

1. Description

1.1. Project

| | |
|-----------------|--------------------|
| Project Name | ugui |
| Board Name | NUCLEO-F103RB |
| Generated with: | STM32CubeMX 4.21.0 |
| Date | 01/19/2019 |

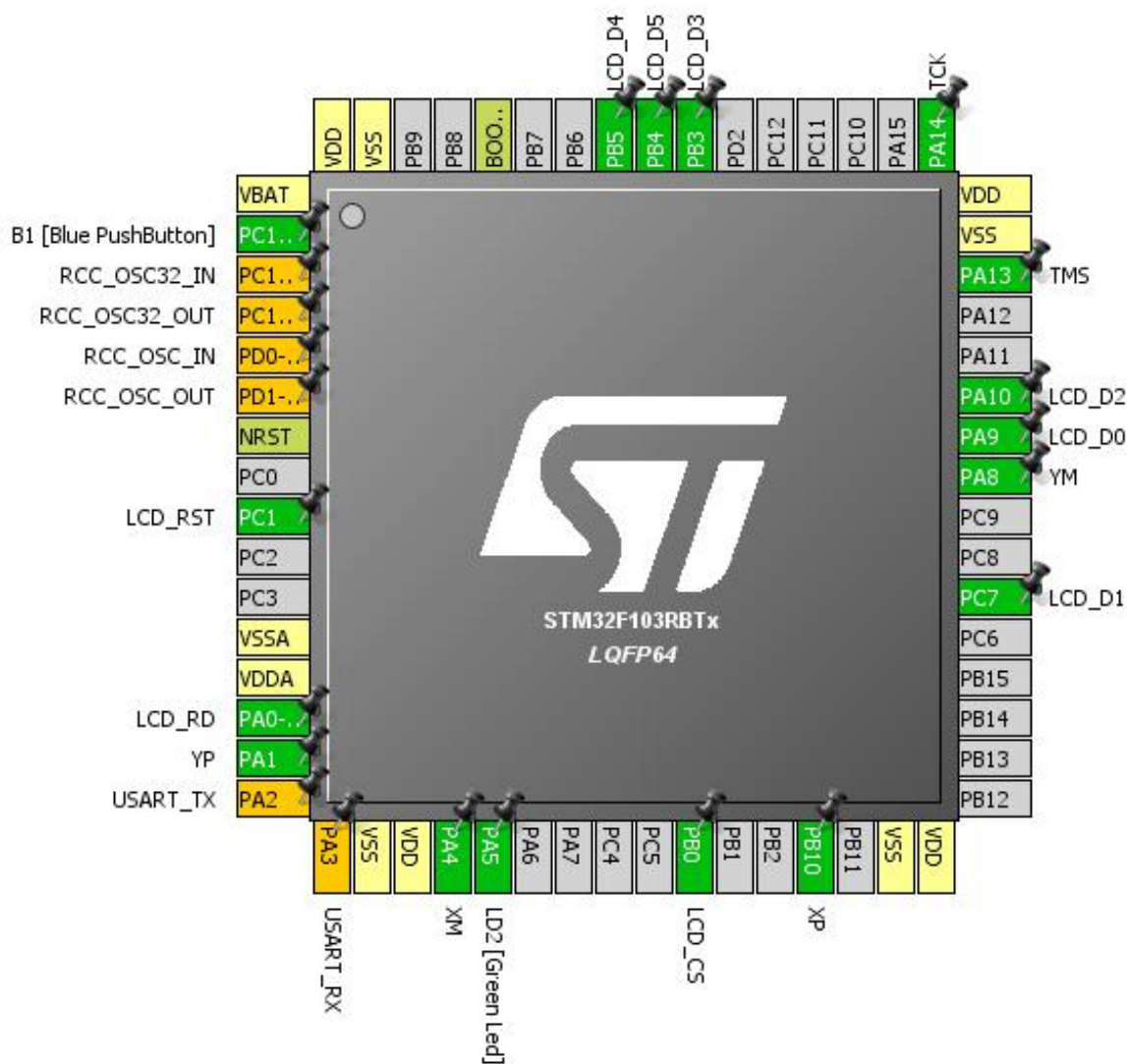
1.2. MCU

| | |
|----------------|---------------|
| MCU Series | STM32F1 |
| MCU Line | STM32F103 |
| MCU name | STM32F103RBTx |
| MCU Package | LQFP64 |
| MCU Pin number | 64 |

1.3. Caution

The report was generated although the configuration was in a modified state. It may be not accurate

2. Pinout Configuration



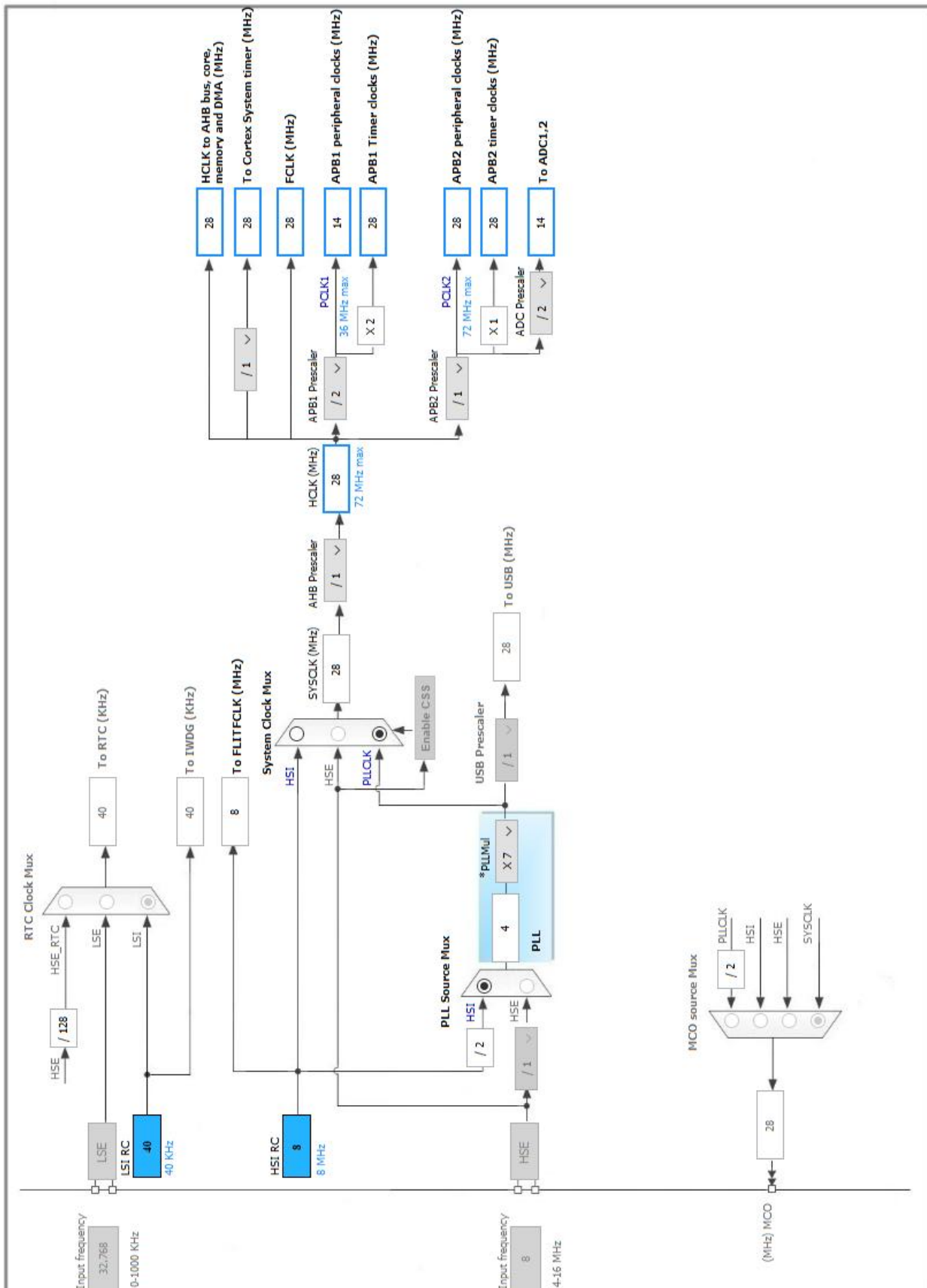
3. Pins Configuration

| Pin Number LQFP64 | Pin Name (function after reset) | Pin Type | Alternate Function(s) | Label |
|----------------------|---------------------------------------|----------|--------------------------|----------------------|
| 1 | VBAT | Power | | |
| 2 | PC13-TAMPER-RTC | I/O | GPIO_EXTI13 | B1 [Blue PushButton] |
| 3 | PC14-OSC32_IN * | I/O | RCC_OSC32_IN | |
| 4 | PC15-OSC32_OUT * | I/O | RCC_OSC32_OUT | |
| 5 | PD0-OSC_IN * | I/O | RCC_OSC_IN | |
| 6 | PD1-OSC_OUT * | I/O | RCC_OSC_OUT | |
| 7 | NRST | Reset | | |
| 9 | PC1 ** | I/O | GPIO_Output | LCD_RST |
| 12 | VSSA | Power | | |
| 13 | VDDA | Power | | |
| 14 | PA0-WKUP ** | I/O | GPIO_Output | LCD_RD |
| 15 | PA1 | I/O | ADC1_IN1 | YP |
| 16 | PA2 * | I/O | USART2_TX | USART_TX |
| 17 | PA3 * | I/O | USART2_RX | USART_RX |
| 18 | VSS | Power | | |
| 19 | VDD | Power | | |
| 20 | PA4 | I/O | ADC2_IN4 | XM |
| 21 | PA5 ** | I/O | GPIO_Output | LD2 [Green Led] |
| 26 | PB0 ** | I/O | GPIO_Output | LCD_CS |
| 29 | PB10 ** | I/O | GPIO_Output | XP |
| 31 | VSS | Power | | |
| 32 | VDD | Power | | |
| 38 | PC7 ** | I/O | GPIO_Output | LCD_D1 |
| 41 | PA8 ** | I/O | GPIO_Input | YM |
| 42 | PA9 ** | I/O | GPIO_Output | LCD_D0 |
| 43 | PA10 ** | I/O | GPIO_Output | LCD_D2 |
| 46 | PA13 | I/O | SYS_JTMS-SWDIO | TMS |
| 47 | VSS | Power | | |
| 48 | VDD | Power | | |
| 49 | PA14 | I/O | SYS_JTCK-SWCLK | TCK |
| 55 | PB3 ** | I/O | GPIO_Output | LCD_D3 |
| 56 | PB4 ** | I/O | GPIO_Output | LCD_D5 |
| 57 | PB5 ** | I/O | GPIO_Output | LCD_D4 |
| 60 | BOOT0 | Boot | | |
| 63 | VSS | Power | | |
| 64 | VDD | Power | | |

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

* The pin is affected with a peripheral function but no peripheral mode is activated

4. Clock Tree Configuration



5. IPs and Middleware Configuration

5.1. ADC1

mode: IN1

5.1.1. Parameter Settings:

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

Number Of Conversion 1

External Trigger Conversion Source Regular Conversion launched by software

Rank 1

Channel Channel 1

Sampling Time 1.5 Cycles

ADC_Injected_ConversionMode:

Number Of Conversions 0

WatchDog:

Enable Analog WatchDog Mode false

5.2. ADC2

mode: IN4

5.2.1. Parameter Settings:

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 |
| Number Of Conversion | 1 |
| External Trigger Conversion Source | Regular Conversion launched by software |
| <u>Rank</u> | 1 |
| Channel | Channel 4 |
| Sampling Time | 1.5 Cycles |
| ADC_Injected_ConversionMode: | |
| Number Of Conversions | 0 |
| WatchDog: | |
| Enable Analog WatchDog Mode | false |

5.3. SYS

Debug: Serial Wire

Timebase Source: SysTick

* User modified value

6. System Configuration

6.1. GPIO configuration

| IP | Pin | Signal | GPIO mode | GPIO pull/up pull down | Max Speed | User Label |
|-----------------------|-----------------|----------------|--|-----------------------------|-----------|----------------------|
| ADC1 | PA1 | ADC1_IN1 | Analog mode | n/a | n/a | YP |
| ADC2 | PA4 | ADC2_IN4 | Analog mode | n/a | n/a | XM |
| SYS | PA13 | SYS_JTMS-SWDIO | n/a | n/a | n/a | TMS |
| | PA14 | SYS_JTCK-SWCLK | n/a | n/a | n/a | TCK |
| Single Mapped Signals | PC14-OSC32_IN | RCC_OSC32_IN | n/a | n/a | n/a | |
| | PC15-OSC32_OUT | RCC_OSC32_OUT | n/a | n/a | n/a | |
| | PD0-OSC_IN | RCC_OSC_IN | n/a | n/a | n/a | |
| | PD1-OSC_OUT | RCC_OSC_OUT | n/a | n/a | n/a | |
| | PA2 | USART2_TX | Alternate Function Push Pull | n/a | Low | USART_TX |
| | PA3 | USART2_RX | * | No pull-up and no pull-down | n/a | USART_RX |
| GPIO | PC13-TAMPER-RTC | GPIO_EXTI13 | External Interrupt Mode with Falling edge trigger detection | No pull-up and no pull-down | n/a | B1 [Blue PushButton] |
| | PC1 | GPIO_Output | Output Push Pull | n/a | Low | LCD_RST |
| | PA0-WKUP | GPIO_Output | Output Push Pull | n/a | Low | LCD_RD |
| | PA5 | GPIO_Output | Output Push Pull | n/a | Low | LD2 [Green Led] |
| | PB0 | GPIO_Output | Output Push Pull | n/a | Low | LCD_CS |
| | PB10 | GPIO_Output | Output Push Pull | n/a | Low | XP |
| | PC7 | GPIO_Output | Output Push Pull | n/a | Low | LCD_D1 |
| | PA8 | GPIO_Input | Input mode | No pull-up and no pull-down | n/a | YM |
| | PA9 | GPIO_Output | Output Push Pull | n/a | Low | LCD_D0 |
| | PA10 | GPIO_Output | Output Push Pull | n/a | Low | LCD_D2 |
| | PB3 | GPIO_Output | Output Push Pull | n/a | Low | LCD_D3 |
| | PB4 | GPIO_Output | Output Push Pull | n/a | Low | LCD_D5 |
| | PB5 | GPIO_Output | Output Push Pull | n/a | Low | LCD_D4 |

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 |
| ADC1 and ADC2 global interrupts | true | 0 | 0 |
| EXTI line[15:10] interrupts | true | 0 | 0 |
| PVD interrupt through EXTI line 16 | unused | | |
| Flash global interrupt | unused | | |
| RCC global interrupt | unused | | |

* User modified value

7. Power Consumption Calculator report

7.1. Microcontroller Selection

| | |
|-----------|---------------|
| Series | STM32F1 |
| Line | STM32F103 |
| MCU | STM32F103RBTx |
| Datasheet | 13587_Rev17 |

7.2. Parameter Selection

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

8. Software Project

8.1. Project Settings

| Name | Value |
|-----------------------------------|------------------------|
| Project Name | ugui |
| Project Folder | C:\ugui\ugui |
| Toolchain / IDE | SW4STM32 |
| Firmware Package Name and Version | STM32Cube FW_F1 V1.4.0 |

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 |