

1. Description

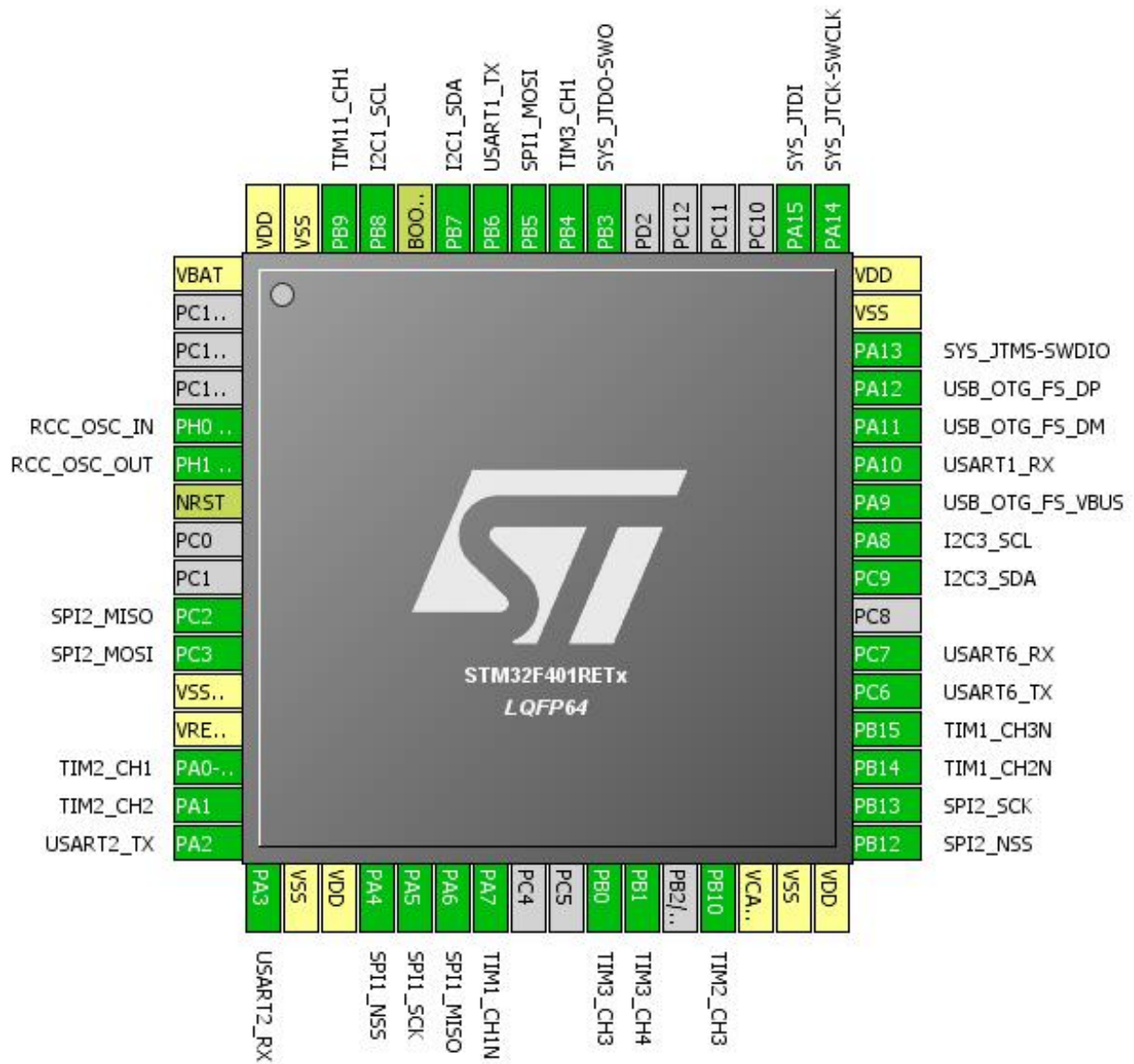
1.1. Project

| | |
|-----------------|-------------------|
| Project Name | stm32F4 |
| Generated with: | STM32CubeMX 4.1.0 |
| Date | 04/21/2014 |

1.2. MCU

| | |
|----------------|---------------|
| MCU Serie | STM32F4 |
| MCU Line | STM32F401 |
| MCU name | STM32F401RETx |
| MCU Package | LQFP64 |
| MCU Pin number | 64 |

2. Pinout Configuration



3. IPs and Middlewares Configuration

| IP | Mode | Fonction | Pin |
|------|--|----------------|---------------|
| CRC | Activated | N/A | N/A |
| I2C1 | I2C: I2C | I2C1_SCL | PB8 |
| | | I2C1_SDA | PB7 |
| I2C3 | I2C: I2C | I2C3_SCL | PA8 |
| | | I2C3_SDA | PC9 |
| IWDG | Activated | N/A | N/A |
| RCC | High Speed Clock (HSE): Crystal/Ceramic Resonator | RCC_OSC_IN | PH0 - OSC_IN |
| | | RCC_OSC_OUT | PH1 - OSC_OUT |
| SPI1 | Mode: Full-Duplex Master | SPI1_MISO | PA6 |
| | | SPI1_MOSI | PB5 |
| | | SPI1_SCK | PA5 |
| | Hardware NSS Signal | SPI1_NSS | PA4 |
| SPI2 | Mode: Full-Duplex Master | SPI2_MISO | PC2 |
| | | SPI2_MOSI | PC3 |
| | | SPI2_SCK | PB13 |
| | Hardware NSS Signal | SPI2_NSS | PB12 |
| SYS | Debug: JTAG (4 pins) | SYS_JTCK-SWCLK | PA14 |
| | | SYS_JTDI | PA15 |
| | | SYS_JTDO-SWO | PB3 |
| | | SYS_JTMS-SWDIO | PA13 |
| TIM1 | Trigger Source: ITR0 | N/A | N/A |
| | Channel1: Output Compare CH1N | TIM1_CH1N | PA7 |
| | Channel2: Output Compare CH2N | TIM1_CH2N | PB14 |
| | Channel3: Output Compare CH3N | TIM1_CH3N | PB15 |
| TIM2 | Trigger Source: ITR0 | N/A | N/A |
| | Channel1: PWM Generation CH1 | TIM2_CH1 | PA0-WKUP |
| | Channel2: PWM Generation CH2 | TIM2_CH2 | PA1 |
| | Channel3: PWM Generation CH3 | TIM2_CH3 | PB10 |
| TIM3 | Channel1: PWM Generation CH1 | TIM3_CH1 | PB4 |
| | Channel3: PWM Generation CH3 | TIM3_CH3 | PB0 |
| | Channel4: | TIM3_CH4 | PB1 |

stm32F4 Project

| IP | Mode | Fonction | Pin |
|------------|---------------------------------|-----------------|------|
| | PWM Generation CH4 | | |
| TIM11 | Activated | N/A | N/A |
| | Channel1: Output Compare CH1 | TIM11_CH1 | PB9 |
| USART1 | Mode: Asynchronous | USART1_RX | PA10 |
| | | USART1_TX | PB6 |
| USART2 | Mode: Asynchronous | USART2_RX | PA3 |
| | | USART2_TX | PA2 |
| USART6 | Mode: Asynchronous | USART6_RX | PC7 |
| | | USART6_TX | PC6 |
| USB_OTG_FS | Mode: Device_Only | USB_OTG_FS_DM | PA11 |
| | | USB_OTG_FS_DP | PA12 |
| | Activate_VBUS | USB_OTG_FS_VBUS | PA9 |
| WWDG | Activated | N/A | N/A |

| MiddleWare | Mode |
|------------|----------------------------|
| USB_DEVICE | Class For FS IP: CDC_FS |

4. Pins Configuration

| Pins | Pos | Functions |
|---------------|-----|-----------------|
| PH0 - OSC_IN | 5 | RCC_OSC_IN |
| PH1 - OSC_OUT | 6 | RCC_OSC_OUT |
| PC2 | 10 | SPI2_MISO |
| PC3 | 11 | SPI2_MOSI |
| PA0-WKUP | 14 | TIM2_CH1 |
| PA1 | 15 | TIM2_CH2 |
| PA2 | 16 | USART2_TX |
| PA3 | 17 | USART2_RX |
| PA4 | 20 | SPI1_NSS |
| PA5 | 21 | SPI1_SCK |
| PA6 | 22 | SPI1_MISO |
| PA7 | 23 | TIM1_CH1N |
| PB0 | 26 | TIM3_CH3 |
| PB1 | 27 | TIM3_CH4 |
| PB10 | 29 | TIM2_CH3 |
| PB12 | 33 | SPI2_NSS |
| PB13 | 34 | SPI2_SCK |
| PB14 | 35 | TIM1_CH2N |
| PB15 | 36 | TIM1_CH3N |
| PC6 | 37 | USART6_TX |
| PC7 | 38 | USART6_RX |
| PC9 | 40 | I2C3_SDA |
| PA8 | 41 | I2C3_SCL |
| PA9 | 42 | USB_OTG_FS_VBUS |
| PA10 | 43 | USART1_RX |
| PA11 | 44 | USB_OTG_FS_DM |
| PA12 | 45 | USB_OTG_FS_DP |
| PA13 | 46 | SYS_JTMS-SWDIO |
| PA14 | 49 | SYS_JTCK-SWCLK |
| PA15 | 50 | SYS_JTDI |
| PB3 | 55 | SYS_JTDO-SWO |
| PB4 | 56 | TIM3_CH1 |
| PB5 | 57 | SPI1_MOSI |
| PB6 | 58 | USART1_TX |
| PB7 | 59 | I2C1_SDA |
| PB8 | 61 | I2C1_SCL |
| PB9 | 62 | TIM11_CH1 |

5. Power Plugin report

5.1. Microcontroller Selection

| | |
|-----------|---------------|
| Serie | STM32F4 |
| Line | STM32F401 |
| MCU | STM32F401RETx |
| Datasheet | 025644_Rev1 |

5.2. Parameter Selection

| | |
|-------------|-----|
| Temperature | 25 |
| Vdd | 1.8 |

5.3. Battery Selection

| | |
|-------------------|-------------------|
| Battery | Li-SOCL2(DD36000) |
| Capacity | 36000.0 mAh |
| Self discharge | 0.08 %/month |
| Nominal voltage | 3.6 V |
| Max Cont Current | 450.0 mA |
| Max Pulse Current | 1000.0 mA |

5.4. Sequence

| | |
|--------------------|--------------------------|
| Step | STEP1 |
| Mode | RUN |
| Range | Scale2-Medium |
| Fetch type | FLASH/ART ON NO PREFETCH |
| Clock Config. | HSE PLL ON |
| Clock Source Freq. | 4.0 MHz |
| CPU Freq. | 84.0 MHz |
| | |

| | |
|------------------|--|
| Periph. | CRC GPIOA GPIOB GPIOC GPIOH I2C1 I2C3 SPI1 SPI2 SYS TIM1 TIM2 TIM3 TIM11 USART1 USART2 USART6 USB OTG FS WWDG |
| Additional Cons. | 0 mA |
| Average Current | 17.54076 mA |
| Duration | 1 ms |
| DMIPS | 105.0 |

5.5. Results

| | | | |
|---------------|---------------------------------|-----------------|-------------|
| Sequence time | 1.0 ms | Average current | 17.541 mA |
| Battery Life | 2 months , 25 days & 7 hours | Average DMIPS | 105.0 DMIPS |

5.6. Chart

