# 1. Description

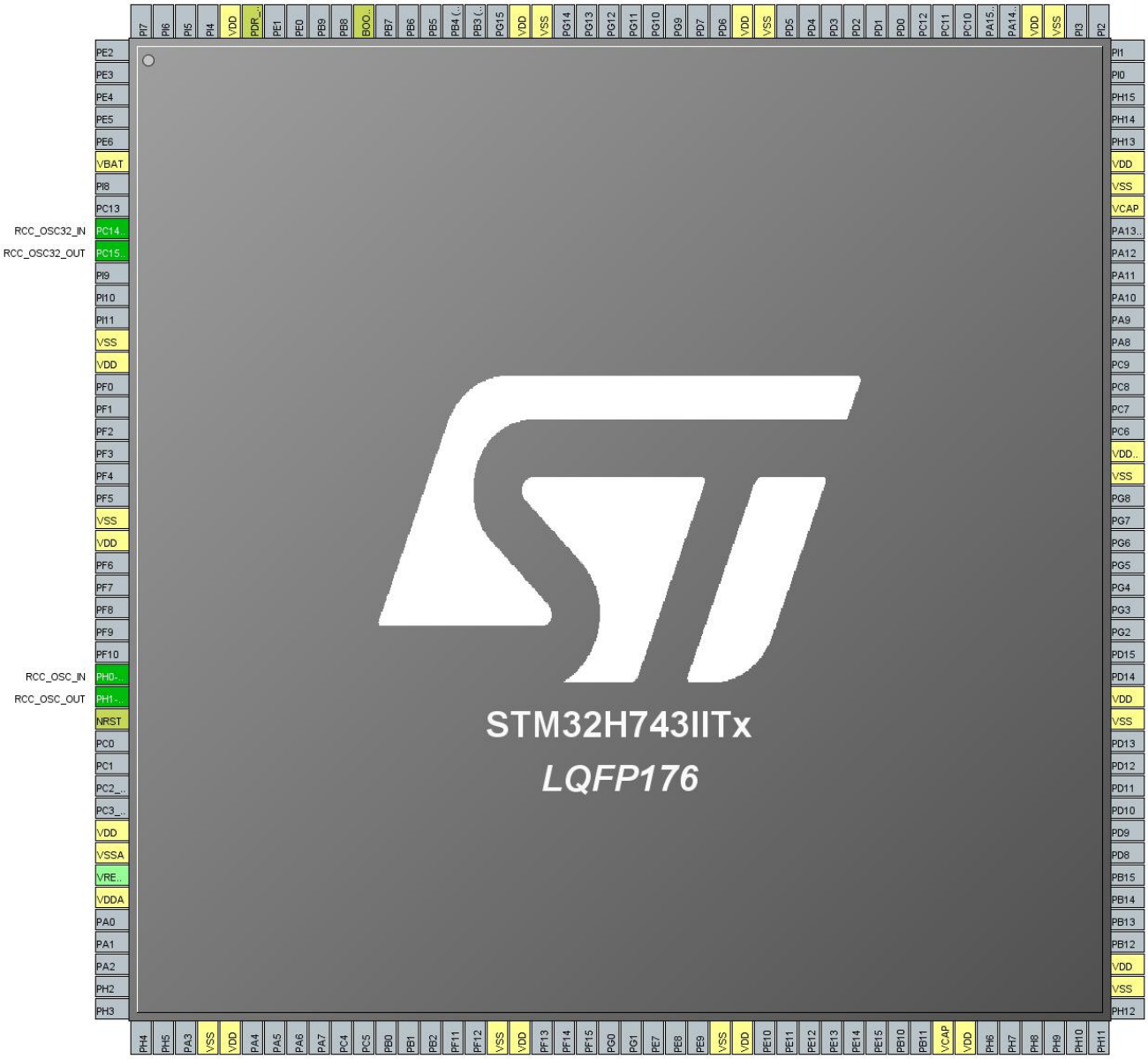
## 1.1. Project

| | |
|---|---|
| Project Name | RTC |
| Board Name | custom |
| Generated with: | STM32CubeMX 5.0.0 |
| Date | 11/25/2018 |

## 1.2. MCU

| | |
|---|---|
| MCU Series | STM32H7 |
| MCU Line | STM32H743/753 |
| MCU name | STM32H743IITx |
| MCU Package | LQFP176 |
| MCU Pin number | 176 |

## 2. Pinout Configuration

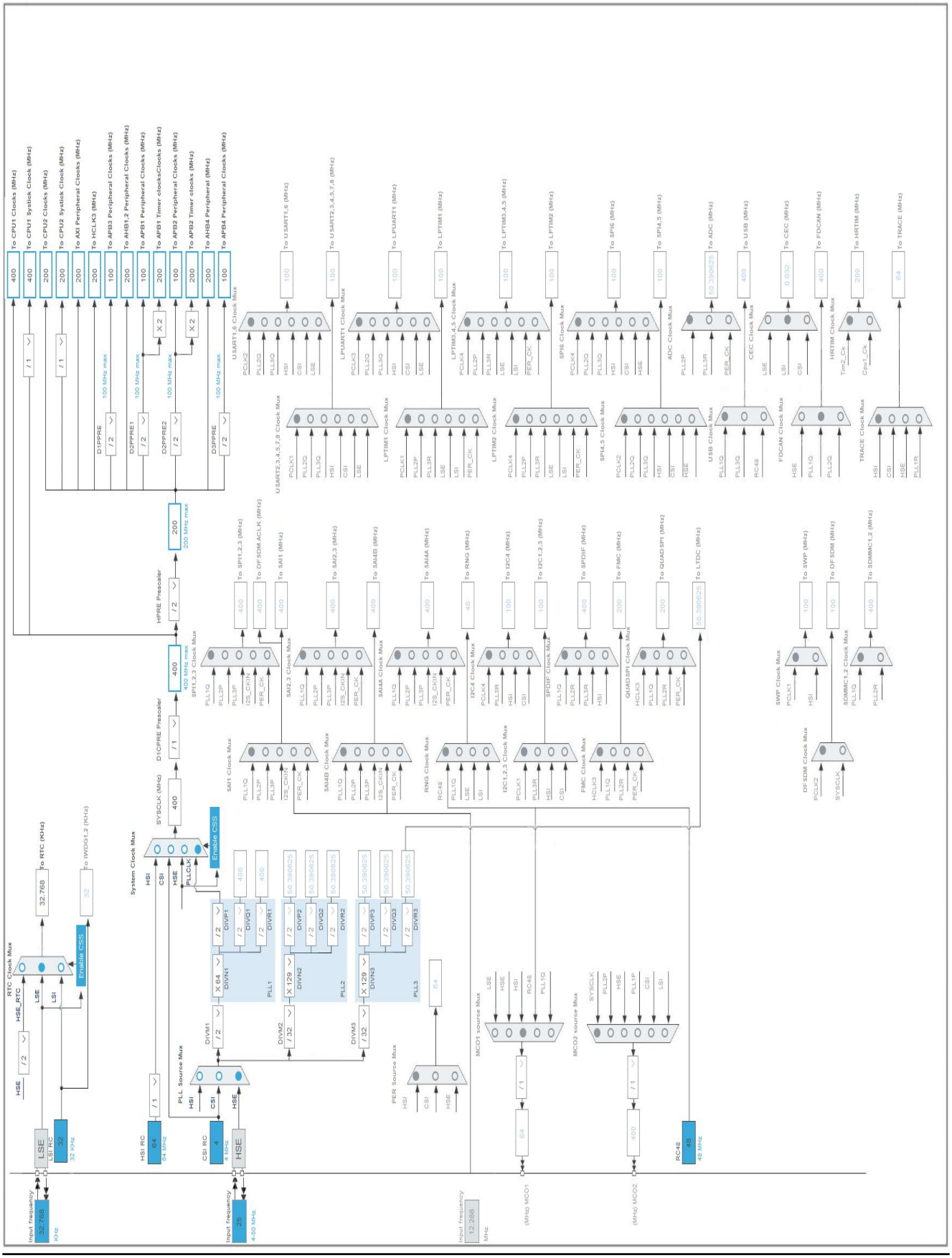


# 3. Pins Configuration

| Pin Number LQFP176 | Pin Name (function after reset) | Pin Type | Alternate Function(s) | Label |
|---|---|---|---|---|
| 6 | VBAT | Power | | |
| 9 | PC14-OSC32_IN (OSC32_IN) | I/O | RCC_OSC32_IN | |
| 10 | PC15-OSC32_OUT (OSC32_OUT) | I/O | RCC_OSC32_OUT | |
| 14 | VSS | Power | | |
| 15 | VDD | Power | | |
| 22 | VSS | Power | | |
| 23 | VDD | Power | | |
| 29 | PH0-OSC_IN (PH0) | I/O | RCC_OSC_IN | |
| 30 | PH1-OSC_OUT (PH1) | I/O | RCC_OSC_OUT | |
| 31 | NRST | Reset | | |
| 36 | VDD | Power | | |
| 37 | VSSA | Power | | |
| 39 | VDDA | Power | | |
| 48 | VSS | Power | | |
| 49 | VDD | Power | | |
| 61 | VSS | Power | | |
| 62 | VDD | Power | | |
| 71 | VSS | Power | | |
| 72 | VDD | Power | | |
| 81 | VCAP | Power | | |
| 82 | VDD | Power | | |
| 90 | VSS | Power | | |
| 91 | VDD | Power | | |
| 102 | VSS | Power | | |
| 103 | VDD | Power | | |
| 113 | VSS | Power | | |
| 114 | VDD33_USB | Power | | |
| 125 | VCAP | Power | | |
| 126 | VSS | Power | | |
| 127 | VDD | Power | | |
| 135 | VSS | Power | | |
| 136 | VDD | Power | | |
| 148 | VSS | Power | | |
| 149 | VDD | Power | | |

| Pin Number LQFP176 | Pin Name (function after reset) | Pin Type | Alternate Function(s) | Label |
|---|---|---|---|---|
| 158 | VSS | Power | | |
| 159 | VDD | Power | | |
| 166 | BOOT0 | Boot | | |
| 171 | PDR_ON | Reset | | |
| 172 | VDD | Power | | |

# 4. Clock Tree Configuration



# 5. Software Project

## 5.1. Project Settings

| Name | Value |
|---|---|
| Project Name | RTC |
| Project Folder | C:\Users\Administrator\Desktop\github_code\Planof2019_half\Course_Project\ST |
| Toolchain / IDE | MDK-ARM V5 |
| Firmware Package Name and Version | STM32Cube FW_H7 V1.3.0 |

## 5.2. Code Generation Settings

| Name | Value |
|---|---|
| STM32Cube Firmware Library Package | Copy all used libraries into the project folder |
| 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 |

# 6. Power Consumption Calculator report

6.1. Microcontroller Selection

| | |
|---|---|
| Series | STM32H7 |
| Line | STM32H743/753 |
| MCU | STM32H743IITx |
| Datasheet | 030538_Rev1 |

6.2. Parameter Selection

| | |
|---|---|
| Temperature | 25 |
| Vdd | 3.0 |

# 7. IPs and Middleware Configuration

## 7.1. RCC

**High Speed Clock (HSE): Crystal/Ceramic Resonator**

**Low Speed Clock (LSE) : Crystal/Ceramic Resonator**

### 7.1.1. Parameter Settings:

**RCC Parameters:**

| | |
|---|---|
| TIM Prescaler Selection | Disabled |
| HSE Startup Timout Value (ms) | 100 |
| LSE Startup Timout Value (ms) | 5000 |
| LSE Drive Capability | LSE oscillator low drive capability |
| CSI Calibration Value | 16 |
| HSI Calibration Value | 16 |

**System Parameters:**

| | |
|---|---|
| VDD voltage (V) | 3.3 |
| Flash Latency(WS) | 2 WS (3 CPU cycle) |

**Power Parameters:**

| | |
|---|---|
| Power Regulatror Voltage Scale | Power Regulator Voltage Scale 1 |

**PLL range Parameters:**

| | |
|---|---|
| PLL1 clock Input range | Between 8 and 16 MHz |
| PLL1 clock Output range | Wide VCO range |
| PLL Fractional Part | 0 |

## 7.2. RTC

**mode: Activate Clock Source**

**mode: Activate Calendar**

### 7.2.1. Parameter Settings:

**General:**

| | |
|---|---|
| Hour Format | Hourformat 24 |
| Asynchronous Predivider value | 127 |
| Synchronous Predivider value | 255 |

**Calendar Time:**

| | |
|---|---|
| Data Format | BCD data format |
| Hours | 0 |
| Minutes | 0 |
| Seconds | 0 |

| | |
|---|---|
| Day Light Saving: value of hour adjustment | Daylightsaving None |
| Store Operation | Storeoperation Reset |

**Calendar Date:**

| | |
|---|---|
| Week Day | Monday |
| Month | January |
| Date | 1 |
| Year | 0 |

## *7.3. SYS*

### Timebase Source: SysTick

*** User modified value**

# 8. System Configuration

## 8.1. GPIO configuration

| IP | Pin | Signal | GPIO mode | GPIO pull/up pull down | Max Speed | User Label |
|---|---|---|---|---|---|---|
| RCC | PC14-OSC32_IN (OSC32_IN) | RCC_OSC32_IN | n/a | n/a | n/a | |
| | PC15-OSC32_OUT | RCC_OSC32_OUT | n/a | n/a | n/a | |
| | PH0-OSC_IN (PH0) | RCC_OSC_IN | n/a | n/a | n/a | |
| | PH1-OSC_OUT (PH1) | RCC_OSC_OUT | n/a | n/a | n/a | |

## 8.2. DMA configuration

nothing configured in DMA service

## 8.3. BDMA configuration

nothing configured in DMA service

## 8.4. MDMA configuration

nothing configured in DMA service

## 8.5. 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 |
| Pre-fetch 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 |
| PVD and AVD interrupts through EXTI line 16 | unused | | |
| Flash global interrupt | unused | | |
| RCC global interrupt | unused | | |
| FPU global interrupt | unused | | |
| HSEM1 global interrupt | unused | | |

*** User modified value**

# 9. Software Pack Report