

1. Description

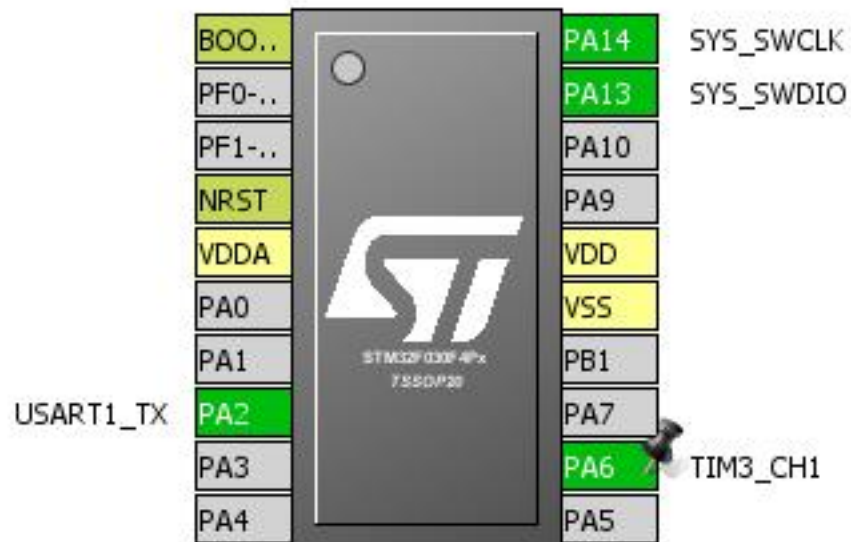
1.1. Project

| | |
|-----------------|--------------------|
| Project Name | 11_PWM |
| Board Name | 11_PWM |
| Generated with: | STM32CubeMX 4.22.0 |
| Date | 01/28/2018 |

1.2. MCU

| | |
|----------------|----------------------|
| MCU Series | STM32F0 |
| MCU Line | STM32F0x0 Value Line |
| MCU name | STM32F030F4Px |
| MCU Package | TSSOP20 |
| MCU Pin number | 20 |

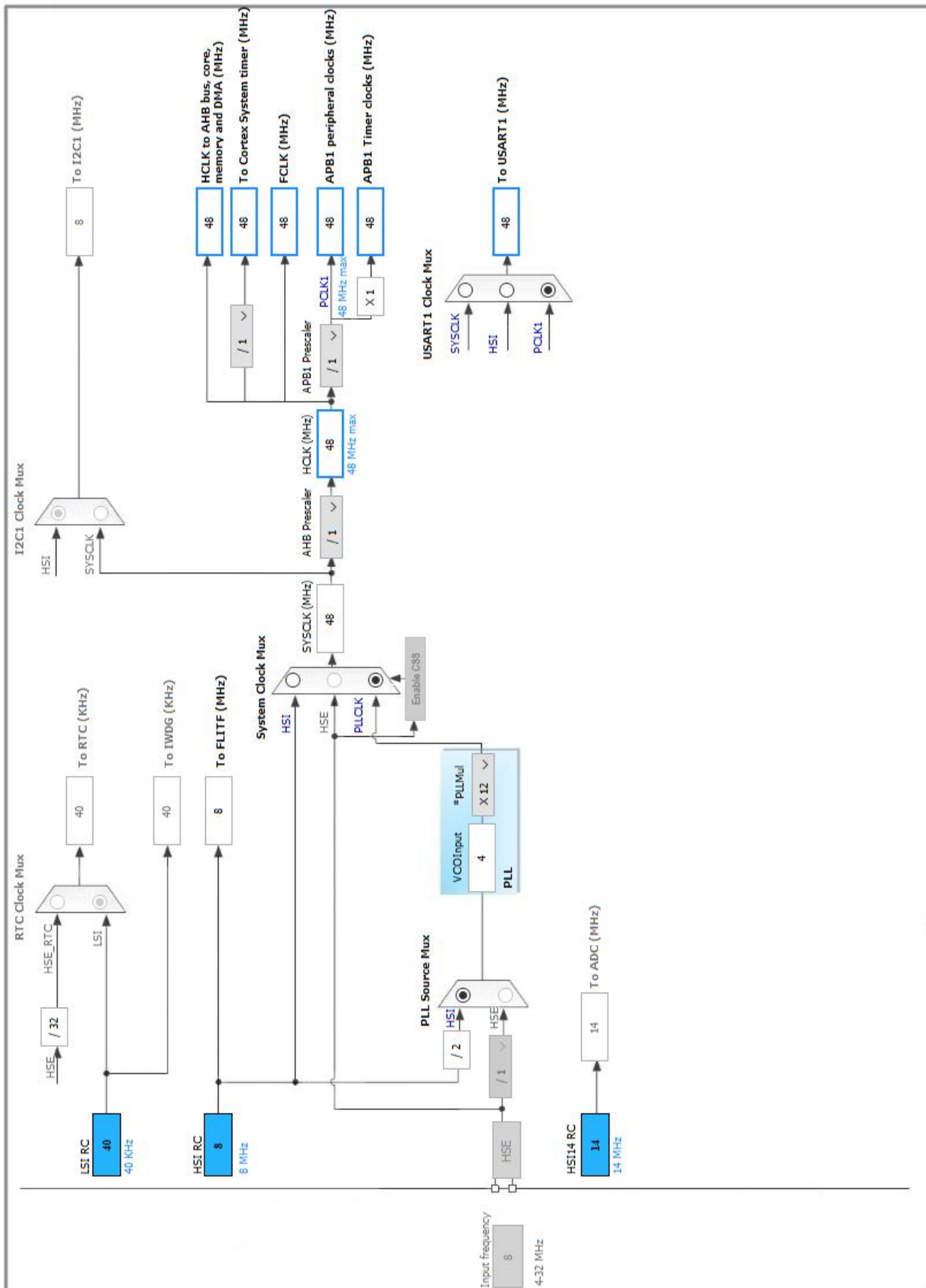
2. Pinout Configuration



3. Pins Configuration

| Pin Number TSSOP20 | Pin Name (function after reset) | Pin Type | Alternate Function(s) | Label |
|-----------------------|---------------------------------------|----------|--------------------------|-------|
| 1 | BOOT0 | Boot | | |
| 4 | NRST | Reset | | |
| 5 | VDDA | Power | | |
| 8 | PA2 | I/O | USART1_TX | |
| 12 | PA6 | I/O | TIM3_CH1 | |
| 15 | VSS | Power | | |
| 16 | VDD | Power | | |
| 19 | PA13 | I/O | SYS_SWDIO | |
| 20 | PA14 | I/O | SYS_SWCLK | |

4. Clock Tree Configuration



5. IPs and Middleware Configuration

5.1. SYS

mode: Debug Serial Wire

Timebase Source: SysTick

5.2. TIM3

mode: Clock Source

Channel1: PWM Generation CH1

5.2.1. Parameter Settings:

Counter Settings:

| | |
|---|-------------|
| Prescaler (PSC - 16 bits value) | 24 * |
| Counter Mode | Up |
| Counter Period (AutoReload Register - 16 bits value) | 200 * |
| Internal Clock Division (CKD) | No Division |
| auto-reload preload | Disable |

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) |

PWM Generation Channel 1:

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

5.3. USART1

Mode: Single Wire (Half-Duplex)

5.3.1. Parameter Settings:

Basic Parameters:

| | |
|-------------|---------------------------|
| Baud Rate | 38400 |
| Word Length | 8 Bits (including Parity) |

| | |
|-------------------------------|----------------------|
| Parity | None |
| Stop Bits | 1 |
| Advanced Parameters: | |
| Data Direction | Receive and Transmit |
| Over Sampling | 16 Samples |
| Single Sample | Disable |
| Advanced Features: | |
| Auto Baudrate | Disable |
| TX Pin Active Level Inversion | Disable |
| RX Pin Active Level Inversion | Disable |
| Data Inversion | Disable |
| TX and RX Pins Swapping | Disable |
| Overrun | Enable |
| DMA on RX Error | Enable |
| MSB First | 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 |
|--------|------|-----------|-------------------------------|-----------------------------|-----------|------------|
| SYS | PA13 | SYS_SWDIO | n/a | n/a | n/a | |
| | PA14 | SYS_SWCLK | n/a | n/a | n/a | |
| TIM3 | PA6 | TIM3_CH1 | Alternate Function Push Pull | No pull-up and no pull-down | Low | |
| USART1 | PA2 | USART1_TX | Alternate Function Open Drain | Pull-up | High * | |

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 |
| System service call via SWI instruction | true | 0 | 0 |
| Pendable request for system service | true | 0 | 0 |
| System tick timer | true | 0 | 0 |
| Flash global interrupt | unused | | |
| RCC global interrupt | unused | | |
| TIM3 global interrupt | unused | | |
| USART1 global interrupt | unused | | |

* User modified value

7. Power Consumption Calculator report

7.1. Microcontroller Selection

| | |
|-----------|----------------------|
| Series | STM32F0 |
| Line | STM32F0x0 Value Line |
| MCU | STM32F030F4Px |
| Datasheet | 024849_Rev2 |

7.2. Parameter Selection

| | |
|-------------|-----|
| Temperature | 25 |
| Vdd | 3.6 |

8. Software Project

8.1. Project Settings

| Name | Value |
|-----------------------------------|--|
| Project Name | 11_PWM |
| Project Folder | C:\Users\larmst\Desktop\STM32\STM32F030F4P6\GCC\11_PWM |
| Toolchain / IDE | TrueSTUDIO |
| Firmware Package Name and Version | STM32Cube FW_F0 V1.8.0 |

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 |