE interrupt	unused		
USART1 global interrupt	unused		
USART2 global interrupt	unused		
USART3 global 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	DTARepeater
Project Folder	C:\DTA Work_n0827\git\DTARepeater\DTARepeater
Toolchain / IDE	MDK-ARM V5
Firmware Package Name and Version	STM32Cube FW_F1 V1.4.0

### 8.2. Code Generation Settings

Name	Value
STM32Cube Firmware Library Package	Copy all used libraries into the project folder
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