

1. Description

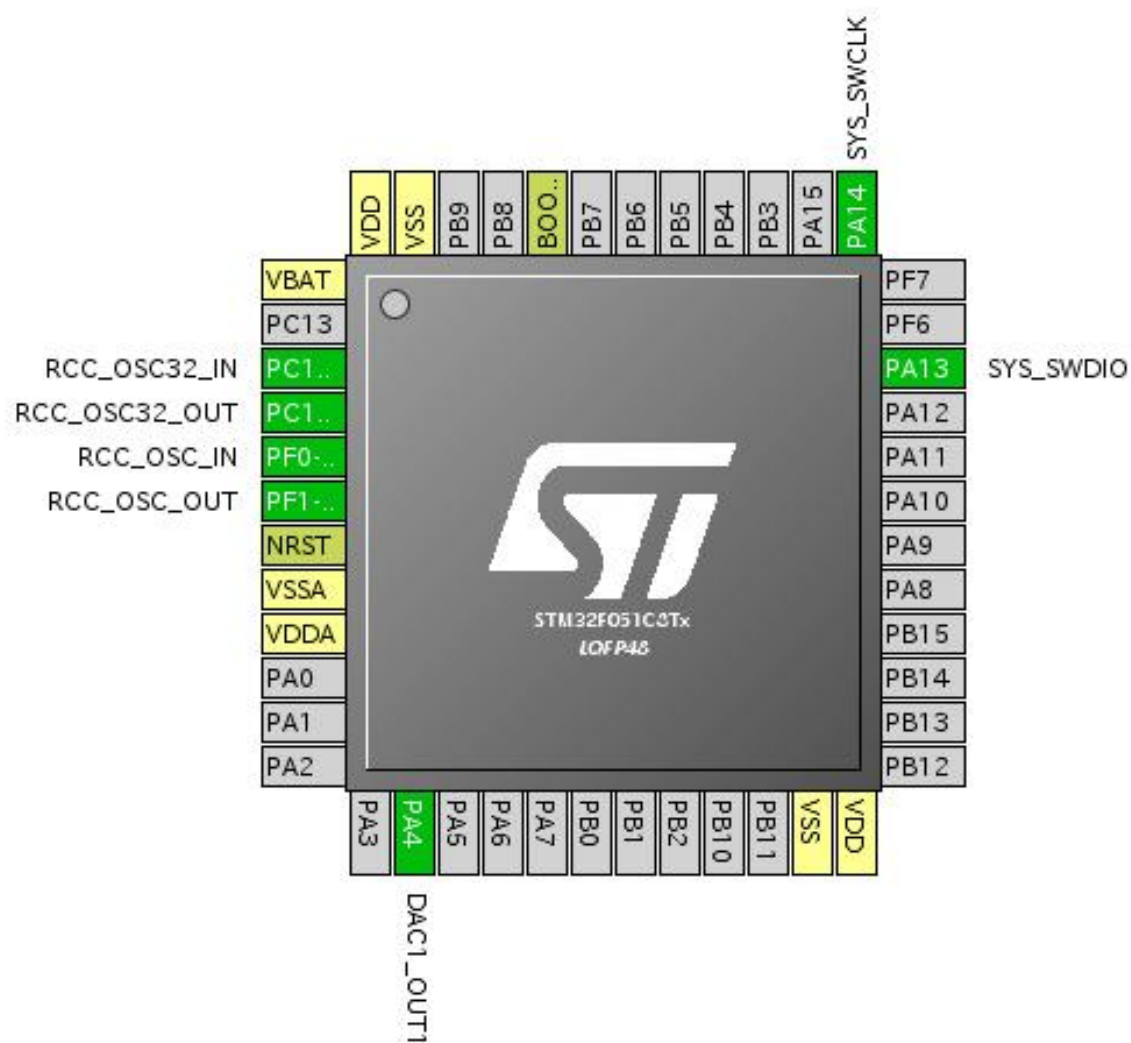
1.1. Project

| | |
|-----------------|---------------------|
| Project Name | stm32f051_dma_tim17 |
| Board Name | stm32f051_dma_tim17 |
| Generated with: | STM32CubeMX 4.18.0 |
| Date | 01/20/2017 |

1.2. MCU

| | |
|----------------|---------------|
| MCU Series | STM32F0 |
| MCU Line | STM32F0x1 |
| MCU name | STM32F051C8Tx |
| MCU Package | LQFP48 |
| MCU Pin number | 48 |

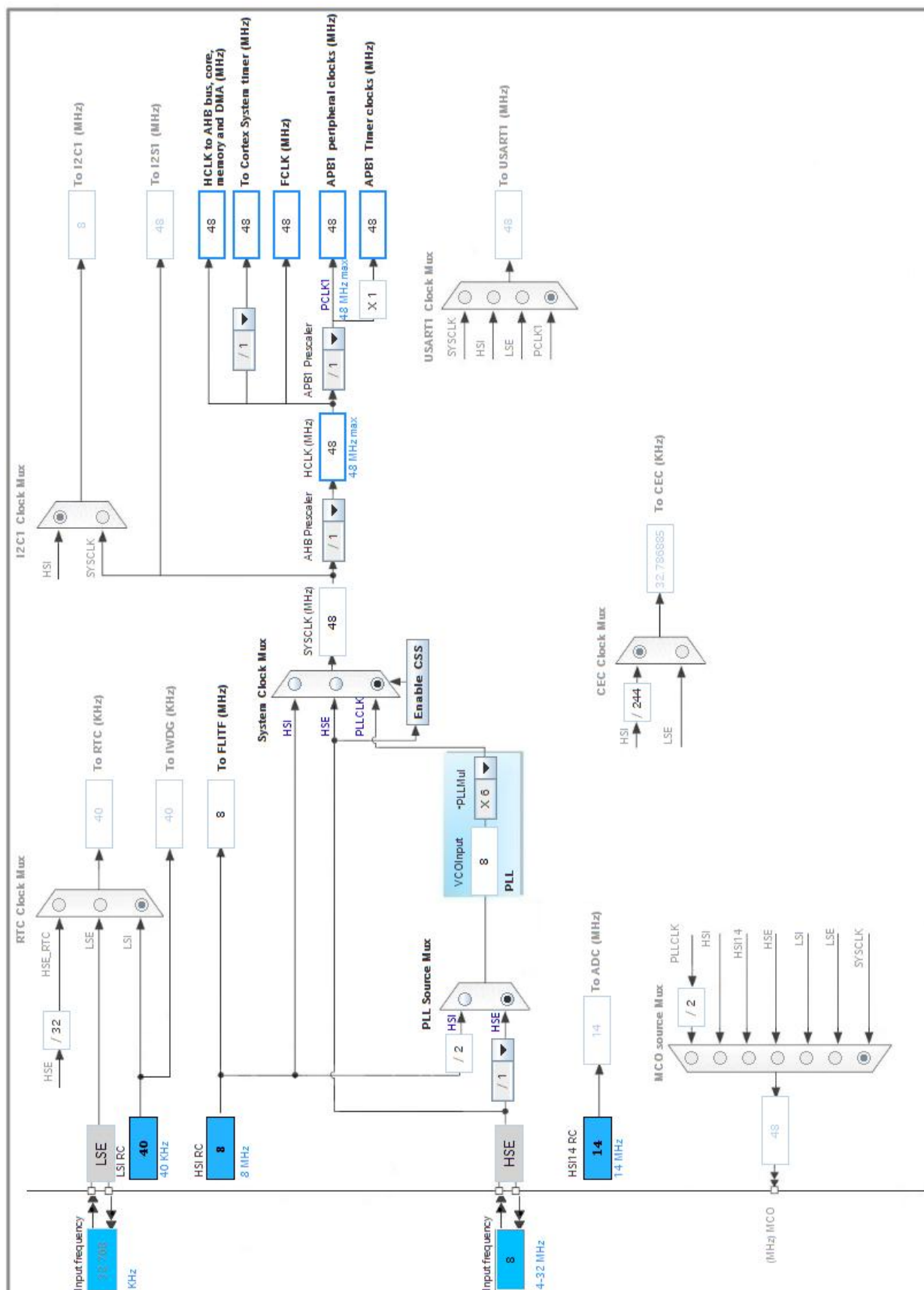
2. Pinout Configuration



3. Pins Configuration

| Pin Number LQFP48 | Pin Name (function after reset) | Pin Type | Alternate Function(s) | Label |
|----------------------|---------------------------------------|----------|--------------------------|-------|
| 1 | VBAT | Power | | |
| 3 | PC14-OSC32_IN | I/O | RCC_OSC32_IN | |
| 4 | PC15-OSC32_OUT | I/O | RCC_OSC32_OUT | |
| 5 | PF0-OSC_IN | I/O | RCC_OSC_IN | |
| 6 | PF1-OSC_OUT | I/O | RCC_OSC_OUT | |
| 7 | NRST | Reset | | |
| 8 | VSSA | Power | | |
| 9 | VDDA | Power | | |
| 14 | PA4 | I/O | DAC1_OUT1 | |
| 23 | VSS | Power | | |
| 24 | VDD | Power | | |
| 34 | PA13 | I/O | SYS_SWDIO | |
| 37 | PA14 | I/O | SYS_SWCLK | |
| 44 | BOOT0 | Boot | | |
| 47 | VSS | Power | | |
| 48 | VDD | Power | | |

4. Clock Tree Configuration



5. IPs and Middleware Configuration

5.1. DAC1

mode: OUT1 Configuration

5.1.1. Parameter Settings:

DAC Out1 Settings:

| | |
|---------------|--------|
| Output Buffer | Enable |
| Trigger | None |

5.2. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

Low Speed Clock (LSE) : Crystal/Ceramic Resonator

5.2.1. Parameter Settings:

System Parameters:

| | |
|-------------------|--------------------|
| VDD voltage (V) | 3.3 |
| Instruction Cache | Disabled |
| Prefetch Buffer | Enabled |
| Data Cache | Disabled |
| Flash Latency(WS) | 1 WS (2 CPU cycle) |

RCC Parameters:

| | |
|--------------------------------|------|
| HSE Startup Timeout Value (ms) | 100 |
| LSE Startup Timeout Value (ms) | 5000 |

5.3. SYS

mode: Debug Serial Wire

Timebase Source: SysTick

5.4. TIM17

mode: Activated

5.4.1. Parameter Settings:

Counter Settings:

| | |
|---|-----------------|
| Prescaler (PSC - 16 bits value) | 0 |
| Counter Mode | Up |
| Counter Period (AutoReload Register - 16 bits value) | 3000-1 * |
| Internal Clock Division (CKD) | No Division |
| Repetition Counter (RCR - 8 bits value) | 0 |
| auto-reload preload | Disable |

*** User modified value**

6. System Configuration

6.1. GPIO configuration

| IP | Pin | Signal | GPIO mode | GPIO pull/up pull down | Max Speed | User Label |
|------|----------------|---------------|-------------|-----------------------------|-----------|------------|
| DAC1 | PA4 | DAC1_OUT1 | Analog mode | No pull-up and no pull-down | n/a | |
| RCC | PC14-OSC32_IN | RCC_OSC32_IN | n/a | n/a | n/a | |
| | PC15-OSC32_OUT | RCC_OSC32_OUT | n/a | n/a | n/a | |
| | PF0-OSC_IN | RCC_OSC_IN | n/a | n/a | n/a | |
| | PF1-OSC_OUT | RCC_OSC_OUT | n/a | n/a | n/a | |
| SYS | PA13 | SYS_SWDIO | n/a | n/a | n/a | |
| | PA14 | SYS_SWCLK | n/a | n/a | n/a | |

6.2. DMA configuration

| DMA request | Stream | Direction | Priority |
|--------------|---------------|----------------------|----------|
| TIM17_CH1/UP | DMA1_Channel1 | Memory To Peripheral | Low |

TIM17_CH1/UP: DMA1_Channel1 DMA request Settings:

Mode: **Circular ***
Peripheral Increment: Disable
Memory Increment: **Enable ***
Peripheral Data Width: Half Word
Memory Data Width: Half Word

6.3. NVIC configuration

| Interrupt Table | Enable | Preenmption Priority | SubPriority |
|---|--------|----------------------|-------------|
| Non maskable interrupt | true | 0 | 0 |
| Hard fault interrupt | true | 0 | 0 |
| System service call via SWI instruction | true | 0 | 0 |
| Pendable request for system service | true | 0 | 0 |
| System tick timer | true | 0 | 0 |
| DMA1 channel 1 interrupt | true | 0 | 0 |
| PVD interrupt through EXTI Line16 | unused | | |
| Flash global interrupt | unused | | |
| RCC global interrupt | unused | | |
| TIM6 global and DAC underrun error interrupts | unused | | |
| TIM17 global interrupt | unused | | |

* User modified value

7. Power Consumption Calculator report

7.1. Microcontroller Selection

| | |
|-----------|---------------|
| Series | STM32F0 |
| Line | STM32F0x1 |
| MCU | STM32F051C8Tx |
| Datasheet | 022265_Rev6 |

7.2. Parameter Selection

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

8. Software Project

8.1. Project Settings

| Name | Value |
|-----------------------------------|--|
| Project Name | stm32f051_dma_tim17 |
| Project Folder | /home/stm/stm32project/stm32f051_dma_tim17 |
| Toolchain / IDE | SW4STM32 |
| Firmware Package Name and Version | STM32Cube FW_F0 V1.7.0 |

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 | 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 |