

1. Description

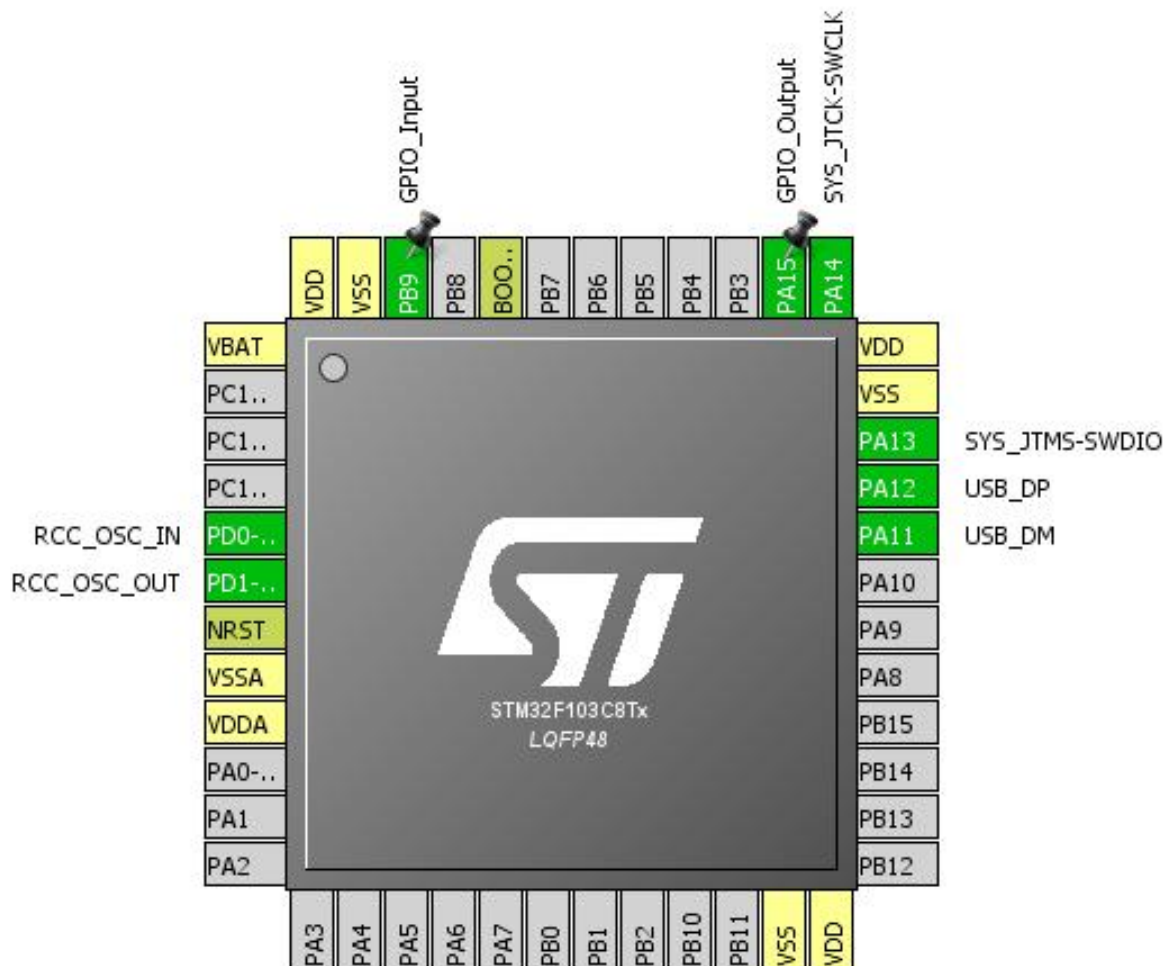
1.1. Project

| | |
|-----------------|--------------------|
| Project Name | F1 DFU |
| Board Name | custom |
| Generated with: | STM32CubeMX 4.26.0 |
| Date | 11/20/2018 |

1.2. MCU

| | |
|----------------|---------------|
| MCU Series | STM32F1 |
| MCU Line | STM32F103 |
| MCU name | STM32F103C8Tx |
| MCU Package | LQFP48 |
| MCU Pin number | 48 |

2. Pinout Configuration

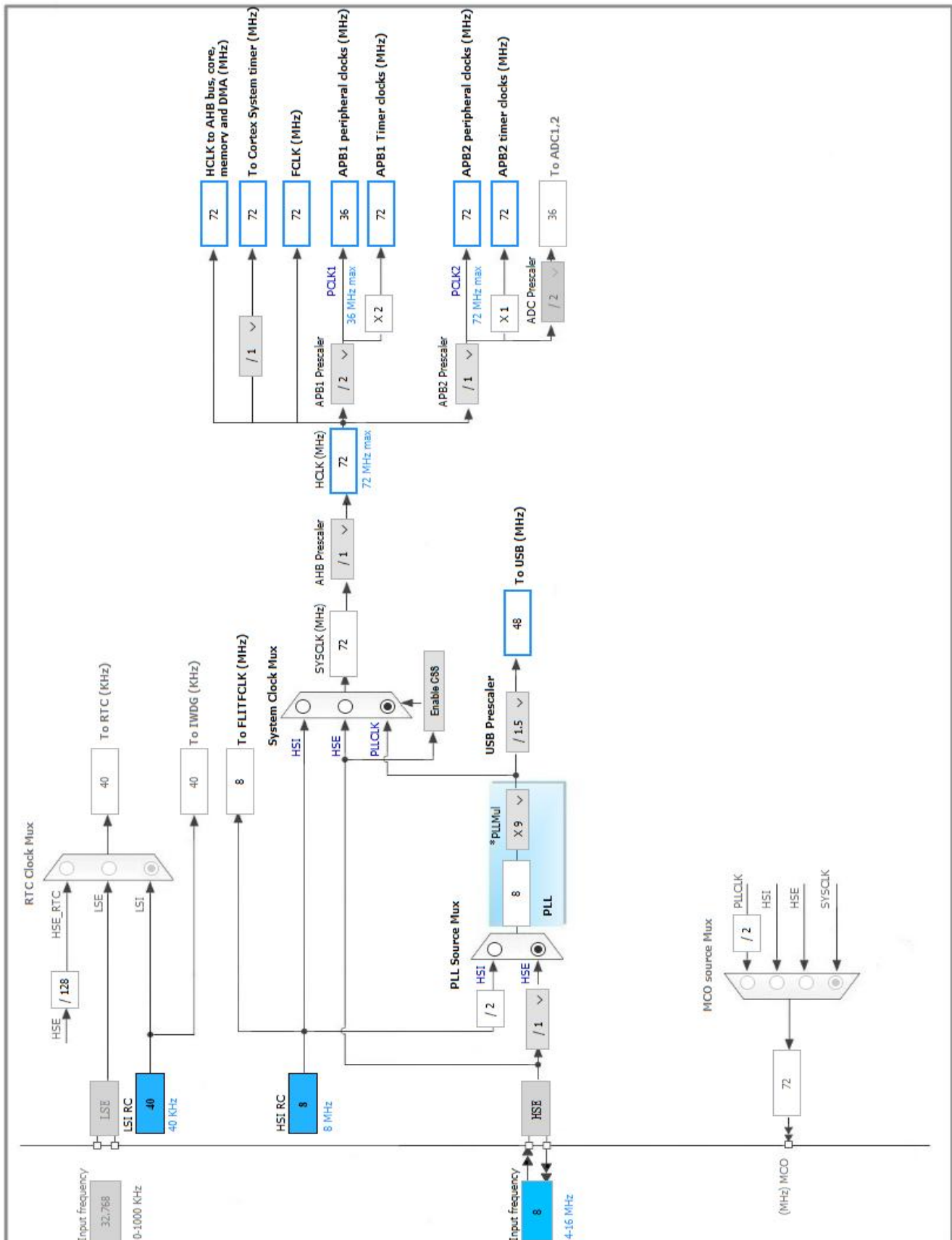


3. Pins Configuration

| Pin Number LQFP48 | Pin Name (function after reset) | Pin Type | Alternate Function(s) | Label |
|----------------------|---------------------------------------|----------|--------------------------|-------|
| 1 | VBAT | Power | | |
| 5 | PD0-OSC_IN | I/O | RCC_OSC_IN | |
| 6 | PD1-OSC_OUT | I/O | RCC_OSC_OUT | |
| 7 | NRST | Reset | | |
| 8 | VSSA | Power | | |
| 9 | VDDA | Power | | |
| 23 | VSS | Power | | |
| 24 | VDD | Power | | |
| 32 | PA11 | I/O | USB_DM | |
| 33 | PA12 | I/O | USB_DP | |
| 34 | PA13 | I/O | SYS_JTMS-SWDIO | |
| 35 | VSS | Power | | |
| 36 | VDD | Power | | |
| 37 | PA14 | I/O | SYS_JTCK-SWCLK | |
| 38 | PA15 * | I/O | GPIO_Output | LED1 |
| 44 | BOOT0 | Boot | | |
| 46 | PB9 * | I/O | GPIO_Input | Key0 |
| 47 | VSS | Power | | |
| 48 | 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 Timeout Value (ms) | 100 |
| LSE Startup Timeout Value (ms) | 5000 |

5.2. SYS

Debug: Serial Wire

Timebase Source: SysTick

5.3. USB

mode: Device (FS)

5.3.1. Parameter Settings:

Basic Parameters:

| | |
|----------------------------|---------------------|
| Speed | Full Speed 12MBit/s |
| Endpoint 0 Max Packet size | 8 Bytes |

Power Parameters:

| | |
|-----------------------|----------|
| Low Power | Disabled |
| Link Power Management | Disabled |
| Battery Charging | Disabled |

5.4. USB_DEVICE

Class For FS IP: Download Firmware Update Class (DFU)

5.4.1. Parameter Settings:

Basic Parameters:

| | |
|--|---------------------|
| USBD_MAX_NUM_INTERFACES (Maximum number of supported interfaces) | 1 |
| USBD_MAX_NUM_CONFIGURATION (Maximum number of supported configuration) | 1 |
| USBD_MAX_STR_DESC_SIZ (Maximum size for the string descriptors) | 512 |
| USBD_SUPPORT_USER_STRING (Enable user string descriptor) | Enabled |
| USBD_SELF_POWERED (Enabled self power) | Enabled |
| USBD_DEBUG_LEVEL (USBD Debug Level) | 0: No debug message |

Class Parameters:

| | |
|--|--|
| USBD_DFU_MAX_ITF_NUM (DFU maximum interface numbers) | 1 |
| USBD_DFU_XFER_SIZE | 1024 |
| USBD_DFU_APP_DEFAULT_ADD (Base Address 0x) | 0x08001000 * |
| USBD_DFU_MEDIA Interface | @Internal Flash /0x08000000/10*01Ka,54*01Kg * |

5.4.2. Device Descriptor:

Device Descriptor:

| | |
|---|------------------------|
| VID (Vendor Identifier) | 1155 |
| LANGID_STRING (Language Identifier) | English(United States) |
| MANUFACTURER_STRING (Manufacturer Identifier) | STMicroelectronics |

Device Descriptor FS:

| | |
|---|--------------------------------|
| PID (Product Identifier) | 57105 |
| PRODUCT_STRING (Product Identifier) | STM32 DownLoad Firmware Update |
| SERIALNUMBER_STRING (Serial number) | 00000000001A |
| CONFIGURATION_STRING (Configuration Identifier) | DFU Config |
| INTERFACE_STRING (Interface Identifier) | DFU Interface |

* 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 | PD0-OSC_IN | RCC_OSC_IN | n/a | n/a | n/a | |
| | PD1-OSC_OUT | RCC_OSC_OUT | n/a | n/a | n/a | |
| SYS | PA13 | SYS_JTMS-SWDIO | n/a | n/a | n/a | |
| | PA14 | SYS_JTCK-SWCLK | n/a | n/a | n/a | |
| USB | PA11 | USB_DM | n/a | n/a | n/a | |
| | PA12 | USB_DP | n/a | n/a | n/a | |
| GPIO | PA15 | GPIO_Output | Output Push Pull | Pull-up * | High * | LED1 |
| | PB9 | GPIO_Input | Input mode | Pull-down * | n/a | Key0 |

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 |
| USB low priority or CAN RX0 interrupts | true | 0 | 0 |
| PVD interrupt through EXTI line 16 | unused | | |
| Flash global interrupt | unused | | |
| RCC global interrupt | unused | | |
| USB high priority or CAN TX interrupts | unused | | |

* User modified value

7. Power Consumption Calculator report

7.1. Microcontroller Selection

| | |
|-----------|---------------|
| Series | STM32F1 |
| Line | STM32F103 |
| MCU | STM32F103C8Tx |
| Datasheet | 13587_Rev17 |

7.2. Parameter Selection

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

8. Software Project

8.1. Project Settings

| Name | Value |
|-----------------------------------|-------------------------------|
| Project Name | F1 DFU |
| Project Folder | D:\Users\20607\Desktop\F1 DFU |
| 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