

## 1. Description

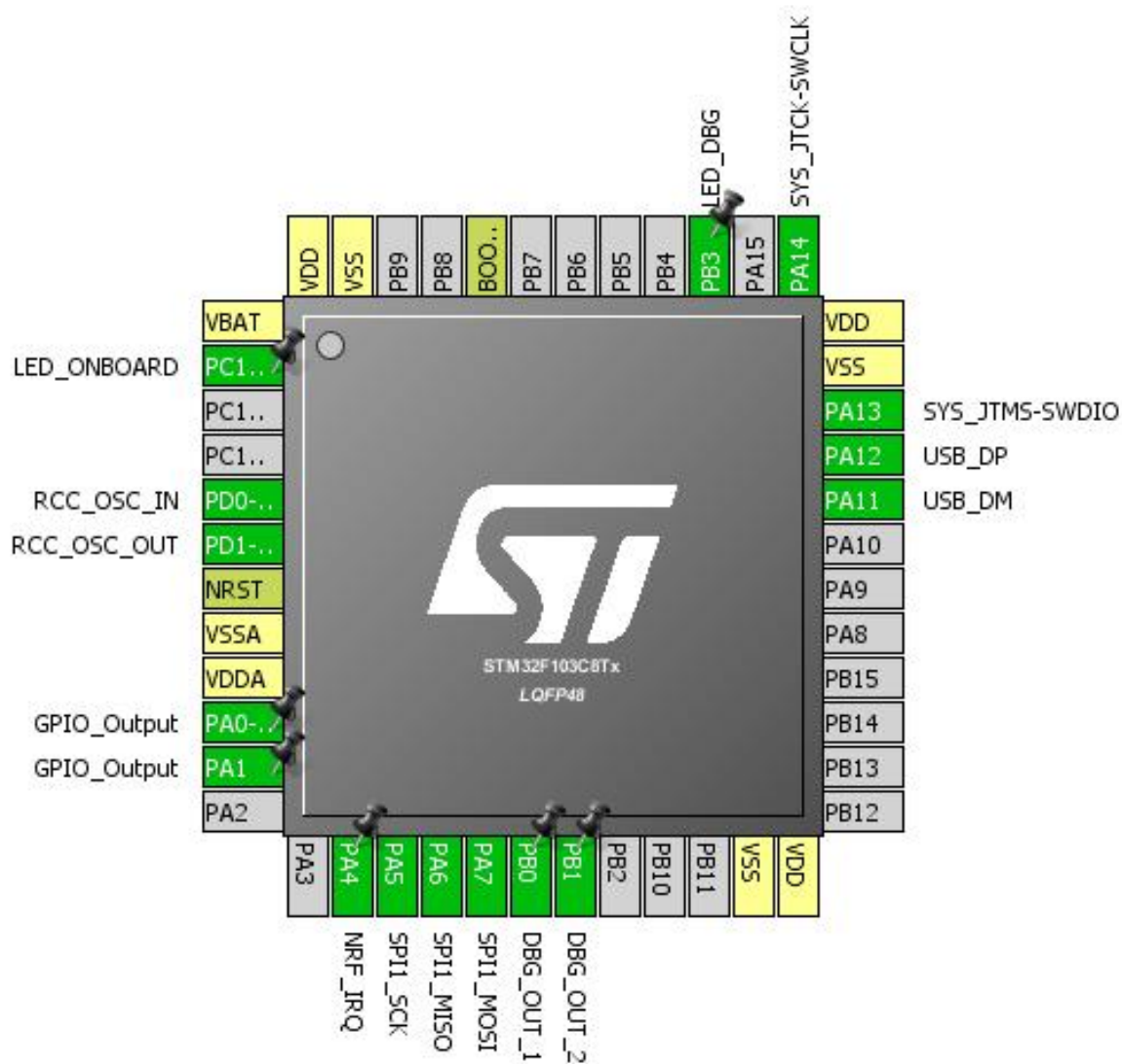
### 1.1. Project

Project Name	stm32f103c8t6
Board Name	stm32f103c8t6
Generated with:	STM32CubeMX 4.14.0
Date	03/31/2016

### 1.2. MCU

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

## 2. Pinout Configuration

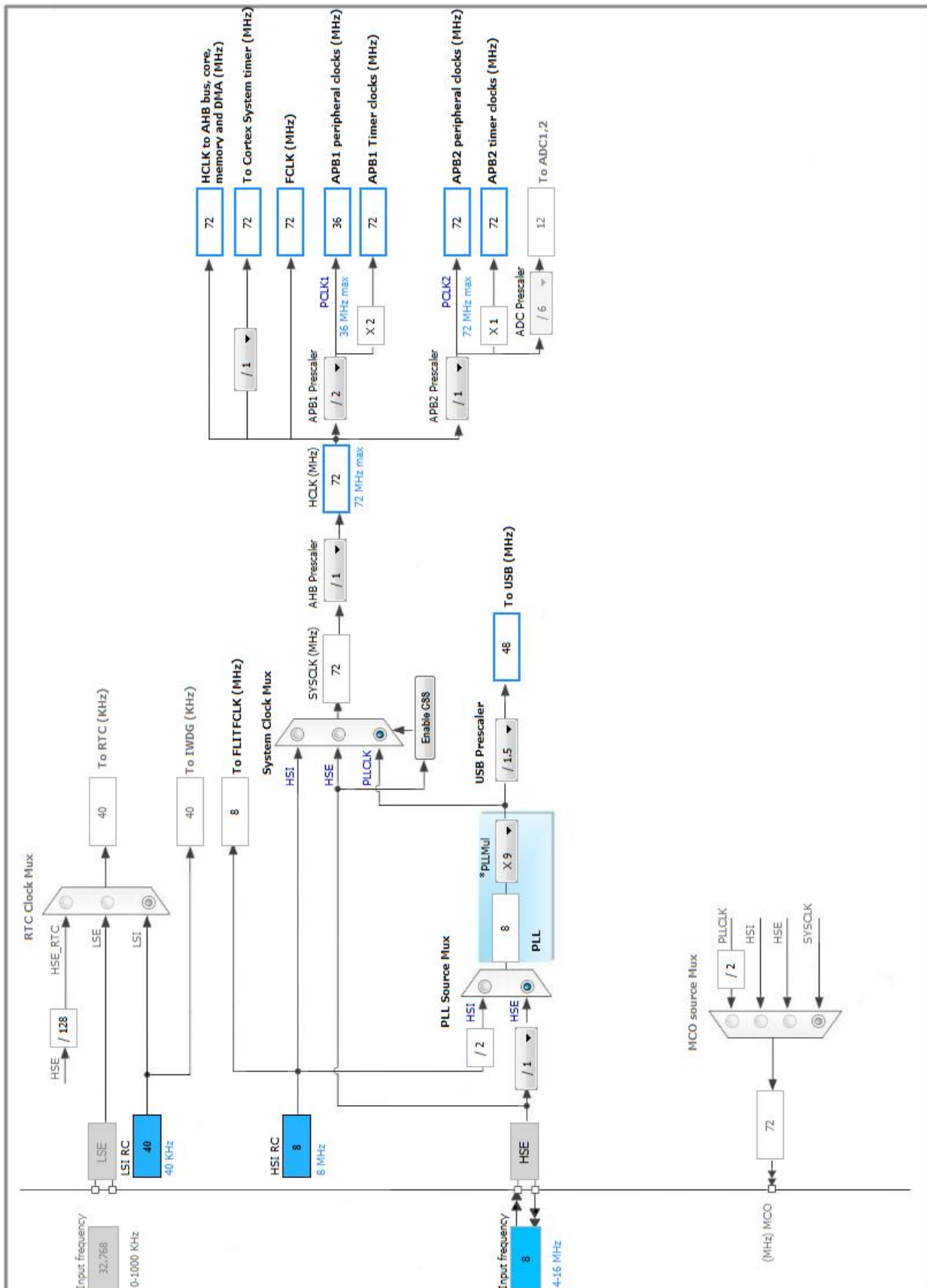


### 3. Pins Configuration

Pin Number LQFP48	Pin Name (function after reset)	Pin Type	Alternate Function(s)	Label
1	VBAT	Power		
2	PC13-TAMPER-RTC *	I/O	GPIO_Output	LED_ONBOARD
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		
10	PA0-WKUP *	I/O	GPIO_Output	
11	PA1 *	I/O	GPIO_Output	
14	PA4	I/O	GPIO_EXTI4	NRF_IRQ
15	PA5	I/O	SPI1_SCK	
16	PA6	I/O	SPI1_MISO	
17	PA7	I/O	SPI1_MOSI	
18	PB0 *	I/O	GPIO_Output	DBG_OUT_1
19	PB1 *	I/O	GPIO_Output	DBG_OUT_2
23	VSS	Power		
24	VDD	Power		
32	PA11	I/O	USB_DM	
33	PA12	I/O	USB_DP	
34	PA13	I/O	SYS_JTMS-SWDIO	
35	VSS	Power		
36	VDD	Power		
37	PA14	I/O	SYS_JTCK-SWCLK	
39	PB3 *	I/O	GPIO_Output	LED_DBG
44	BOOT0	Boot		
47	VSS	Power		
48	VDD	Power		

\* The pin is affected with an I/O function

## 4. Clock Tree Configuration



## 5. IPs and Middleware Configuration

### 5.1. RCC

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

##### 5.1.1. 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
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### 5.2. SPI1

#### Mode: Full-Duplex Master

##### 5.2.1. Parameter Settings:

###### Basic Parameters:

Frame Format	Motorola
Data Size	8 Bits
First Bit	MSB First

###### Clock Parameters:

Prescaler (for Baud Rate)	32 *
Baud Rate	2.25 MBits/s *
Clock Polarity (CPOL)	Low
Clock Phase (CPHA)	1 Edge

###### Advanced Parameters:

CRC Calculation	Disabled
NSS Signal Type	Software

### 5.3. SYS

**Debug: Serial-Wire**

**Timebase Source: SysTick**

## **5.4. TIM2**

**Clock Source : Internal Clock**

### **5.4.1. Parameter Settings:**

#### **Counter Settings:**

Prescaler (PSC - 16 bits value)	0
Counter Mode	Up
Counter Period (AutoReload Register - 16 bits value )	0
Internal Clock Division (CKD)	No Division

#### **Trigger Output (TRGO) Parameters:**

Master/Slave Mode	Disable (no sync between this TIM (Master) and its Slaves
Trigger Event Selection	Reset (UG bit from TIMx_EGR)

## **5.5. USB**

**mode: Device (FS)**

### **5.5.1. Parameter Settings:**

#### **Basic Parameters:**

Speed	Full Speed 12MBit/s
Endpoint 0 Max Packet size	8 Bytes

#### **Power Parameters:**

Low Power	Disabled
Link Power Management	Disabled
Battery Charging	Disabled

## **5.6. USB\_DEVICE**

**Class For FS IP: Communication Device Class (Virtual Port Com)**

### **5.6.1. Parameter Settings:**

**Basic Parameters:**

USBD_MAX_NUM_INTERFACES (Maximum number of supported interfaces)	1
USBD_MAX_NUM_CONFIGURATION (Maximum number of supported configuration)	1
USBD_MAX_STR_DESC_SIZ (Maximum size for the string descriptors)	512
USBD_SUPPORT_USER_STRING (Enable user string descriptor)	Disabled
USBD_SELF_POWERED (Enabled self power)	Enabled
USBD_DEBUG_LEVEL (USBD Debug Level)	0: No debug message

**Class Parameters:**

USBD_CDC_INTERVAL (Number of micro-frames interval)	1000
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**5.6.2. Device Descriptor:**

**Device Descriptor:**

VID (Vendor Identifier)	1155
LANGID_STRING (Language Identifier)	English(United States)
MANUFACTURER_STRING (Manufacturer Identifier)	STMicroelectronics

**Device Descriptor FS:**

PID (Product Identifier)	22336
PRODUCT_STRING (Product Identifier)	STM32 Virtual ComPort
SERIALNUMBER_STRING (Serial number)	00000000001A
CONFIGURATION_STRING (Configuration Identifier)	CDC Config
INTERFACE_STRING (Interface Identifier)	CDC Interface

\* User modified value

## 6. System Configuration

### 6.1. GPIO configuration

IP	Pin	Signal	GPIO mode	GPIO pull/up pull down	Max Speed	User Label
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	
SPI1	PA5	SPI1_SCK	Alternate Function Push Pull	n/a	High *	
	PA6	SPI1_MISO	Input mode	No pull-up and no pull-down	n/a	
	PA7	SPI1_MOSI	Alternate Function Push Pull	n/a	High *	
SYS	PA13	SYS_JTMS-SWDIO	n/a	n/a	n/a	
	PA14	SYS_JTCK-SWCLK	n/a	n/a	n/a	
USB	PA11	USB_DM	n/a	n/a	n/a	
	PA12	USB_DP	n/a	n/a	n/a	
GPIO	PC13-TAMPER-RTC	GPIO_Output	Output Push Pull	n/a	Low	LED_ONBOARD
	PA0-WKUP	GPIO_Output	Output Push Pull	n/a	High *	
	PA1	GPIO_Output	Output Push Pull	n/a	High *	
	PA4	GPIO_EXTI4	External Interrupt Mode with Falling edge trigger detection	Pull-up *	n/a	NRF_IRQ
	PB0	GPIO_Output	Output Push Pull	n/a	High *	DBG_OUT_1
	PB1	GPIO_Output	Output Push Pull	n/a	High *	DBG_OUT_2
	PB3	GPIO_Output	Output Push Pull	n/a	High *	LED_DBG

### 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
Debug monitor	true	0	0
System tick timer	true	0	0
EXTI line4 interrupt	true	0	0
USB low priority or CAN RX0 interrupts	true	0	0
SPI1 global interrupt	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		
TIM2 global interrupt	unused		

\* User modified value

## 7. Power Plugin 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	stm32f103c8t6
Project Folder	D:\nbobovnikov\home\dev\auvir\auvir_embed\mocap\usbdevice\stm32f103
Toolchain / IDE	EWARM
Firmware Package Name and Version	STM32Cube FW_F1 V1.3.1

### 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	No
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