# 1. Description

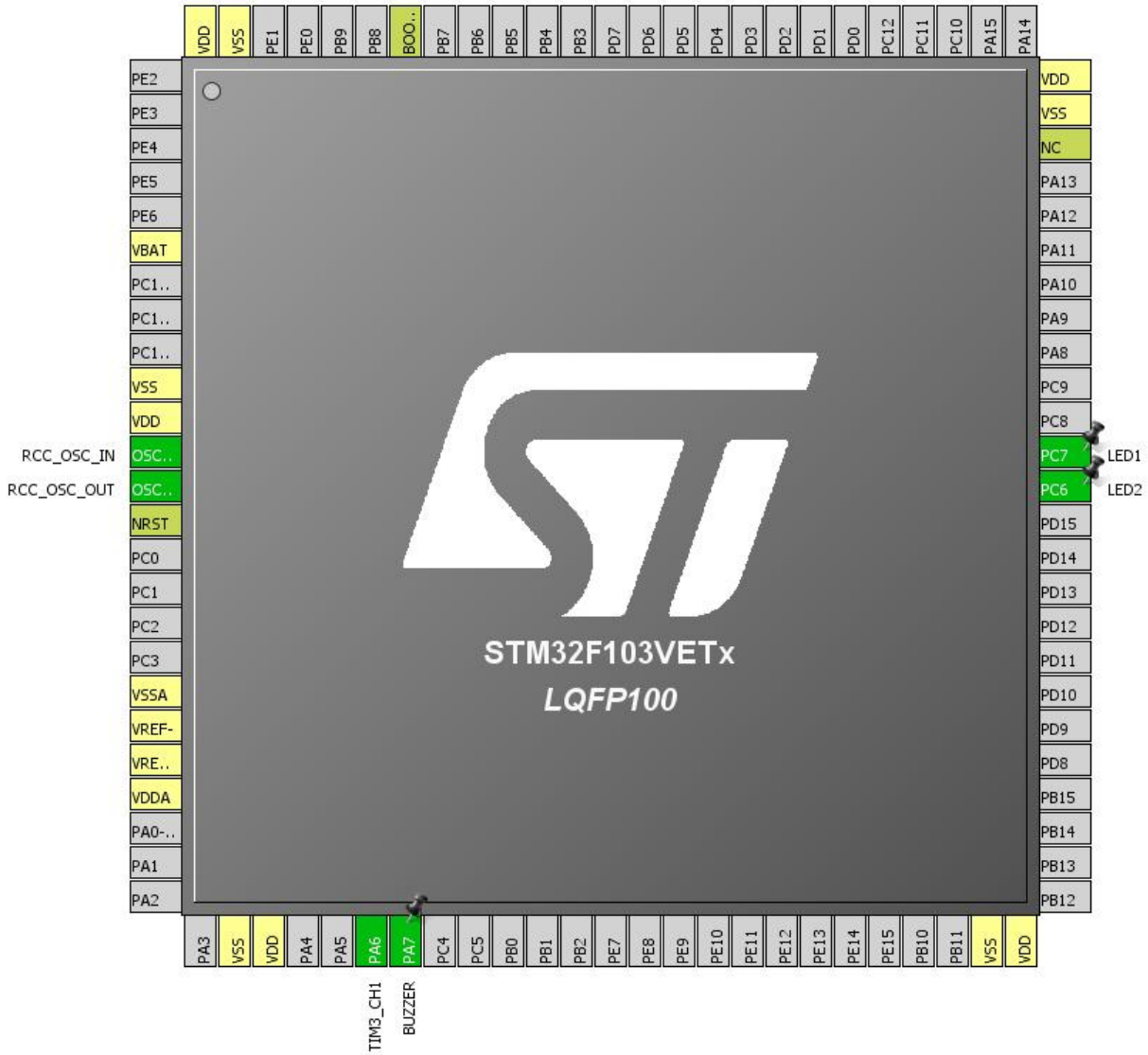
## 1.1. Project

| | |
|---|---|
| Project Name | digital_buzzer |
| Board Name | custom |
| Generated with: | STM32CubeMX 4.26.0 |
| Date | 08/11/2018 |

## 1.2. MCU

| | |
|---|---|
| MCU Series | STM32F1 |
| MCU Line | STM32F103 |
| MCU name | STM32F103VETx |
| MCU Package | LQFP100 |
| MCU Pin number | 100 |

# 2. Pinout Configuration

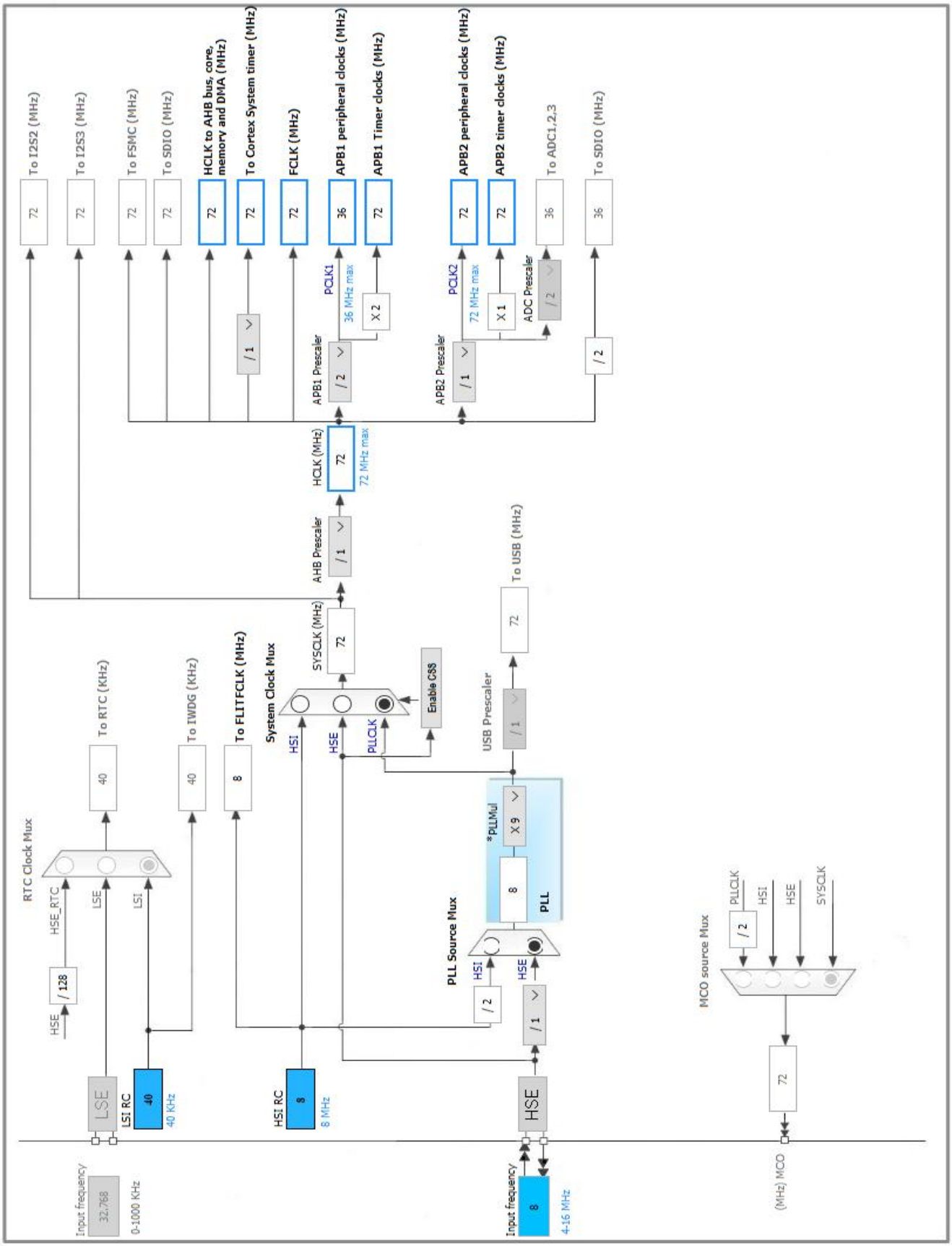


# 3. Pins Configuration

| Pin Number LQFP100 | Pin Name (function after reset) | Pin Type | Alternate Function(s) | Label |
|---|---|---|---|---|
| 6 | VBAT | Power | | |
| 10 | VSS | Power | | |
| 11 | VDD | Power | | |
| 12 | OSC_IN | I/O | RCC_OSC_IN | |
| 13 | OSC_OUT | I/O | RCC_OSC_OUT | |
| 14 | NRST | Reset | | |
| 19 | VSSA | Power | | |
| 20 | VREF- | Power | | |
| 21 | VREF+ | Power | | |
| 22 | VDDA | Power | | |
| 27 | VSS | Power | | |
| 28 | VDD | Power | | |
| 31 | PA6 | I/O | TIM3_CH1 | |
| 32 | PA7 * | I/O | GPIO_Output | BUZZER |
| 49 | VSS | Power | | |
| 50 | VDD | Power | | |
| 63 | PC6 * | I/O | GPIO_Output | LED2 |
| 64 | PC7 * | I/O | GPIO_Output | LED1 |
| 73 | NC | NC | | |
| 74 | VSS | Power | | |
| 75 | VDD | Power | | |
| 94 | BOOT0 | Boot | | |
| 99 | VSS | Power | | |
| 100 | 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 |
| HSE Startup Timout Value (ms) | 100 |
| LSE Startup Timout Value (ms) | 5000 |

## 5.2. SYS

**Debug: No Debug**

**Timebase Source: SysTick**

## 5.3. TIM3

**Clock Source : Internal Clock**

**Channel1: PWM Generation CH1**

### 5.3.1. Parameter Settings:

**Counter Settings:**

| | |
|---|---|
| Prescaler (PSC - 16 bits value) | **72-1 *** |
| Counter Mode | Up |
| Counter Period (AutoReload Register - 16 bits value ) | **100 *** |
| Internal Clock Division (CKD) | No Division |
| auto-reload preload | Disable |

**Trigger Output (TRGO) Parameters:**

| | |
|---|---|
| Master/Slave Mode (MSM bit) | Disable (Trigger input effect not delayed) |
| Trigger Event Selection | Reset (UG bit from TIMx_EGR) |

**PWM Generation Channel 1:**

| | |
|---|---|
| Mode | PWM mode 1 |
| Pulse (16 bits value) | 0 |
| Fast Mode | Disable |

| | |
|---|---|
| CH Polarity | High |

*** 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 | OSC_IN | RCC_OSC_IN | n/a | n/a | n/a | |
| | OSC_OUT | RCC_OSC_OUT | n/a | n/a | n/a | |
| TIM3 | PA6 | TIM3_CH1 | Alternate Function Push Pull | n/a | Low | |
| GPIO | PA7 | GPIO_Output | Output Push Pull | No pull-up and no pull-down | Low | BUZZER |
| | PC6 | GPIO_Output | Output Push Pull | No pull-up and no pull-down | Low | LED2 |
| | PC7 | GPIO_Output | Output Push Pull | No pull-up and no pull-down | Low | LED1 |

## 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 | | |
| Flash global interrupt | unused | | |
| RCC global interrupt | unused | | |
| TIM3 global interrupt | unused | | |

*** User modified value**

# 7. Power Consumption Calculator report

7.1. Microcontroller Selection

| | |
|---|---|
| Series | STM32F1 |
| Line | STM32F103 |
| MCU | STM32F103VETx |
| Datasheet | 14611_Rev12 |

7.2. Parameter Selection

| | |
|---|---|
| Temperature | 25 |
| Vdd | 3.3 |

# 8. Software Project

## 8.1. Project Settings

| Name | Value |
|---|---|
| Project Name | digital_buzzer |
| Project Folder | D:\[project]\stm32f103vet6\github\digital_buzzer |
| 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) | No |

# 9. Software Pack Report