

1. Description

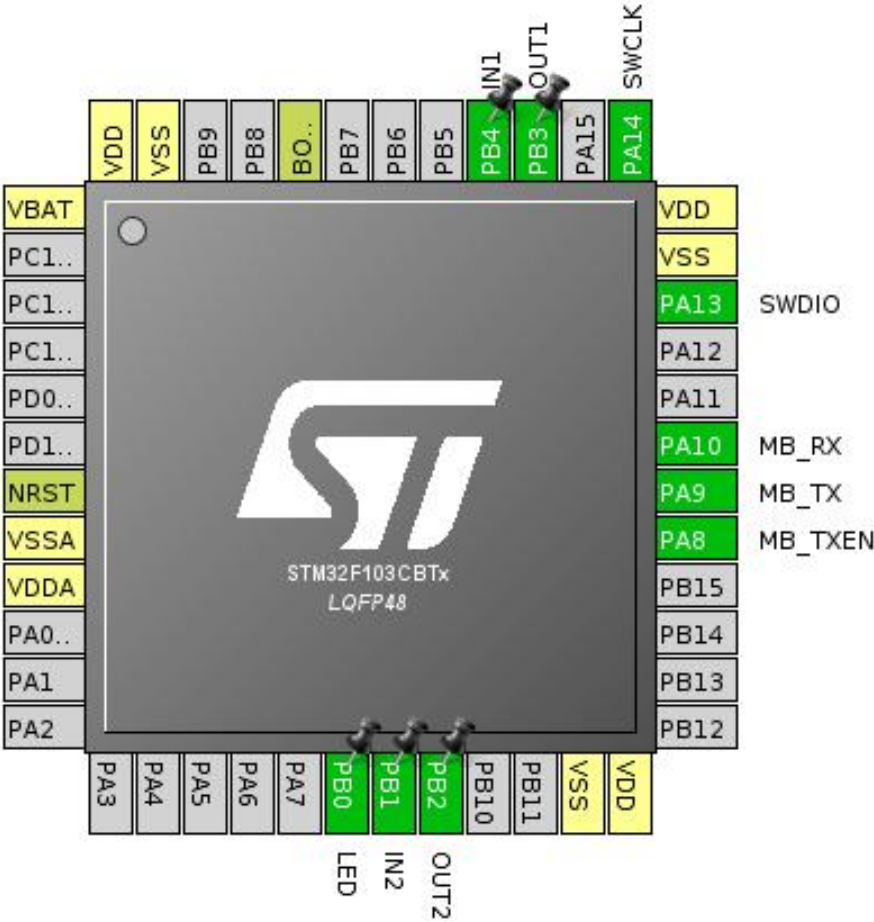
1.1. Project

| | |
|-----------------|--------------------|
| Project Name | stm32F103-mbswitch |
| Board Name | custom |
| Generated with: | STM32CubeMX 4.9.0 |
| Date | 12/29/2019 |

1.2. MCU

| | |
|----------------|---------------|
| MCU Series | STM32F1 |
| MCU Line | STM32F103 |
| MCU name | STM32F103CBTx |
| 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 | | |
| 7 | NRST | Reset | | |
| 8 | VSSA | Power | | |
| 9 | VDDA | Power | | |
| 18 | PB0 * | I/O | GPIO_Output | LED |
| 19 | PB1 * | I/O | GPIO_Input | IN2 |
| 20 | PB2 * | I/O | GPIO_Output | OUT2 |
| 23 | VSS | Power | | |
| 24 | VDD | Power | | |
| 29 | PA8 * | I/O | GPIO_Output | MB_TXEN |
| 30 | PA9 | I/O | USART1_TX | MB_TX |
| 31 | PA10 | I/O | USART1_RX | MB_RX |
| 34 | PA13 | I/O | SYS_JTMS-SWDIO | SWDIO |
| 35 | VSS | Power | | |
| 36 | VDD | Power | | |
| 37 | PA14 | I/O | SYS_JTCK-SWCLK | SWCLK |
| 39 | PB3 * | I/O | GPIO_Output | OUT1 |
| 40 | PB4 * | I/O | GPIO_Input | IN1 |
| 44 | BOOT0 | Boot | | |
| 47 | VSS | Power | | |
| 48 | VDD | Power | | |

* The pin is affected with an I/O function

4. IPs and Middleware Configuration

4.1. ADC1

mode: Temperature Sensor Channel

mode: Vrefint Channel

ADCs_Common_Settings:

Mode Independent mode

ADC_Settings:

Data Alignment Right alignment

Scan Conversion Mode Disabled

Continuous Conversion Mode Disabled

Discontinuous Conversion Mode Disabled

ADC_Regular_ConversionMode:

Enable Regular Conversions Enable

Enable Regular Conversions Enable

Rank 1

Channel **Channel Temperature Sensor ***

Sampling Time 1.5 Cycles

ADCgroup:

Number Of Conversion 1

External Trigger Conversion Edge None

Number Of Conversions 0

Number Of Conversion 1

External Trigger Conversion Edge None

WatchDog:

Enable Analog WatchDog Mode false

4.2. IWDG

mode: Activated

Clocking:

IWDG counter clock prescaler 4

IWDG down-counter reload value 4095

4.3. SYS

Debug: Serial-Wire

4.4. TIM4

mode: Clock Source

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) |

4.5. USART1

Mode: Asynchronous

Basic Parameters:

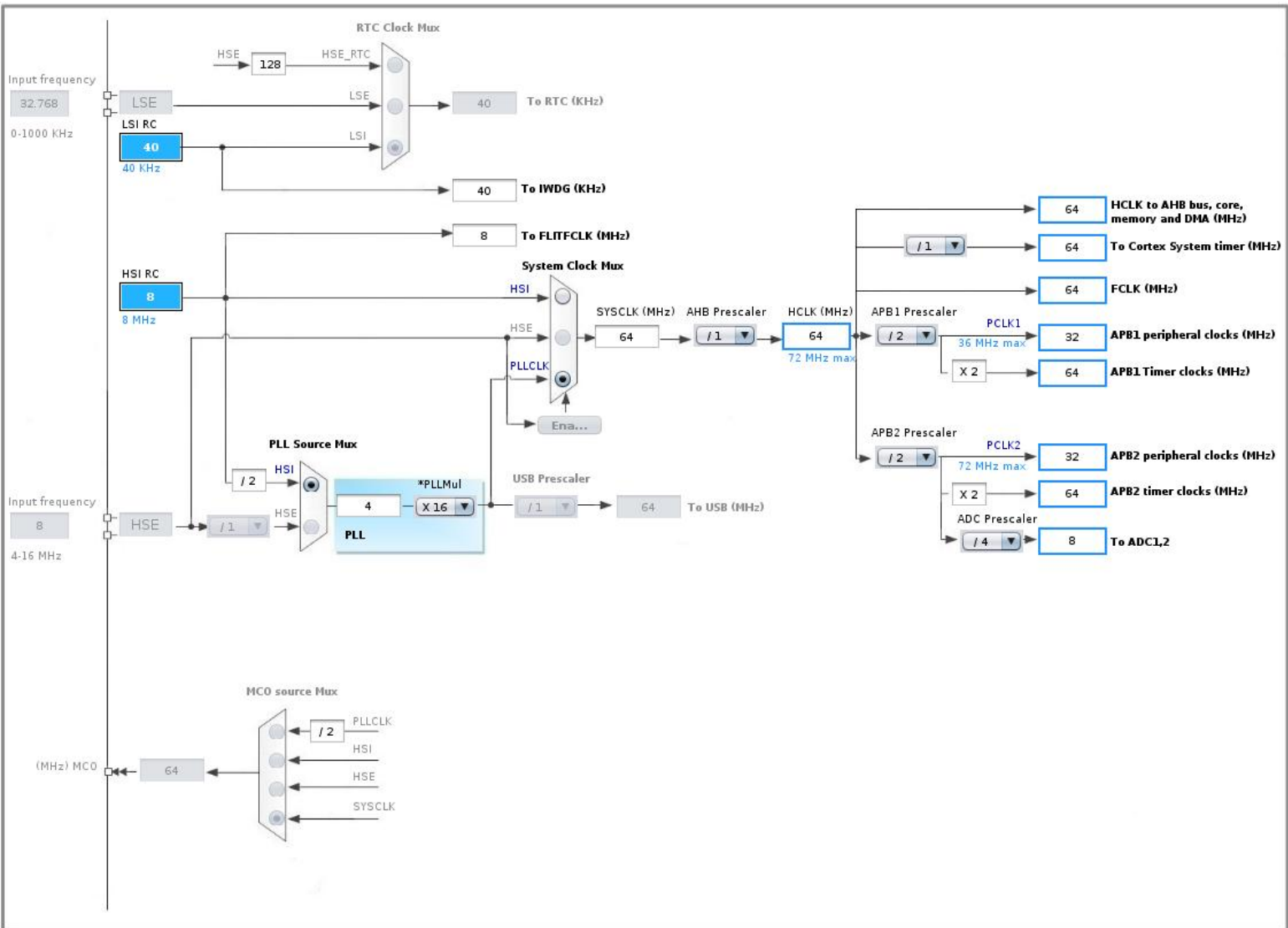
| | |
|-------------|---------------------------|
| Baud Rate | 115200 |
| Word Length | 8 Bits (including Parity) |
| Parity | None |
| Stop Bits | 1 |

Advanced Parameters:

| | |
|----------------|----------------------|
| Data Direction | Receive and Transmit |
| Over Sampling | 16 Samples |

* User modified value

2. Clock Tree Configuration



3. Power Plugin report

3.1. Microcontroller Selection

| | |
|-----------|---------------|
| Series | STM32F1 |
| Line | STM32F103 |
| MCU | STM32F103CBTx |
| Datasheet | 13587_Rev16 |

3.2. Parameter Selection

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

3.3. Sequence

| | |
|--------------------|---------------------------------------|
| Step | STEP1 |
| Mode | RUN |
| Range | No Scale |
| Fetch type | FLASH |
| Clock Config. | HSI PLL |
| Clock Source Freq. | 8.0 MHz |
| CPU Freq. | 36.0 MHz |
| Periph. | GPIOA GPIOB GPIOC IWDG TIM4 USART1 |
| Additional Cons. | 0 mA |
| Average Current | 15.68 mA |
| Duration | 1 ms |
| DMIPS | 45.0 |

3.4. Results

| | | | |
|---------------|------|-----------------|----------|
| Sequence time | 1 ms | Average current | 15.68 mA |
| | | | |

| | | | |
|--------------|---|---------------|------------|
| Battery Life | 0 | Average DMIPS | 45.0 DMIPS |
|--------------|---|---------------|------------|

3.5. Chart