# 1. Description

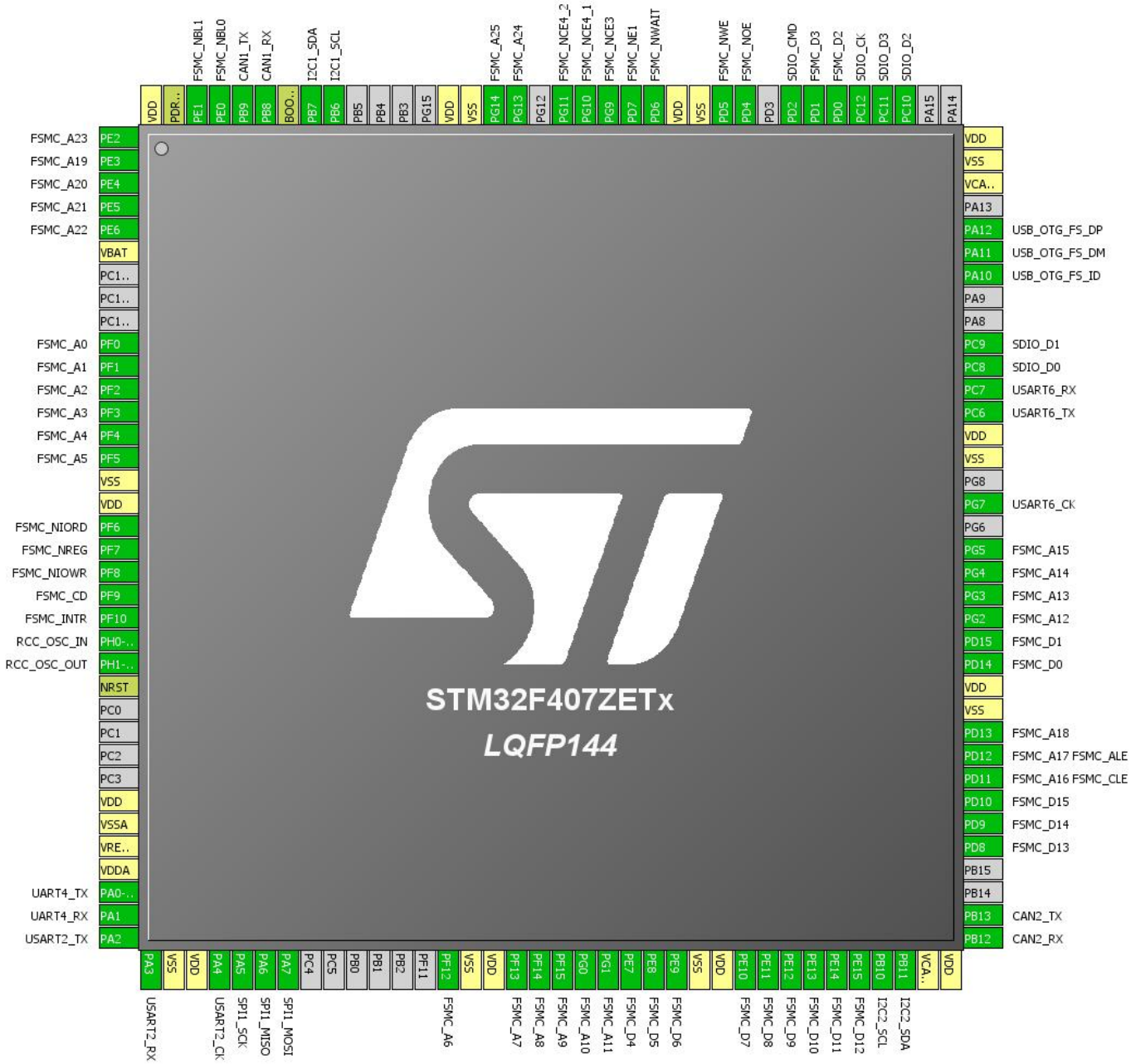
## 1.1. Project

| | |
|---|---|
| Project Name | STCubeGenerated |
| Board Name | No information |
| Generated with: | STM32CubeMX 4.9.0 |
| Date | 11/20/2015 |

## 1.2. MCU

| | |
|---|---|
| MCU Series | STM32F4 |
| MCU Line | STM32F407/417 |
| MCU name | STM32F407ZETx |
| MCU Package | LQFP144 |
| MCU Pin number | 144 |

# 2. Pinout Configuration



# 3. Pins Configuration

| Pin Number LQFP144 | Pin Name (function after reset) | Pin Type | Alternate Function(s) | Label |
|---|---|---|---|---|
| 1 | PE2 | I/O | FSMC_A23 | |
| 2 | PE3 | I/O | FSMC_A19 | |
| 3 | PE4 | I/O | FSMC_A20 | |
| 4 | PE5 | I/O | FSMC_A21 | |
| 5 | PE6 | I/O | FSMC_A22 | |
| 6 | VBAT | Power | | |
| 10 | PF0 | I/O | FSMC_A0 | |
| 11 | PF1 | I/O | FSMC_A1 | |
| 12 | PF2 | I/O | FSMC_A2 | |
| 13 | PF3 | I/O | FSMC_A3 | |
| 14 | PF4 | I/O | FSMC_A4 | |
| 15 | PF5 | I/O | FSMC_A5 | |
| 16 | VSS | Power | | |
| 17 | VDD | Power | | |
| 18 | PF6 | I/O | FSMC_NIORD | |
| 19 | PF7 | I/O | FSMC_NREG | |
| 20 | PF8 | I/O | FSMC_NIOWR | |
| 21 | PF9 | I/O | FSMC_CD | |
| 22 | PF10 | I/O | FSMC_INTR | |
| 23 | PH0-OSC_IN | I/O | RCC_OSC_IN | |
| 24 | PH1-OSC_OUT | I/O | RCC_OSC_OUT | |
| 25 | NRST | Reset | | |
| 30 | VDD | Power | | |
| 31 | VSSA | Power | | |
| 32 | VREF+ | Power | | |
| 33 | VDDA | Power | | |
| 34 | PA0-WKUP | I/O | UART4_TX | |
| 35 | PA1 | I/O | UART4_RX | |
| 36 | PA2 | I/O | USART2_TX | |
| 37 | PA3 | I/O | USART2_RX | |
| 38 | VSS | Power | | |
| 39 | VDD | Power | | |
| 40 | PA4 | I/O | USART2_CK | |
| 41 | PA5 | I/O | SPI1_SCK | |
| 42 | PA6 | I/O | SPI1_MISO | |
| 43 | PA7 | I/O | SPI1_MOSI | |

| Pin Number LQFP144 | Pin Name (function after reset) | Pin Type | Alternate Function(s) | Label |
|---|---|---|---|---|
| 50 | PF12 | I/O | FSMC_A6 | |
| 51 | VSS | Power | | |
| 52 | VDD | Power | | |
| 53 | PF13 | I/O | FSMC_A7 | |
| 54 | PF14 | I/O | FSMC_A8 | |
| 55 | PF15 | I/O | FSMC_A9 | |
| 56 | PG0 | I/O | FSMC_A10 | |
| 57 | PG1 | I/O | FSMC_A11 | |
| 58 | PE7 | I/O | FSMC_D4 | |
| 59 | PE8 | I/O | FSMC_D5 | |
| 60 | PE9 | I/O | FSMC_D6 | |
| 61 | VSS | Power | | |
| 62 | VDD | Power | | |
| 63 | PE10 | I/O | FSMC_D7 | |
| 64 | PE11 | I/O | FSMC_D8 | |
| 65 | PE12 | I/O | FSMC_D9 | |
| 66 | PE13 | I/O | FSMC_D10 | |
| 67 | PE14 | I/O | FSMC_D11 | |
| 68 | PE15 | I/O | FSMC_D12 | |
| 69 | PB10 | I/O | I2C2_SCL | |
| 70 | PB11 | I/O | I2C2_SDA | |
| 71 | VCAP_1 | Power | | |
| 72 | VDD | Power | | |
| 73 | PB12 | I/O | CAN2_RX | |
| 74 | PB13 | I/O | CAN2_TX | |
| 77 | PD8 | I/O | FSMC_D13 | |
| 78 | PD9 | I/O | FSMC_D14 | |
| 79 | PD10 | I/O | FSMC_D15 | |
| 80 | PD11 | I/O | FSMC_A16, FSMC_CLE | |
| 81 | PD12 | I/O | FSMC_A17, FSMC_ALE | |
| 82 | PD13 | I/O | FSMC_A18 | |
| 83 | VSS | Power | | |
| 84 | VDD | Power | | |
| 85 | PD14 | I/O | FSMC_D0 | |
| 86 | PD15 | I/O | FSMC_D1 | |
| 87 | PG2 | I/O | FSMC_A12 | |
| 88 | PG3 | I/O | FSMC_A13 | |
| 89 | PG4 | I/O | FSMC_A14 | |
| 90 | PG5 | I/O | FSMC_A15 | |

| Pin Number LQFP144 | Pin Name (function after reset) | Pin Type | Alternate Function(s) | Label |
|---|---|---|---|---|
| 92 | PG7 | I/O | USART6_CK | |
| 94 | VSS | Power | | |
| 95 | VDD | Power | | |
| 96 | PC6 | I/O | USART6_TX | |
| 97 | PC7 | I/O | USART6_RX | |
| 98 | PC8 | I/O | SDIO_D0 | |
| 99 | PC9 | I/O | SDIO_D1 | |
| 102 | PA10 | I/O | USB_OTG_FS_ID | |
| 103 | PA11 | I/O | USB_OTG_FS_DM | |
| 104 | PA12 | I/O | USB_OTG_FS_DP | |
| 106 | VCAP_2 | Power | | |
| 107 | VSS | Power | | |
| 108 | VDD | Power | | |
| 111 | PC10 | I/O | SDIO_D2 | |
| 112 | PC11 | I/O | SDIO_D3 | |
| 113 | PC12 | I/O | SDIO_CK | |
| 114 | PD0 | I/O | FSMC_D2 | |
| 115 | PD1 | I/O | FSMC_D3 | |
| 116 | PD2 | I/O | SDIO_CMD | |
| 118 | PD4 | I/O | FSMC_NOE | |
| 119 | PD5 | I/O | FSMC_NWE | |
| 120 | VSS | Power | | |
| 121 | VDD | Power | | |
| 122 | PD6 | I/O | FSMC_NWAIT | |
| 123 | PD7 | I/O | FSMC_NE1 | |
| 124 | PG9 | I/O | FSMC_NCE3 | |
| 125 | PG10 | I/O | FSMC_NCE4_1 | |
| 126 | PG11 | I/O | FSMC_NCE4_2 | |
| 128 | PG13 | I/O | FSMC_A24 | |
| 129 | PG14 | I/O | FSMC_A25 | |
| 130 | VSS | Power | | |
| 131 | VDD | Power | | |
| 136 | PB6 | I/O | I2C1_SCL | |
| 137 | PB7 | I/O | I2C1_SDA | |
| 138 | BOOT0 | Boot | | |
| 139 | PB8 | I/O | CAN1_RX | |
| 140 | PB9 | I/O | CAN1_TX | |
| 141 | PE0 | I/O | FSMC_NBL0 | |
| 142 | PE1 | I/O | FSMC_NBL1 | |

| Pin Number LQFP144 | Pin Name (function after reset) | Pin Type | Alternate Function(s) | Label |
|---|---|---|---|---|
| 143 | PDR_ON | Reset | | |
| 144 | VDD | Power | | |

# 4. IPs and Middleware Configuration

## 4.1. CAN1

**mode: Mode**

### Bit Timings Parameters:

| | |
|---|---|
| Prescaler (for Time Quantum) | 16 |
| Time Quantum | **380.95238095238096 *** |
| Time Quanta in Bit Segment 1 | 1 Time |
| Time Quanta in Bit Segment 2 | 1 Time |
| Time for one Bit | **1142 *** |
| ReSynchronization Jump Width | 1 Time |

### Basic Parameters:

| | |
|---|---|
| Time Triggered Communication Mode | Disable |
| Automatic Bus-Off Management | Disable |
| Automatic Wake-Up Mode | Disable |
| No-Automatic Retransmission | Disable |
| Receive Fifo Locked Mode | Disable |
| Transmit Fifo Priority | Disable |

### Advanced Parameters:

| | |
|---|---|
| Operating Mode | Normal |

## 4.2. CAN2

**mode: Mode**

### Bit Timings Parameters:

| | |
|---|---|
| Prescaler (for Time Quantum) | 16 |
| Time Quantum | **380.95238095238096 *** |
| Time Quanta in Bit Segment 1 | 1 Time |
| Time Quanta in Bit Segment 2 | 1 Time |
| Time for one Bit | **1142 *** |
| ReSynchronization Jump Width | 1 Time |

### Basic Parameters:

| | |
|---|---|
| Time Triggered Communication Mode | Disable |
| Automatic Bus-Off Management | Disable |
| Automatic Wake-Up Mode | Disable |
| No-Automatic Retransmission | Disable |

| | |
|---|---|
| Receive Fifo Locked Mode | Disable |
| Transmit Fifo Priority | Disable |

### Advanced Parameters:

| | |
|---|---|
| Operating Mode | Normal |

## 4.3. CRC

**mode: Activated**

## 4.4. FSMC

### 4.4.1. [NOR Flash/PSRAM/SRAM/ROM 1]

**Chip select: NE1**
**Memory type: SRAM**
**Address: 26 bits**
**Data: 16 bits**
**Wait: Asynchronous**
**mode: Byte enable**

### NOR/PSRAM control:

| | |
|---|---|
| Memory type | SRAM |
| Bank | Bank 1 NOR/PSRAM 1 |
| Write operation | Disabled |
| Extended mode | Disabled |
| Wait signal polarity | Low polarity |
| Memory type | SRAM |
| Bank | Bank 1 NOR/PSRAM 1 |
| Write operation | Disabled |
| Extended mode | Disabled |
| Wait signal polarity | Low polarity |

### NOR/PSRAM timing:

| | |
|---|---|
| Address setup time in HCLK clock cycles | 15 |
| Data setup time in HCLK clock cycles | 255 |
| Bus turn around time in HCLK clock cycles | 15 |
| Address setup time in HCLK clock cycles | 15 |
| Data setup time in HCLK clock cycles | 255 |
| Bus turn around time in HCLK clock cycles | 15 |

### 4.4.2. [NAND Flash 1]

**Chip select: NCE3**
**Data/Address: 16 bits**
**Ready or busy: NWAIT**

#### NAND control:

| | |
|---|---|
| Bank | NAND bank 3 |
| Data size | 16 bits |
| ECC computation | Disabled |
| ECC page size | 256 bytes |
| CLE low to RE low delay in HCLK cycles | **1 *** |
| ALE low to RE low delay in HCLK cycles | **1 *** |

#### NAND common space timing in HCLK cycles:

| | |
|---|---|
| Common space setup time | **253 *** |
| Common space wait setup time | **253 *** |
| Common space hold setup time | 252 |
| Common space Hi-Z setup time | **253 *** |

#### NAND attribute space timing in HCLK cycles:

| | |
|---|---|
| Attribute space setup time | **253 *** |
| Attribute space wait setup time | **253 *** |
| Attribute space hold setup time | 252 |
| Attribute space Hi-Z setup time | 252 |

### 4.4.3. [Compact Flash]

**mode: NCE4_1+NCE4_2 Chip Selects**
**Address: 11 bits**
**mode: Data: 16 bits**
**mode: Wait**
**mode: Interrupt**

#### CF control:

| | |
|---|---|
| Bank | CF bank 4 |
| CLE low to RE low delay in HCLK cycles | **1 *** |
| ALE low to RE low delay in HCLK cycles | **1 *** |

#### CF common space timing in HCLK cycles:

| | |
|---|---|
| Common space setup time | **253 *** |
| Common space wait setup time | **253 *** |
| Common space hold setup time | 252 |
| Common space Hi-Z setup time | 252 |

### CF attribute space timing in HCLK cycles:

| | |
|---|---|
| Attribute space setup time | **253 *** |
| Attribute space wait setup time | **253 *** |
| Attribute space hold setup time | 252 |
| Attribute space Hi-Z setup time | 252 |

### CF I/O space timing in HCLK cycles:

| | |
|---|---|
| I/O space setup time | **253 *** |
| I/O space wait setup time | **253 *** |
| I/O space hold setup time | 252 |
| I/O space Hi-Z setup time | 252 |

## *4.5. I2C1*

### I2C: I2C

### Master Features:

| | |
|---|---|
| I2C Speed Mode | Standard Mode |
| I2C Clock Speed (Hz) | 100000 |

### Slave Features:

| | |
|---|---|
| Clock No Stretch Mode | Disabled |
| Primary Address Length selection | 7-bit |
| Dual Address Acknowledged | Disabled |
| Primary slave address | 0 |
| General Call address detection | Disabled |

## *4.6. I2C2*

### I2C: I2C

### Master Features:

| | |
|---|---|
| I2C Speed Mode | Standard Mode |
| I2C Clock Speed (Hz) | 100000 |

### Slave Features:

| | |
|---|---|
| Clock No Stretch Mode | Disabled |
| Primary Address Length selection | 7-bit |

| | |
|---|---|
| Dual Address Acknowledged | Disabled |
| Primary slave address | 0 |
| General Call address detection | Disabled |

## 4.7. RCC

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

#### System Parameters:

| | |
|---|---|
| VDD voltage (V) | 3.3 |
| Instruction Cache | Enabled |
| Prefetch Buffer | Enabled |
| Data Cache | Enabled |
| Flash Latency(WS) | 5 WS (6 CPU cycle) |

#### RCC Parameters:

| | |
|---|---|
| HSI Calibration Value | 16 |

#### Power Parameters:

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

## 4.8. RNG

### mode: Activated

## 4.9. SDIO

### Mode: MMC 4 bits Wide bus

## 4.10. SPI1

### Mode: Full-Duplex Master

#### Basic Parameters:

| | |
|---|---|
| Frame Format | Motorola |
| Data Size | 8 Bits |
| First Bit | MSB First |

#### Clock Parameters:

| | |
|---|---|
| Prescaler (for Baud Rate) | 2 |
| Baud Rate | **42.0 MBits/s *** |

| | |
|---|---|
| Clock Polarity (CPOL) | Low |
| Clock Phase (CPHA) | 1 Edge |

### Advanced Parameters:

| | |
|---|---|
| CRC Calculation | Disabled |
| NSS Signal Type | Software |

## 4.11. UART4

### 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 |

## 4.12. USART2

### Mode: Synchronous

### Basic Parameters:

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

### Advanced Parameters:

| | |
|---|---|
| Data Direction | Receive and Transmit |

### Clock Parameters:

| | |
|---|---|
| Clock Polarity | Low |
| Clock Phase | One Edge |
| Clock Last Bit | Disable |

## 4.13. USART6

### Mode: Synchronous

### Basic Parameters:

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

### Advanced Parameters:

| | |
|---|---|
| Data Direction | Receive and Transmit |

### Clock Parameters:

| | |
|---|---|
| Clock Polarity | Low |
| Clock Phase | One Edge |
| Clock Last Bit | Disable |

## *4.14. USB_OTG_FS*

### Mode: OTG/Dual_Role_Device

*** User modified value**

# 5. System Configuration

## 5.1. GPIO configuration

| IP | Pin | Signal | GPIO mode | GPIO pull/up pull down | Max Speed | User Label |
|---|---|---|---|---|---|---|
| CAN1 | PB8 | CAN1_RX | Alternate Function Push Pull | No pull-up and no pull-down | **High *** | |
| | PB9 | CAN1_TX | Alternate Function Push Pull | No pull-up and no pull-down | **High *** | |
| CAN2 | PB12 | CAN2_RX | Alternate Function Push Pull | No pull-up and no pull-down | **High *** | |
| | PB13 | CAN2_TX | Alternate Function Push Pull | No pull-up and no pull-down | **High *** | |
| FSMC | PE2 | FSMC_A23 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PE3 | FSMC_A19 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PE4 | FSMC_A20 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PE5 | FSMC_A21 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PE6 | FSMC_A22 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PF0 | FSMC_A0 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PF1 | FSMC_A1 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PF2 | FSMC_A2 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PF3 | FSMC_A3 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PF4 | FSMC_A4 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PF5 | FSMC_A5 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PF6 | FSMC_NIORD | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PF7 | FSMC_NREG | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PF8 | FSMC_NIOWR | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PF9 | FSMC_CD | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PF10 | FSMC_INTR | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PF12 | FSMC_A6 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PF13 | FSMC_A7 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PF14 | FSMC_A8 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PF15 | FSMC_A9 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PG0 | FSMC_A10 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PG1 | FSMC_A11 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PE7 | FSMC_D4 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PE8 | FSMC_D5 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PE9 | FSMC_D6 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PE10 | FSMC_D7 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PE11 | FSMC_D8 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PE12 | FSMC_D9 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PE13 | FSMC_D10 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | | | | | | |

| IP | Pin | Signal | GPIO mode | GPIO pull/up pull down | Max Speed | User Label |
|---|---|---|---|---|---|---|
| | PE14 | FSMC_D11 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PE15 | FSMC_D12 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PD8 | FSMC_D13 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PD9 | FSMC_D14 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PD10 | FSMC_D15 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PD11 | FSMC_A16 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PD12 | FSMC_A17 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PD13 | FSMC_A18 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PD14 | FSMC_D0 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PD15 | FSMC_D1 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PG2 | FSMC_A12 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PG3 | FSMC_A13 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PG4 | FSMC_A14 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PG5 | FSMC_A15 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PD0 | FSMC_D2 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PD1 | FSMC_D3 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PD4 | FSMC_NOE | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PD5 | FSMC_NWE | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PD6 | FSMC_NWAIT | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PD7 | FSMC_NE1 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PG9 | FSMC_NCE3 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PG10 | FSMC_NCE4_1 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PG11 | FSMC_NCE4_2 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PG13 | FSMC_A24 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PG14 | FSMC_A25 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PE0 | FSMC_NBL0 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PE1 | FSMC_NBL1 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| I2C1 | PB6 | I2C1_SCL | Alternate Function Open Drain | Pull-up | **High *** | |
| | PB7 | I2C1_SDA | Alternate Function Open Drain | Pull-up | **High *** | |
| I2C2 | PB10 | I2C2_SCL | Alternate Function Open Drain | Pull-up | **High *** | |
| | PB11 | I2C2_SDA | Alternate Function Open Drain | Pull-up | **High *** | |
| RCC | PH0-OSC_IN | RCC_OSC_IN | n/a | n/a | n/a | |
| | PH1-OSC_OUT | RCC_OSC_OUT | n/a | n/a | n/a | |
| SDIO | PC8 | SDIO_D0 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PC9 | SDIO_D1 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PC10 | SDIO_D2 | Alternate Function Push Pull | No pull-up and no pull-down | High | |

| IP | Pin | Signal | GPIO mode | GPIO pull/up pull down | Max Speed | User Label |
|---|---|---|---|---|---|---|
| | PC11 | SDIO_D3 | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PC12 | SDIO_CK | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| | PD2 | SDIO_CMD | Alternate Function Push Pull | No pull-up and no pull-down | High | |
| SPI1 | PA5 | SPI1_SCK | Alternate Function Push Pull | No pull-up and no pull-down | **High *** | |
| | PA6 | SPI1_MISO | Alternate Function Push Pull | No pull-up and no pull-down | **High *** | |
| | PA7 | SPI1_MOSI | Alternate Function Push Pull | No pull-up and no pull-down | **High *** | |
| UART4 | PA0-WKUP | UART4_TX | Alternate Function Push Pull | Pull-up | **High *** | |
| | PA1 | UART4_RX | Alternate Function Push Pull | Pull-up | **High *** | |
| USART2 | PA2 | USART2_TX | Alternate Function Push Pull | No pull-up and no pull-down | **High *** | |
| | PA3 | USART2_RX | Alternate Function Push Pull | No pull-up and no pull-down | **High *** | |
| | PA4 | USART2_CK | Alternate Function Push Pull | No pull-up and no pull-down | **High *** | |
| USART6 | PG7 | USART6_CK | Alternate Function Push Pull | No pull-up and no pull-down | **High *** | |
| | PC6 | USART6_TX | Alternate Function Push Pull | No pull-up and no pull-down | **High *** | |
| | PC7 | USART6_RX | Alternate Function Push Pull | No pull-up and no pull-down | **High *** | |
| USB_OTG_FS | PA10 | USB_OTG_FS_ID | Alternate Function Push Pull | No pull-up and no pull-down | **High *** | |
| | PA11 | USB_OTG_FS_DM | Alternate Function Push Pull | No pull-up and no pull-down | **High *** | |
| | PA12 | USB_OTG_FS_DP | Alternate Function Push Pull | No pull-up and no pull-down | **High *** | |

## 5.2. DMA configuration

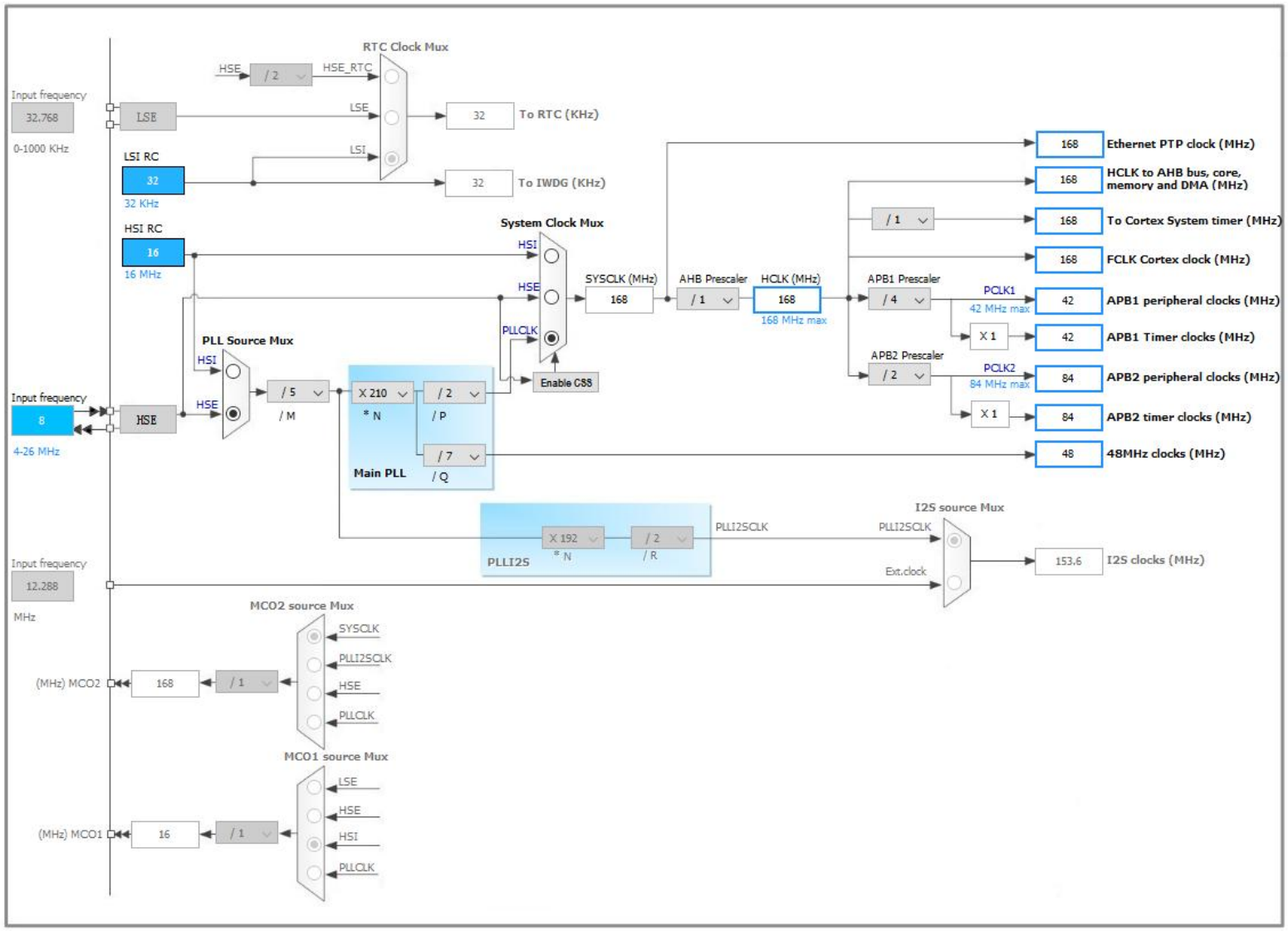
nothing configured in DMA service

## 5.3. NVIC configuration

| Interrupt Table | Enable | Preenmption Priority | SubPriority |
|---|---|---|---|
| System tick timer | true | 0 | 0 |
| Non Maskable Interrupt | unused | | |
| Memory management fault | unused | | |
| Pre-fetch fault, memory access fault | unused | | |
| Undefined instruction or illegal state | unused | | |
| Debug Monitor | unused | | |
| RCC global interrupt | unused | | |
| CAN1 TX interrupts | unused | | |
| CAN1 RX0 interrupts | unused | | |
| CAN1 RX1 interrupt | unused | | |
| CAN1 SCE interrupt | unused | | |
| I2C1 event interrupt | unused | | |
| I2C1 error interrupt | unused | | |
| I2C2 event interrupt | unused | | |
| I2C2 error interrupt | unused | | |
| SPI1 global interrupt | unused | | |
| USART2 global interrupt | unused | | |
| FSMC global interrupt | unused | | |
| UART4 global interrupt | unused | | |
| CAN2 TX interrupts | unused | | |
| CAN2 RX0 interrupts | unused | | |
| CAN2 RX1 interrupt | unused | | |
| CAN2 SCE interrupt | unused | | |
| USART6 global interrupt | unused | | |
| HASH and RNG global interrupt | unused | | |

*** User modified value**

# 6. Clock Tree Configuration



# 7. Power Plugin report

## 7.1. Microcontroller Selection

| | |
|---|---|
| Series | STM32F4 |
| Line | STM32F407/417 |
| MCU | STM32F407ZETx |
| Datasheet | 022152_Rev5 |

## 7.2. Parameter Selection

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

# 8. Software Project

## 8.1. Project Settings

| Name | Value |
|---|---|
| Project Name | STCubeGenerated |
| Project Folder | D:\github\onboard- |
| Toolchain / IDE | MDK-ARM |
| Firmware Package Name and Version | STM32Cube FW_F4 V1.7.0 |

## 8.2. 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 |

## 8.3. Toolchains Settings

| Name | Value |
|---|---|
| Compiler Optimizations | Balanced Size/Speed |